

Town of Bon Accord
AGENDA
Council Briefing Committee Meeting
June 29, 2022 5:00 p.m.
Live streamed on Bon Accord YouTube Channel

1. **CALL TO ORDER**
2. **ADOPTION OF AGENDA**
3. **NEW BUSINESS**
 - 3.1. Stormwater Management Recommendations (enclosure)
4. **BYLAWS | POLICIES | AGREEMENTS**
 - BYLAWS**
 - 4.1. Procedural Bylaw Draft R2 (enclosure)
 - POLICIES**
 - 4.2. Council Long Term Service Awards and Employee Long Term Service Awards (enclosure)
5. **CLOSED SESSION**
6. **ADJOURNMENT**

**TOWN OF BON ACCORD
COUNCIL BRIEFING REPORT**

Meeting:	Council Briefing Committee Meeting
Meeting Date:	June 29 th , 2022
Presented by:	Jodi Brown Town Manager/CAO
Title:	Stormwater Management Information
Agenda Item No.	3.1

Given the flooding that occurred in areas of the Town this past spring, the Operations Manager has created a presentation to review possible options or recommendations to be built into future capital budgets.

The presentation is enclosed, and a copy of the 2019 Stormwater Master Plan has also been enclosed for reference.

STRATEGIC ALIGNMENT

Priority 3 – Infrastructure

- **Goal:** The Town of Bon Accord is maintaining and improving all infrastructure in a fiscally responsible manner.

COSTS/SOURCES OF FUNDING

Future capital budget.

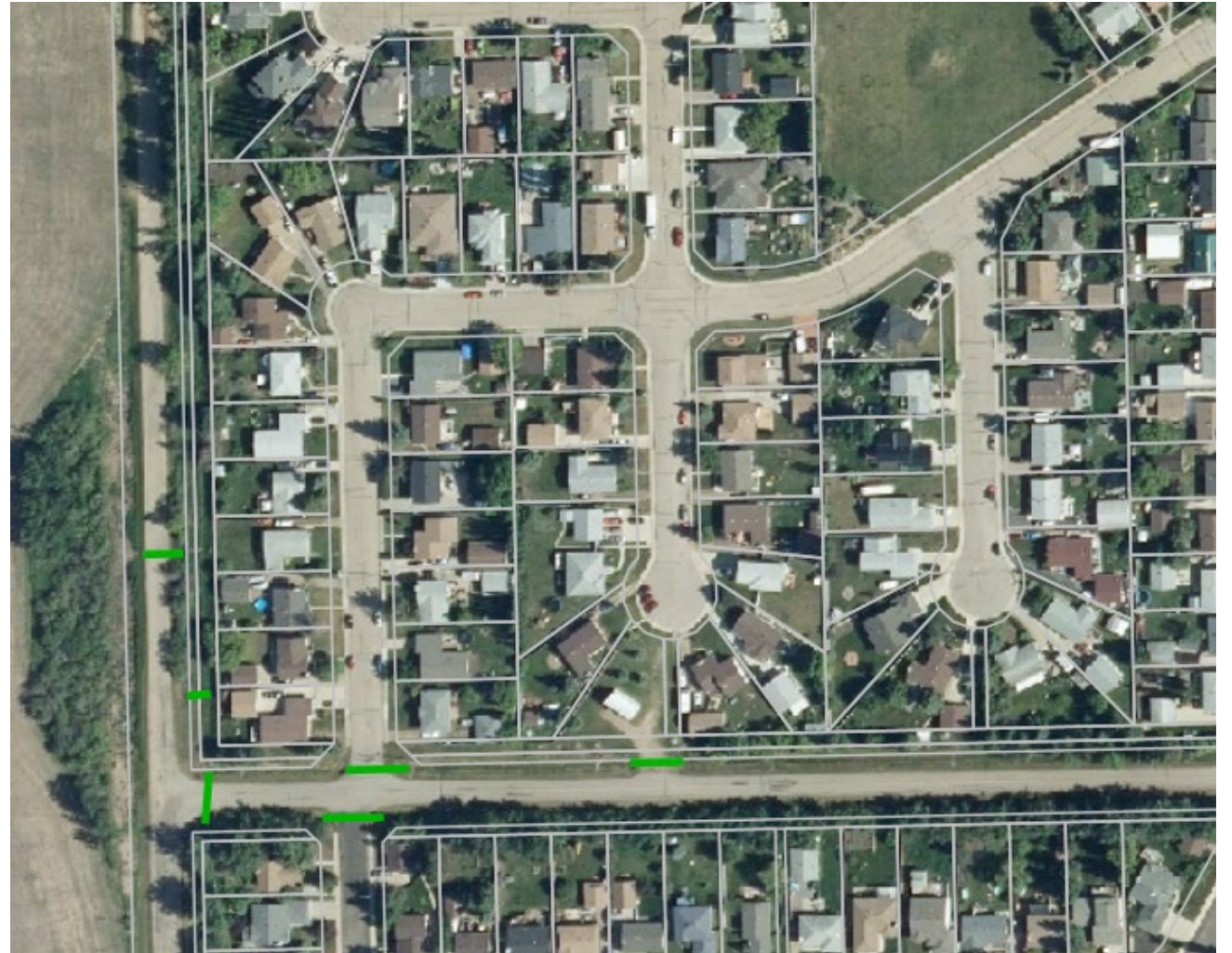


Stormwater Management

Focus on areas with 2022
spring flooding (Northwest
area of town)

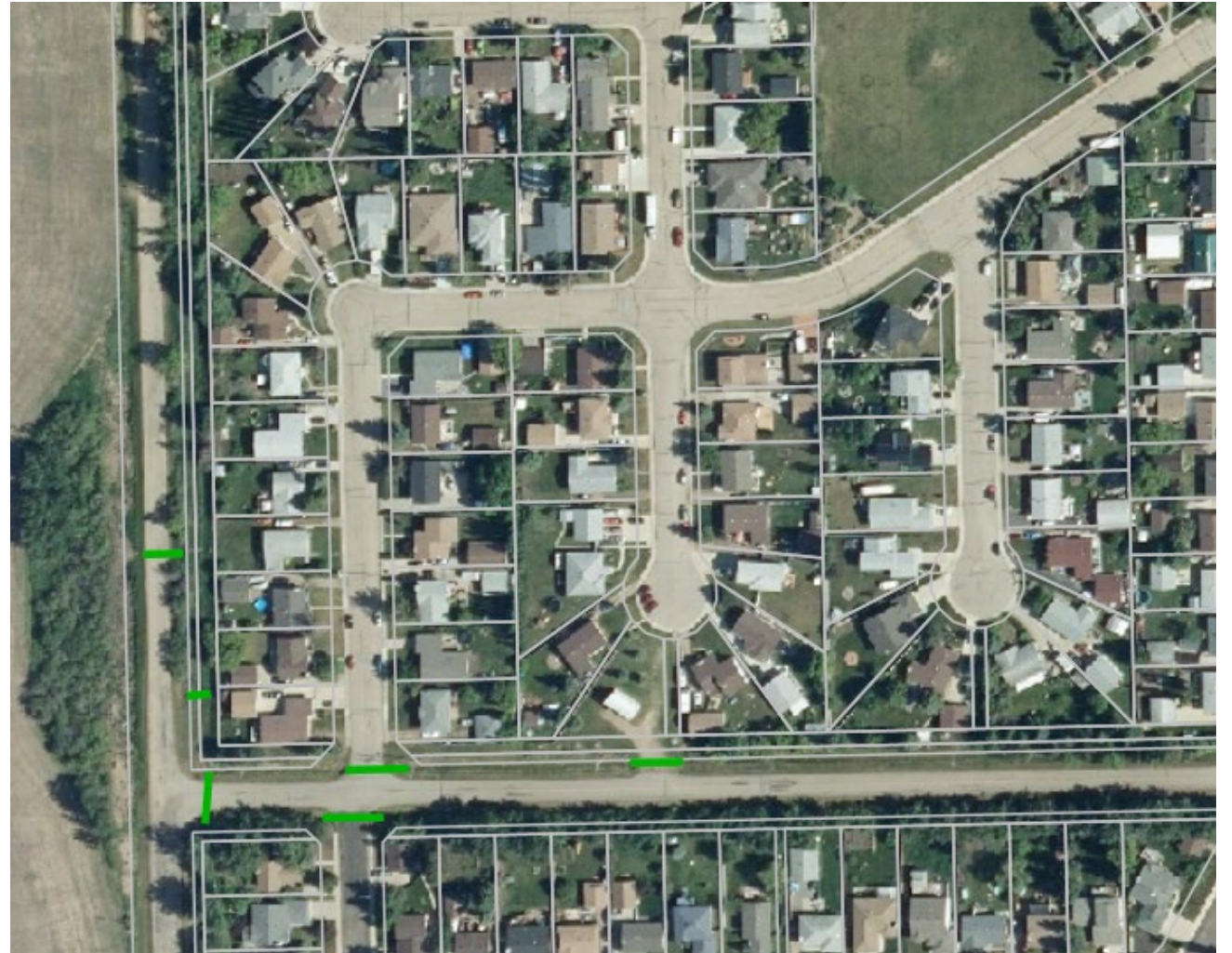
54 St and 55 St

- Surface drainage
- Ditches on 51 Ave at capacity
- Ditches on 57 St at capacity
- Water backed up in Cul-de-sacs
- The above ditches have less than a one percent grade (basically flat) should be closer to a 4 percent grade for proper drainage/flow



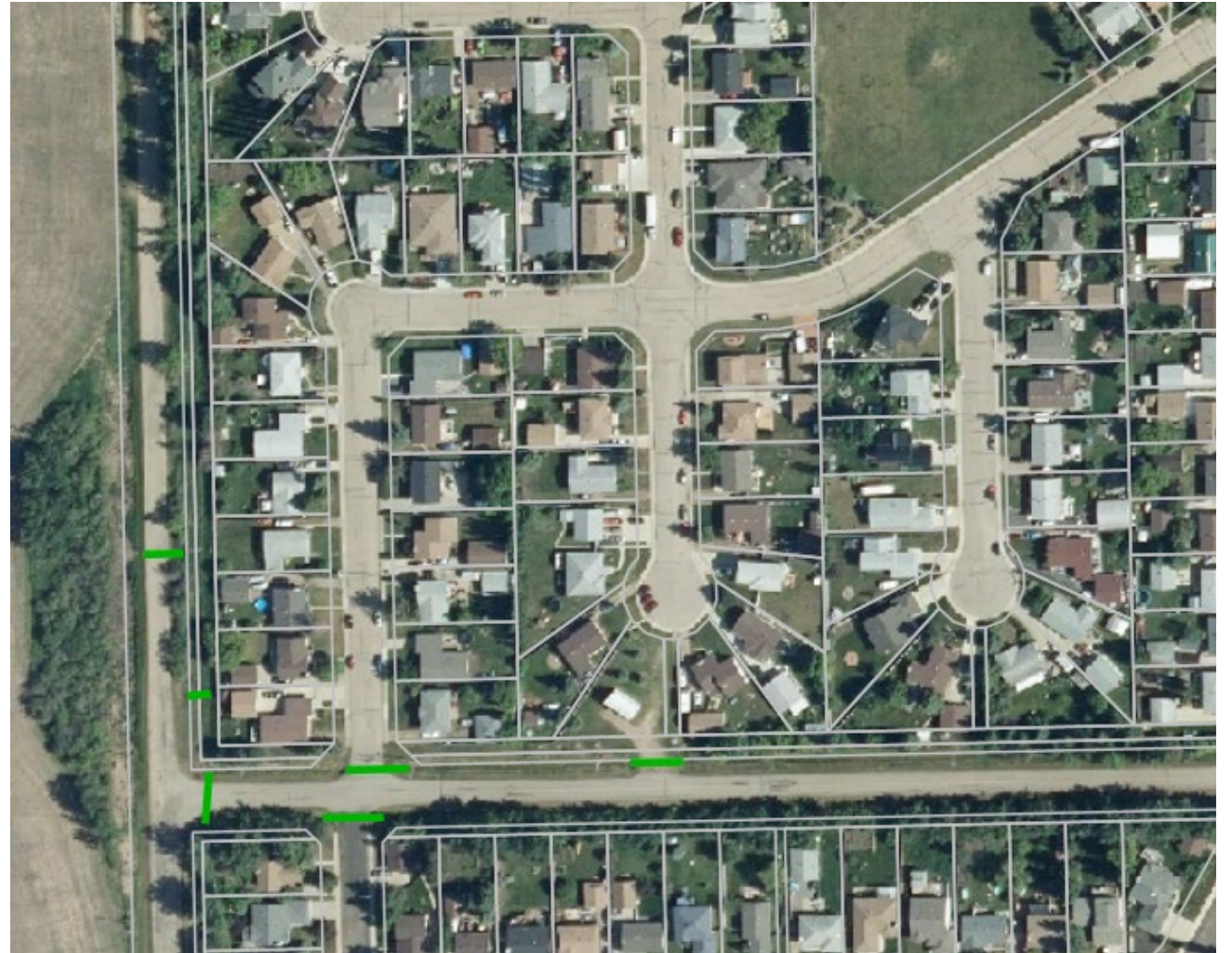
Mitigation Measures

- Install flow control gate on West side of 57 Street
- Continue with ditching on the East side of 57 St where it turns East into field
- Less snow storage in Springbrook Park to reduce spring runoff



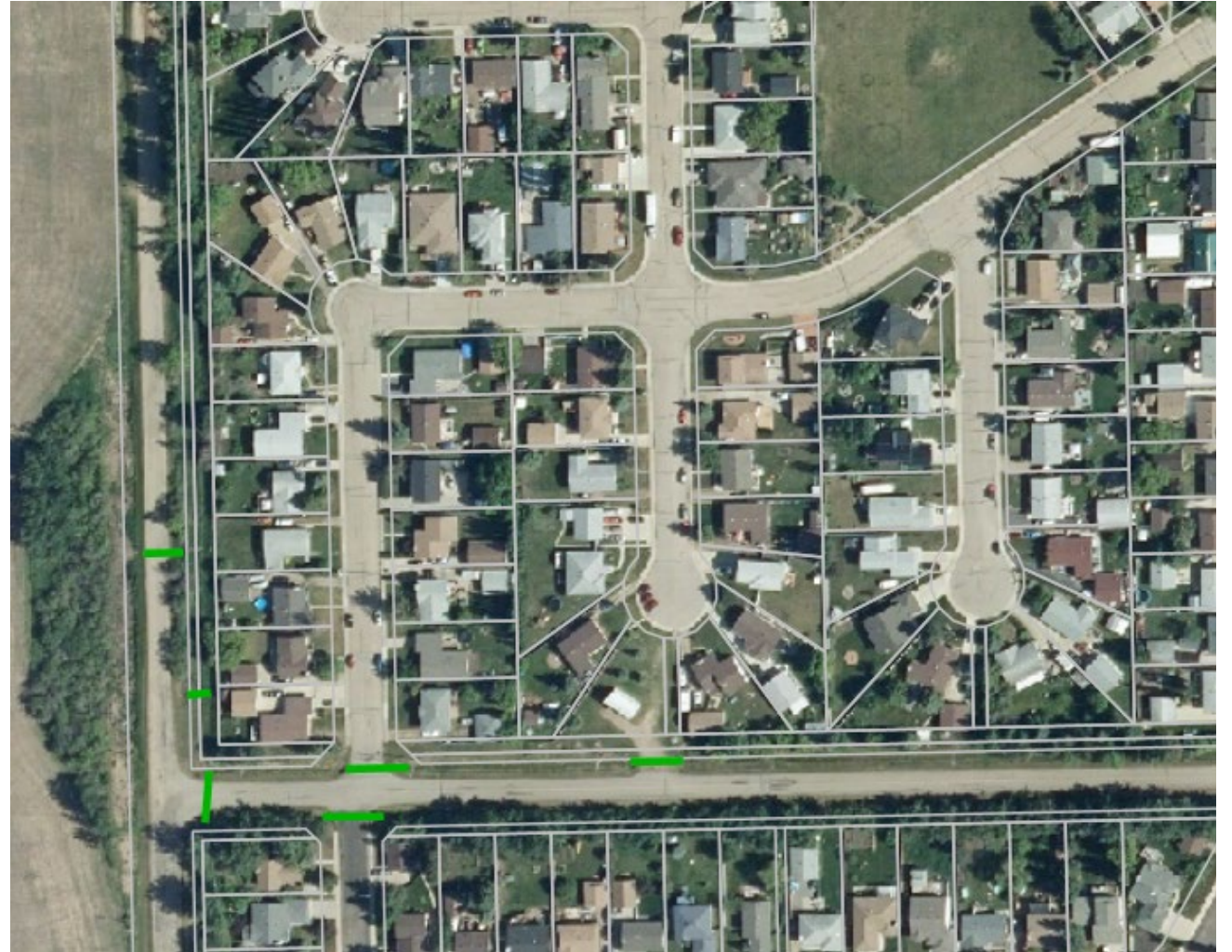
Mitigation Measures

- Culvert South of the Lift Station under Driveway is undersized at 500mm, the proposed size from the engineering study in 2019 is 1650mm
- Culvert under 56 Street is undersized at 500mm, the proposed size from the engineering study in 2019 is 1650mm
- Ditching will be required from 57 Street to 53 Street during new culvert installation
- Ditching on 57 Street from 51 Avenue to the North where the water goes into the field



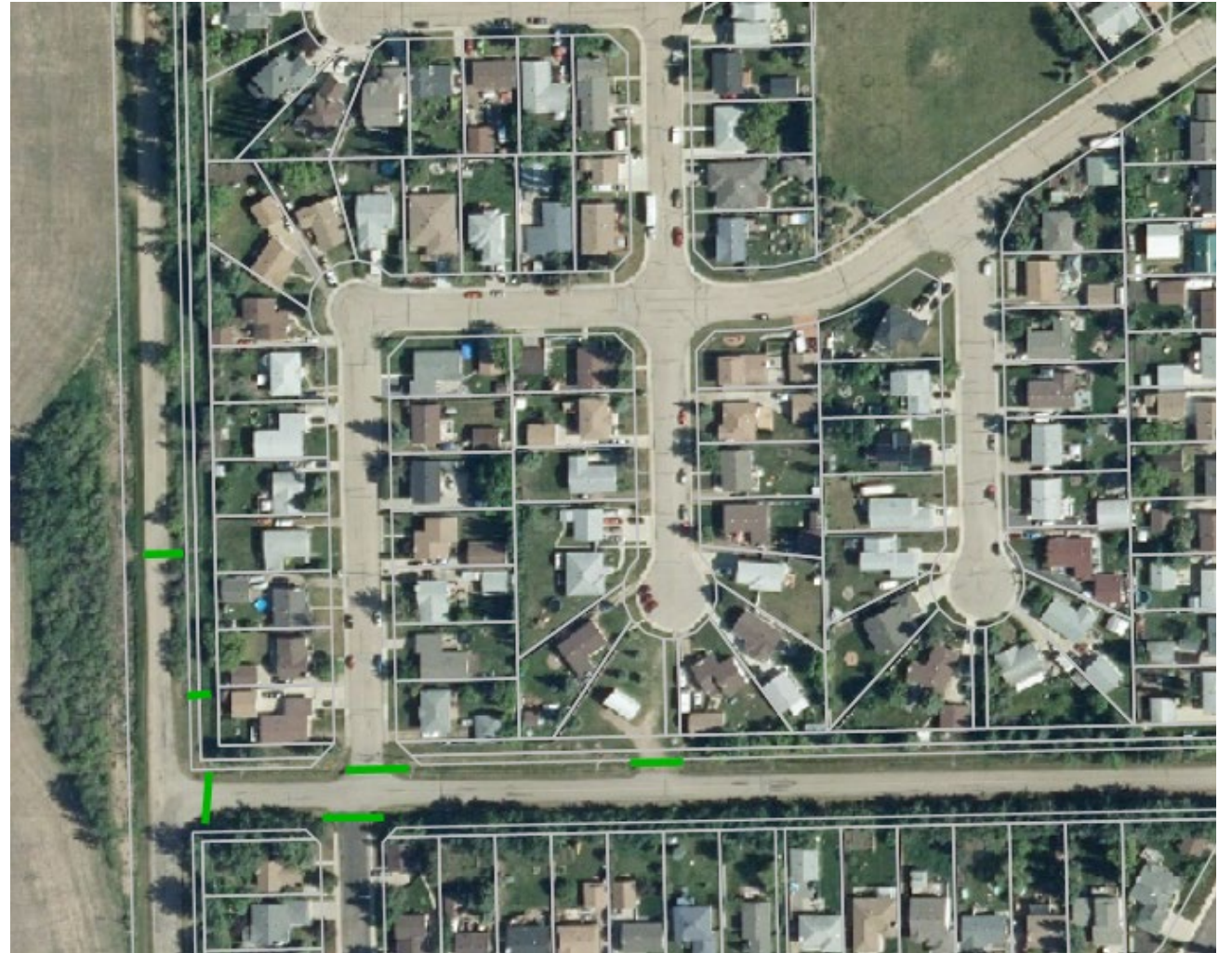
Costs (Approximate)

- Culvert South of the Lift Station under Driveway \$29,000.00 for 17m.
- Culvert under 56 Street \$32,000.00 for 20m.
- Labour for new installation overages and ditching \$60,000.00, town will haul material loaded by contractor to Lagoon.
- Restoration of Asphalt at 56 Street \$7,500.00.



Future Work

- The 2019 Stormwater Master Plan identified other drainage concerns in the town that staff will be looking at once the critical areas are addressed





QUESTIONS





**Associated
Engineering**

*GLOBAL PERSPECTIVE.
LOCAL FOCUS.*

REPORT

Town of Bon Accord

Stormwater Master Plan



OCTOBER 2019

**A Carbon
Neutral
Company**



Platinum
member

CONFIDENTIALITY AND © COPYRIGHT

This document is for the sole use of the addressee and Associated Engineering Alberta Ltd. The document contains proprietary and confidential information that shall not be reproduced in any manner or disclosed to or discussed with any other parties without the express written permission of Associated Engineering Alberta Ltd. Information in this document is to be considered the intellectual property of Associated Engineering Alberta Ltd. in accordance with Canadian copyright law.

This report was prepared by Associated Engineering Alberta Ltd. for the account of Town of Bon Accord. The material in it reflects Associated Engineering Alberta Ltd.'s best judgement, in the light of the information available to it, at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Associated Engineering Alberta Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

EXECUTIVE SUMMARY

The Town of Bon Accord (the Town) currently operates and maintains a stormwater drainage system. This system is comprised of ditches and culverts, which convey overland flow, and underground storm pipes to capture flows. Typically, the major system is comprised of infrastructure that conveys overland stormwater runoff (ditches, culverts) and the minor system includes underground infrastructure (storm pipes). It is evident that the existing stormwater infrastructure is not performing to its design intent, as the Town has been experiencing surface water drainage issues, ponding and localized flooding at various locations within the Town.



Surface water ponding in residential neighbourhood (March 2019)

Previous drainage studies, including a Drainage Study completed by UMA in 2005, identified existing drainage issues within the Town and provided general mitigation solutions. The Town retained Associated Engineering to complete a Stormwater Master Plan in April 2019 to identify existing drainage issues, provide mitigation options and develop a stormwater management plan for future development.

Associated Engineering undertook the following tasks to complete the Stormwater Master Plan:

- Background review of existing reports and as-built drawings;
- Reviewed various design standards and provided a recommendation;
- Assessed the existing minor and major systems within the Town, based on the current land use;
- Identified existing drainage issues and proposed upgrades;
- Assessed the minor and major systems, based on the future development;
- Assessed proposed upgrades based on future development;
- Developed a stormwater management plan for future development; and,
- Provided preliminary cost estimates (Class D) for proposed system upgrades.

There are three existing natural areas located in the Town boundary. These natural areas act as stormwater management facilities, as they collect and store stormwater runoff from the existing development and the undeveloped lands, to the north and west of the Town, before facilitating drainage towards the Sturgeon River. Only one of the natural areas (Natural Area 3) has an outlet, which discharges north towards the CNR line. The basins convey stormwater runoff through the storm pipes and the ditches and culverts.

The catchment areas for the minor and major systems were delineated using LiDAR data and the Rational Method was used to estimate the flows discharging into the systems. The results from the assessment of the existing minor and major systems concluded that the majority of the Town's stormwater infrastructure does not have capacity to convey flows generated from design storm events. Therefore, recommendations were made to upgrade sections of storm pipes within the minor system and culverts within the major system.

Future development is proposed within the undeveloped lands located north and west of the Town. Based on the proposed future land use, no flows from future developments will discharge into the existing minor system. Culverts within the upgraded major system were assessed based on flows generated from future developments contributing

into the existing systems. Assessment results showed that most upgraded culverts within the existing system have capacity. If the Town carries out the proposed existing system upgrades, it is advantageous to upgrade all culverts for the ultimate development. A preliminary Class D cost estimate for upgrades to the existing minor and major systems was generated. A total of \$3,120,000 was estimated to undertake the improvements.

All future development will require an on-site minor stormwater system and a major stormwater system. To mitigate any impacts on the drainage systems within the area, due to the proposed development, the Town requires stormwater management facilities. The stormwater management facilities will allow system discharge rates to be controlled to the recommended release rate of 6 L/s/ha. The future stormwater management concept for the Town consists of 9 stormwater management facilities.

To mitigate existing issues within the natural areas and to ensure the areas do not have negative impacts on future development and the downstream, improvements are required. All three natural areas are proposed to have control structures to ensure a release rate of 6 L/s/ha and have a normal water level established, based on property line and minimum freeboard.

TABLE OF CONTENTS

SECTION	PAGE NO.
Executive Summary	i
Table of Contents	i
List of Tables	ii
List of Figures	iii
1 Introduction	1-1
1.1 Background Review	1-1
1.2 Existing and Future Developments	1-2
2 Design Criteria	2-5
2.1 Minor System	2-5
2.2 Major System	2-7
3 Existing Drainage Assessment	3-1
3.1 Minor System Assessment	3-2
3.2 Major System Assessment	3-4
4 Future Stormwater Management Plan	4-1
4.1 Minor System	4-1
4.2 Major System	4-1
4.3 Snow Management	4-5
5 Cost Estimate	5-1
5.1 Proposed Upgrades – Existing System	5-1
6 Conclusions and Recommendations	6-1
Closure	
Appendix A - Stormwater Master Plan - Proposed Design Standards Memorandum	
Appendix B - LiDAR Boundaries and Catchment Areas (Figure B-1)	
Appendix C - Existing Minor System Assessment - Detailed Calculations	
Appendix D - Proposed Upgrades to Existing Minor System - Detailed Calculations	
Appendix E - Existing Major System Assessment - Detailed Calculations	
Appendix F - Future Major System Assessment - Detailed Calculations	
Appendix G - Preliminary Cost Estimate	

LIST OF TABLES

	PAGE NO.
Table 2-1 Minor System Design Basis	2-5
Table 2-2 Minor System Runoff Coefficients	2-6
Table 2-3 City of Edmonton Design and Construction Standards – Minor System	2-6
Table 2-4 Major System Runoff Coefficients	2-7
Table 3-1 Drainage Basin Summary	3-1
Table 3-2 Existing Minor System Assessment	3-2
Table 3-3 Proposed Upgrades to Existing Minor System	3-3
Table 3-4 Existing Major System Assessment	3-5
Table 3-5 Proposed Upgrades to Existing Major System	3-6
Table 4-1 Future Major System Assessment	4-1
Table 4-2 Proposed Upgrades to Future Major System	4-2
Table 4-3 Proposed Stormwater Management Facility Characteristics	4-3
Table 5-1 Existing System Upgrades – Cost Estimate	5-1

LIST OF FIGURES

	PAGE NO.
Figure 1-1 Town of Bon Accord	1-1
Figure 1-2 Existing Stormwater System Areas of Concern	1-3
Figure 1-3 Future Land Use Concept	1-4
Figure 3-1 Major Drainage Basins	3-8
Figure 3-2 Existing Stormwater System	3-9
Figure 3-3 Existing Minor System Assessment	3-10
Figure 3-4 Proposed Existing Minor System Upgrades	3-11
Figure 3-5 Existing Major System Assessment	3-12
Figure 3-6 Proposed Existing Major System Upgrades	3-13
Figure 4-1 Future Major System Assessment	4-6
Figure 4-2 Proposed Future Major System Upgrades	4-7
Figure 4-3 Proposed Stormwater Management Facilities	4-8

1 INTRODUCTION

1.1 Background Review

The Town of Bon Accord (the Town) is located approximately 40 km north of Downtown Edmonton on Highway 28. The current Town limits encompass approximately six quarter sections, as shown in **Figure 1-1**. The existing development is primarily within SW-18-56-23-4 and SE-18-56-23-4.

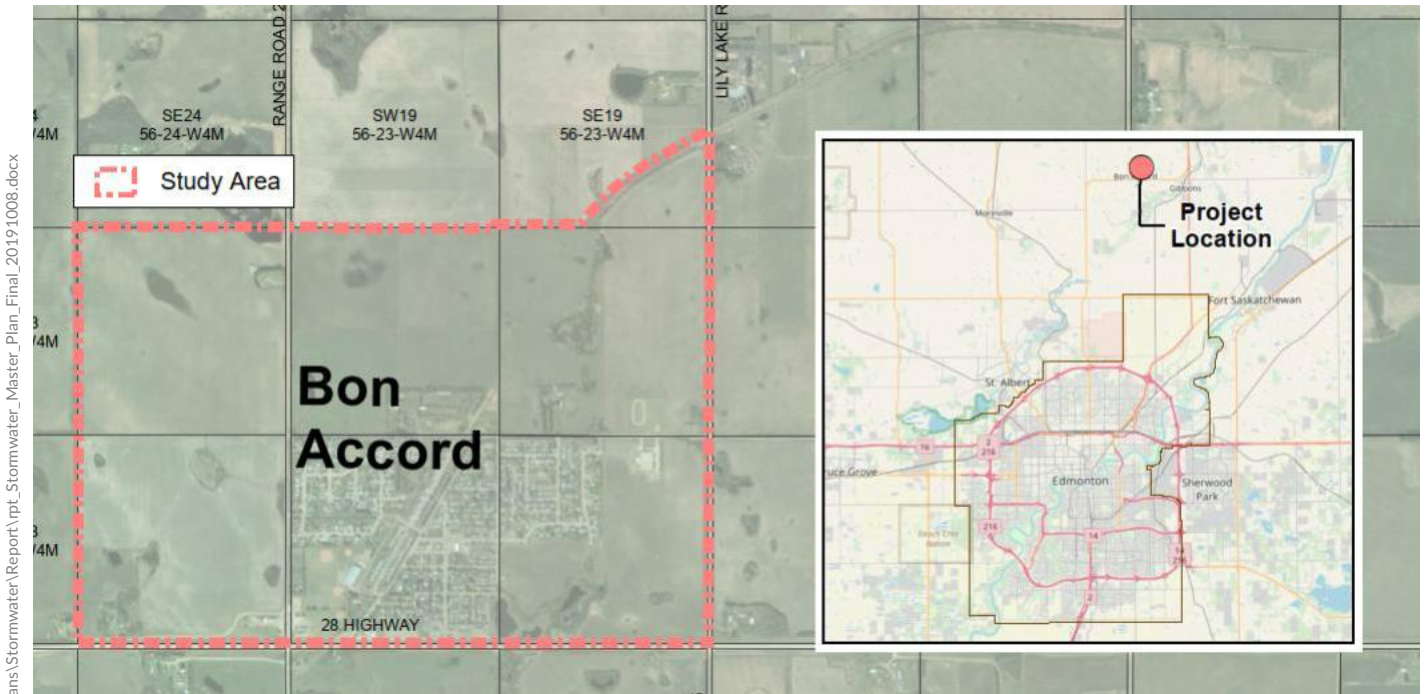


Figure 1-1
Town of Bon Accord

The Town currently operates and maintains a stormwater drainage system. This system is comprised of ditches and culverts, which convey overland flow, and storm pipes to capture flows. Typically, the major system is comprised of infrastructure that conveys overland stormwater runoff (ditches, culverts) and the minor system includes underground infrastructure (storm pipes). It is evident that the existing stormwater infrastructure is not performing to its design intent, as the Town has been experiencing surface water drainage issues, ponding and localized flooding at various locations within the Town.

Previous drainage studies, including a Drainage Study completed by UMA in 2005, identified existing drainage issues within the Town and provided general mitigation solutions. In addition, no stormwater management plan has been developed for the future development. The Town retained Associated Engineering to complete a Stormwater Master Plan to identify existing drainage issues, provide mitigation options and develop a stormwater management plan for the Town and future development.

\\s-edm-fs-01\projects\20193459\00_Master_Servicing\Engineering\03:00_Conceptual_Feasibility_Design_Master_Plans\Stormwater\Report\vpf_Stormwater_Master_Plan_Final_20191008.docx

Associated Engineering reviewed available design reports and completed a site visit with Town personnel in March 2019 to better understand the existing issues. Examples of findings during the review and site visit include the following:

- The topography within the Town is generally flat and has limited grade within the ditches;
- During storm events and spring melt, flooding has been observed at the following locations:
 - Roadway along 51st Avenue and segments along the west ditch of 52nd Street; and,
 - North ditch along 51st Avenue from 56th Street to 53rd Street.
- There are several ditches, and culverts, that are undersized and are unable to convey flows during design storm events; and,
- Due to limited grade and capacity, stormwater runoff accumulates within the ditch network and causes overtopping of sidewalks and roadways.



Ponding in ditch network (March 2019)

Some areas of concern for surface water ponding are highlighted in **Figure 1-2**, which are located within the low sections within the Town. Although surface water ponding has occurred within residential neighbourhoods, the Town has not received any complaints about basement flooding. Only flooding up to property lines has been reported.

1.2 Existing and Future Developments

The existing land use within the current development was based on the 2016 Town of Bon Accord Land Use Bylaw. The future development land use was based on the “Meadows of Bon Accord Servicing Study” (Stantec, 2007), and “Annexation Servicing Study” (MPE Engineering, 2016) illustrated in **Figure 1-3**. Note that the Town recently annexed three quarter sections of land, located west of the existing development, in NE-13-56-24-W4, NW-18-56-23-W4 and SE-13-56-24-W4.




IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TAB/CID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

\\s-efm-fs-01\projects\2019\3459\00_Master_Servicing\Working_Dwg\010_GIS\Map\StormMasterPlan\Figs-3_ExistingStormwaterSystem_AreasofConcern_11x17.mxd
DATE: 7/5/2019



Legend:

-  Potential Ponding Areas (Low Spots)
-  Natural Areas
-  Town Boundary

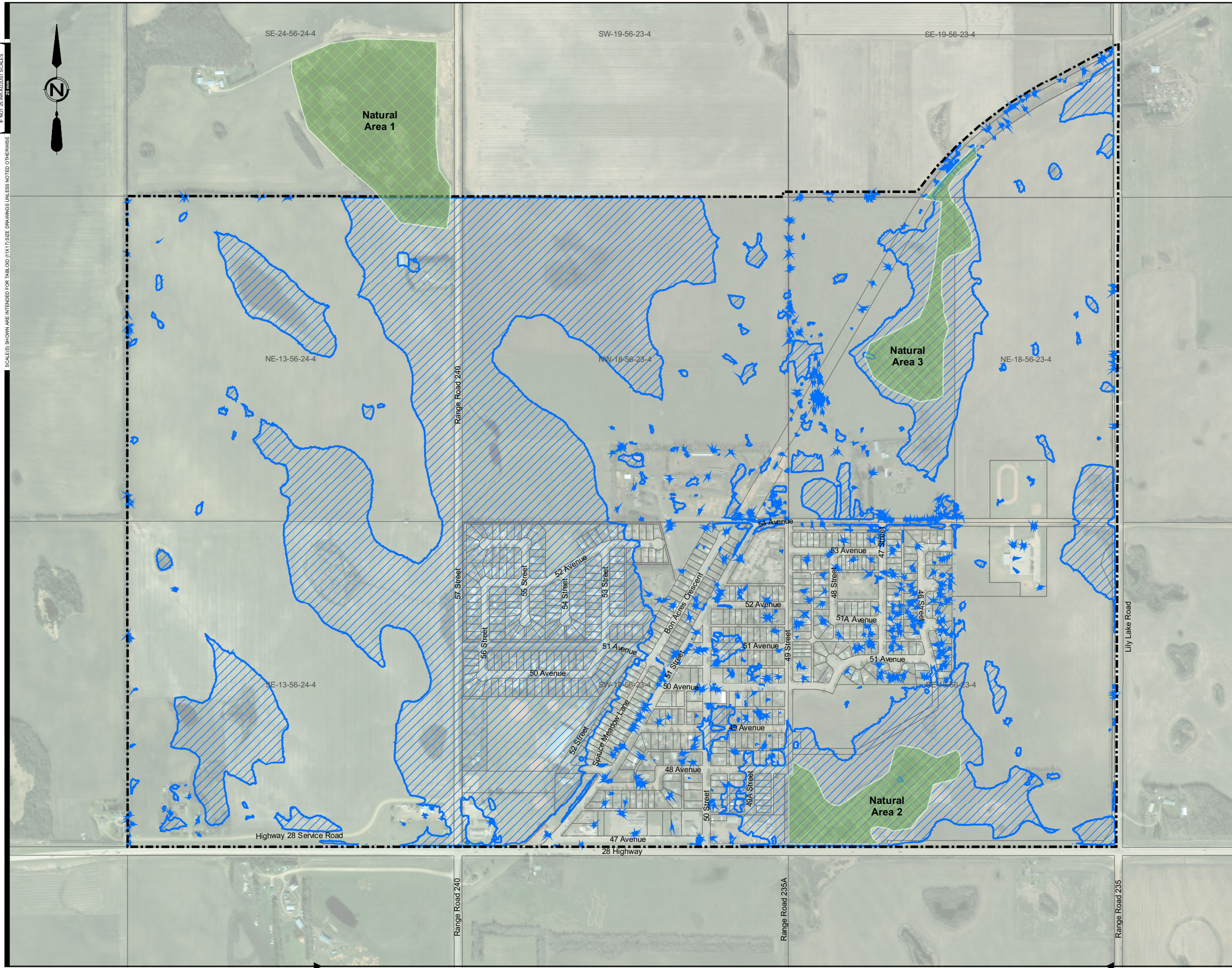


FIGURE No. 1-2

TOWN OF BON ACCORD
STORM MASTER PLAN UPDATE

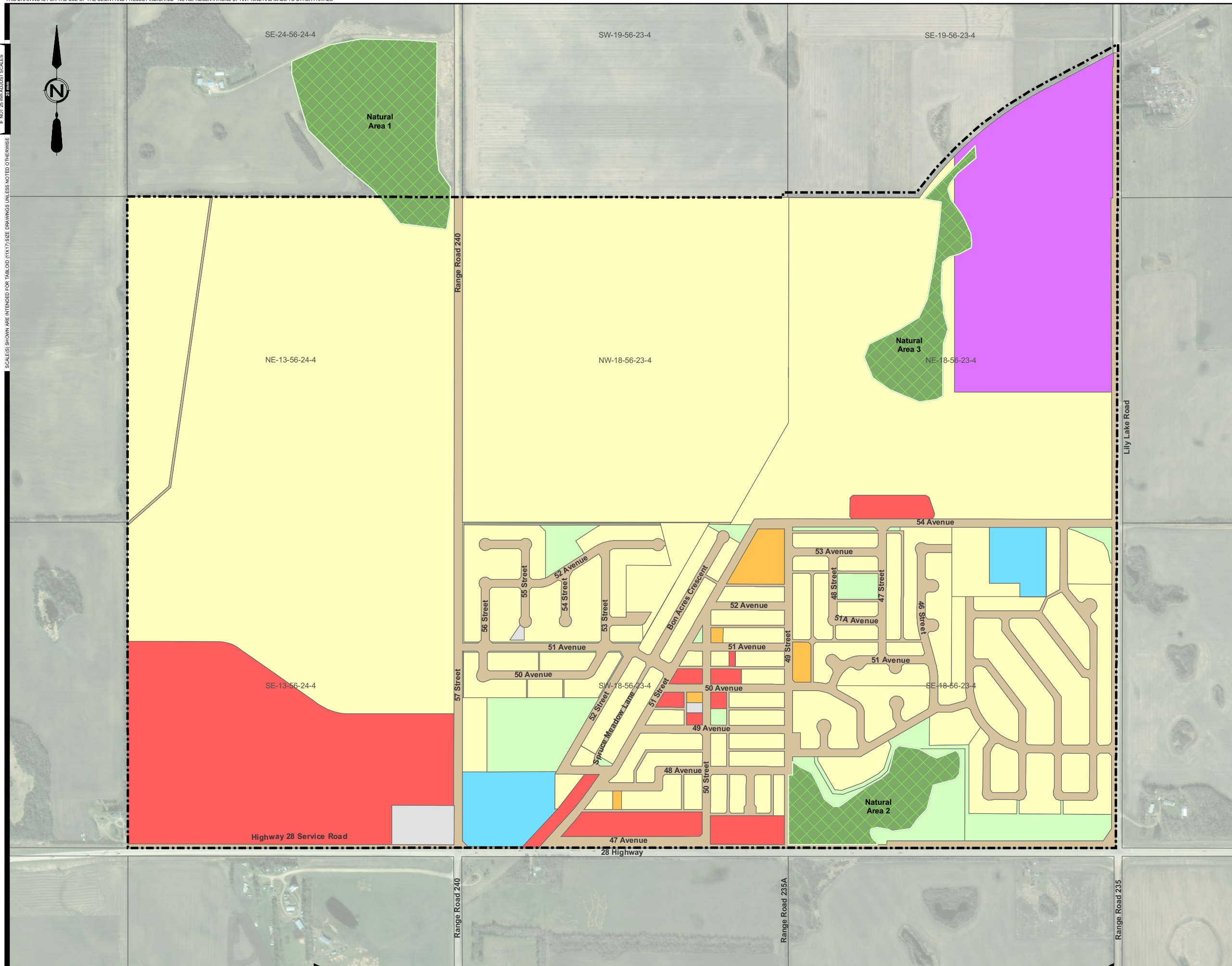
EXISTING STORMWATER SYSTEM
AREAS OF CONCERN

AE PROJECT No.	2019-3459
SCALE	1:9,000
COORD. SYSTEM	NAD 1983 3TM 114
DATE	2019 OCTOBER
REV	
DESCRIPTION	ISSUED FOR FINAL

IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TAB/CID (1:1X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

\\s-efm-fs-01\projects\2019\459\00_Master_Servicing\Working_Dwg\010_GIS\Map\StormMasterPlan\Fig 1-3_FutureLandUse_11x17.mxd
DATE: 7/5/2019



Legend:

- Low Density Residential
- Medium Density Residential
- Commercial
- Industrial
- Institutional
- Public Utility
- Park/Open Space/ER
- Roadways
- Natural Areas
- Town Boundary



FIGURE No. 1-3

TOWN OF BON ACCORD
STORM MASTER PLAN UPDATE

FUTURE LAND USE

AE PROJECT No.	2019-3459
SCALE	1:9,000
COORD. SYSTEM	NAD 1983 3TM 114
DATE	2019 OCTOBER
REV	
DESCRIPTION	ISSUED FOR FINAL

2 DESIGN CRITERIA

As part of this project, Associated Engineering completed a review of the Town's stormwater design standards. In addition, the following design standards were also reviewed:

- Alberta Environment and Parks - Stormwater Management Guidelines for the Province of Alberta;
- City of Edmonton – Design and Construction Standards;
- Municipal Engineering Standards - City of St. Albert; and,
- Sturgeon County – General Municipal Servicing Standards.

Based on the review and discussion with the Town, Associated Engineering recommended that the Town adopt the City of Edmonton Design and Construction Standards (March 2015). This recommendation was based on the following:

- The proximity of the Town to the City of Edmonton;
- Nearby communities, such as St. Albert and Sturgeon County, have design criteria similar to City of Edmonton standards;
- The City of Edmonton Standards were recently updated in 2015; and,
- The City of Edmonton is using Intensity Duration Frequency (IDF) curves developed in 2018.

A design standards memorandum was submitted to the Town and is provided in [Appendix A](#). A summary of the City of Edmonton's design standards used for this study is provided below.

2.1 Minor System

Storm drainage system elements should be designed to accommodate runoff flow rates and volumes as shown in [Table 2-1](#).

Table 2-1
Minor System Design Basis

System Elements	Design Basis (Rainfall Return Period)
Minor drainage system components servicing areas of 30 ha and less	5 years
Minor drainage system trunk sewers servicing areas greater than 30 ha	5 year runoff rate plus 25%

The Rational Method was used to estimate runoff flow rates. The rational formula is expressed as:

$$Q_5 = CIA/360$$

Where:

Q_5 = Runoff generated by a storm with a return period of 5 years (m^3/s)

C = Runoff coefficient as per City of Edmonton Zoning Bylaw 12800 (refer to [Table 2-2](#))

- I = Rainfall intensity as per the 2018 EPCOR IDF curves (mm/hr)
- A = Drainage area (ha)

Table A6, in Section 13 of the City of Edmonton Design and Construction Standards, was used to determine the time of concentration for each catchment area.

Table 2-2
Minor System Runoff Coefficients

Land Use	Minor System Runoff Coefficients
Industrial	0.60
Commercial	0.60
Public Utility	0.75
Park/Open Space/ER	0.10
Low Density Residential	0.50
Medium Density Residential	0.75
Institutional	0.30
Natural Area	0.01
Roadways	0.95

Table 2-3 presents the design criteria for other parameters used to assess the existing minor system.

Table 2-3
City of Edmonton Design and Construction Standards – Minor System

Parameter	Value
Manning’s roughness coefficient, n	0.013
Velocity	
• Minimum	0.6 m/s
• Maximum	3.0 m/s
Minimum Slopes	
• 200 mm diameter	0.40%
• 250 mm diameter	0.28%
• 300 mm diameter	0.22%
• 375 mm diameter	0.15%
• 450 mm diameter	0.12%
• 525 mm diameter and larger	0.10%
Minimum Cover	2.0 m

2.2 Major System

Similar to the minor system, the Rational Method was used to estimate runoff flows. The rational formula for storm runoff is expressed as:

$$Q_{100} = CIA/360$$

Where:

- Q₁₀₀ = Runoff generated by a storm with a return period of 100 years (m³/s)
- C = Runoff coefficient as per City of Edmonton Zoning Bylaw 12800 (refer to [Table 2-4](#))
- I = Rainfall intensity as per the 2018 IDF curves published by EPCOR (mm/hr)
- A = Drainage area (ha)

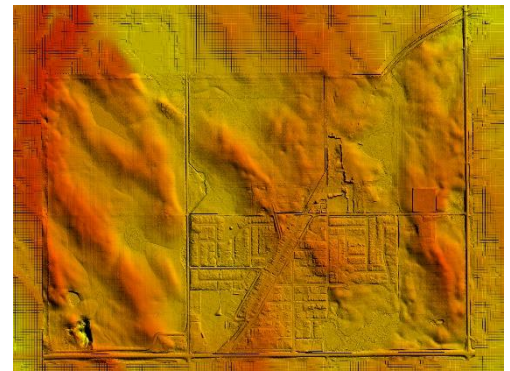
The time of concentration for each catchment area was estimated using the Kirpich equation. For small areas (i.e.: less than 1 ha), Table A6 within the City of Edmonton Design and Construction Standards was used to determine the time of concentration.

Table 2-4
Major System Runoff Coefficients

Land Use	Minor System Runoff Coefficients
Industrial	0.75
Commercial	0.75
Public Utility	0.94
Park/Open Space/ER	0.13
Low Density Residential	0.63
Medium Density Residential	0.94
Institutional	0.38
Natural Area	0.01
Roadways	0.95

3 EXISTING DRAINAGE ASSESSMENT

There are three existing natural areas located within the Town boundary. Natural Area 1 is within NE-13-56-24-4, Natural Area 2 is within SE-18-56-23-4 and Natural Area 3 is within NE-18-56-23-4. These natural areas are shown in **Figure 3-1**. Currently, these natural areas act as stormwater management facilities, as they collect and store stormwater runoff from the existing development and undeveloped lands, to the north and west of the Town, before facilitating drainage towards the Sturgeon River. To better understand the existing drainage patterns into each natural area, drainage basins (basins) were delineated using a Geographical Information System (GIS) software, a 1 m Light Detection and Ranging (LiDAR) data and 15 m LiDAR data. The detailed LiDAR (1 m) was applied within the Town lands and the course LiDAR (15 m) was applied outside of the Town boundary to capture any offsite flows. The delineation provided the general flow patterns within each basin (**Figure 3-1**).



LiDAR data (1 m and 15 m resolution)

Note that only Natural Area 3 has an outlet, which discharges north into the CNR line. This is based on discussions with the Town and the Drainage Study completed in 2005. Limited or no information on this outlet is available.

Catchment delineation results show that all three basins are greater than 65 ha. Based on the City of Edmonton Design and Construction Standards, it is recommended that for drainage areas larger than 65 ha a computer model be developed to verify estimated runoff flows. Therefore, a PCSWMM model was developed to estimate the peak runoff generated within the three basins during a 1 in 100 year 24 hour design storm event.

Table 3-1 summarizes the basins characteristics.

Table 3-1
Drainage Basin Summary

Drainage Basin	Natural Area Within Basin	Legal Location of Natural Area	Drainage Basin Area (ha)	Estimated Peak Runoff (L/s) ¹	Release Rate (L/s/ha)
1	Natural Area 1	NE-13-56-24-4	253	1,490	6
2	Natural Area 2	SE-18-56-23-4	80	1,710	21
3	Natural Area 3	NE-18-56-23-4	71	680	10

1 - Estimated using PCSWMM

Table 3-1 shows that there is variation in flows within the basins. This is due to the different types of land uses within each basin. Based on the existing development within Basin 2, it has the largest estimated peak runoff due to less infiltration into the ground. In addition, flows are not currently controlled within this basin and are discharging into Natural Area 2. Basin assessment showed that Basin 1 is the most representative of pre-development flows because it consists of mainly undeveloped land. Therefore, it is recommended that all future development be controlled to a release rate of 6 L/s/ha into the Natural Areas.

\\s-edm-fs-01\projects\20193459\00_Master_Servicing\Engineering\03.00_Conceptual_Feasibility_Design_Master_Plans\Stormwater\Report\vpf_Stormwater_Master_Plan_Final_20191008.docx

As previously stated, the basins convey stormwater runoff through the storm pipes, ditches and culverts. The catchment areas for the minor and major systems were delineated using the LiDAR data. The Rational Method was used to estimate the flows discharging into the systems. In addition, the existing capacities were also determined.

Figure 3-2 presents the existing stormwater system (minor and major). Figure B-1 in Appendix B presents the LiDAR boundaries and delineated catchment areas contributing into the various systems.

3.1 Minor System Assessment

The Town’s minor system is located along 50 Street between 47th Avenue and 52nd Avenue (Figure 3-2). The minor system was evaluated using the design criteria outlined in Section 2.1, the existing land use plan and the following:

- Contributing catchment areas were delineated to storm manholes;
- Design flows were applied to the upstream manholes;
- Weighted runoff coefficients were applied to each contributing catchment area;
- The following data was obtained from the Town’s GIS database:
 - Pipe material, size and length
 - Manhole ID’s
 - Manhole invert and rim elevations
- The slope of the storm pipes was calculated using the available invert elevations and pipe lengths; and,
- Manholes labelled with “AE” in their ID were used to represent potential missing data.

Note, some information pertinent to the existing stormwater system was not available within the Town’s GIS database. In addition, the available as-built information was not sufficient to supplement the missing information. Therefore, assumptions were made based on standard engineering practices and information from the Drainage Study completed in 2005.

Table 3-2 summarizes the existing minor system assessment.

**Table 3-2
Existing Minor System Assessment**

Upstream Manhole	Downstream Manhole	Design Flow (m ³ /s)	Pipe Diameter (mm)	Pipe Slope (%)	Sufficient Capacity?	Sufficient Cover?
S703A	ST703	0.555	525	0.03	No	Yes
ST715	ST714	0.127	200	1.04	No	Yes
ST714	ST713	0.128	200	0.29	No	Yes
ST713	ST712	0.130	200	0.50	No	No
ST712A	ST712	0.019	200	1.13	Yes	No
ST712	ST710	0.161	750	0.63	Yes	No
ST711	ST710	0.317	200	0.04	No	No
ST710	ST709	0.494	750	0.08	No	Yes
ST709A	ST709	0.058	300	0.36	Yes	Yes
ST709	ST705	0.569	750	0.33	Yes	No

Upstream Manhole	Downstream Manhole	Design Flow (m ³ /s)	Pipe Diameter (mm)	Pipe Slope (%)	Sufficient Capacity?	Sufficient Cover?
ST708	ST707	0.125	375	0.18	No	No
ST707	ST706	0.126	375	0.35	No	No
ST706	ST705	0.223	375	0.30	No	No
ST705	ST705A	0.793	750	0.37	No	No
AE_1	ST705C	0.087	300	0.50	No	No
ST705C	ST705B	0.087	300	0.50	No	No
ST705B	ST705A	0.093	300	0.67	No	No
ST705A	ST704_AE	0.888	750	0.23	No	No
AE_2	ST704	0.033	300	0.31	Yes	No
ST704	ST704A	0.033	300	0.31	Yes	No
ST704A	ST704_AE	0.134	375	0.31	No	No
ST704_AE	ST703	1.791	750	0.26	No	No
ST703	ST702	2.348	900	0.03	No	No
ST702	ST701	2.452	900	0.23	No	No
ST701	Natural Area 2	2.459	900	0.23	No	No

Results show that there are several storm pipes that do not have the capacity to convey flows generated during a 1 in 5 year design storm event. In addition, results indicate that there are several storm pipes that do not have adequate cover.

Figure 3-3 illustrates the storm pipes that have sufficient capacity, as well as pipes that do not. In addition, this figure shows storm pipes that do not have adequate cover. Detailed calculations are provided in Appendix C.

3.1.1 Proposed Upgrades to Minor System

Based on the above results, upgrades were proposed to the existing minor system to ensure that the storm pipe network conveys flows generated during the 1 in 5 year design storm event. Table 3-3 summarizes the estimated design flows, existing pipe slopes and proposed upgrades. The proposed upgrades are shown in Figure 3-4. Detailed calculations for the proposed upgrades are provided in Appendix D.

Table 3-3
Proposed Upgrades to Existing Minor System

Upstream Manhole	Downstream Manhole	Design Flow (m ³ /s)	Slope (%)	Proposed Storm Pipe Diameter (mm) ¹
S703A	ST703	0.555	0.03	1200
ST715	ST714	0.127	1.04	375
ST714	ST713	0.128	0.29	450
ST713	ST712	0.130	0.50	450
ST711	ST710	0.317	0.04	900
ST710	ST709	0.494	0.08	900

Upstream Manhole	Downstream Manhole	Design Flow (m ³ /s)	Slope (%)	Proposed Storm Pipe Diameter (mm) ¹
ST708	ST707	0.125	0.18	525
ST707	ST706	0.126	0.35	450
ST706	ST705	0.223	0.30	525
ST705	ST705A	0.793	0.37	900
AE_1	ST705C	0.087	0.50	375
ST705C	ST705B	0.087	0.50	375
ST705B	ST705A	0.093	0.67	375
ST705A	ST704_AE	0.888	0.23	1050
ST704A	ST704_AE	0.134	0.31	450
ST704_AE	ST703	1.791	0.26	1200
ST703	ST702	2.348	0.03	1950
ST702	ST701	2.452	0.23	1350
ST701	Natural Area 2	2.46	0.23	1350

¹ Nominal diameter.

In addition to the proposed upgrades provided above, the following are recommended:

- Pipe insulation should meet minimum cover requirements. To ensure frost heave does not occur, insulation is recommended to be placed below the frost line;
- Ensure that all storm pipes meet the minimum grade requirements. Re-grading may be required to meet velocity requirements. Existing storm pipes that do not meet the slope design standard requirements are identified in red text in **Appendix C**; and,
- Develop a maintenance plan for the storm pipe network, including but not limited to:
 - Regular cleaning of manholes; and,
 - Inspection of manhole and pipe conditions.

It is recommended that the Town complete a detailed assessment of the storm pipe network through topographical survey and CCTV to verify the analysis and proposed upgrades.

3.2 Major System Assessment

As previously stated, the Town has a major system, comprised of culverts and ditches (**Figure 3-2**). The ditches illustrated in **Figure 3-2** convey most of the stormwater runoff, as they are located along the main roadways. Residential ditches, located in front of resident’s homes, are not shown. The major system was evaluated based the design criteria outlined in **Section 2.2**, the existing land use map and the following:

- Catchment areas were delineated to the upstream and downstream of each culvert;
- The following data was extracted from the Town’s geographical information system (GIS):
 - Culvert length and diameter
 - Length of ditch

- The LiDAR surface was used to estimate the slope of the ditches, which was applied to the culverts along each segment;
- Weighted runoff coefficients were applied to each contributing catchment area;
- Culverts were assessed based on their full-flow capacity; and,
- Culvert crossings at local roadways were not assessed.

Limited or no information pertinent to the existing stormwater system was available within the Town's GIS database. Therefore, various assumptions were made based on standard engineering practices and information from the Drainage Study completed in 2005. In addition, the ditch networks were not assessed due to no information available.

Table 3-4 summarizes the existing major system assessment.

Table 3-4
Existing Major System Assessment

Culvert ID	Design Flow (m ³ /s)	Existing Culvert Diameter (mm)	Full Flow Capacity (m ³ /s)	Sufficient Capacity?
Culvert 24	0.01	600	0.05	Yes
Culvert 14	1.25	600	0.23	No
Culvert 13	3.36	700	0.35	No
Culvert 12	4.22	600	0.23	No
Culvert 10	2.27	700	0.20	No
Culvert 11	2.27	700	0.20	No
Culvert 15	0.27	500	0.23	No
Culvert 4	0.86	500	0.23	No
Culvert 2	1.03	400	0.13	No
Culvert 1	4.29	500	0.23	No
Culvert 35	4.49	500	0.23	No
Culvert 6	0.30	600	0.17	No
Culvert 5	0.45	400	0.06	No
Culvert 3	0.52	400	0.06	No
Culvert 36	0.93	400	0.06	No
Culvert 33	1.28	600	0.20	No
Culvert 8	0.01	500	0.20	Yes
Culvert 30	0.24	300	0.05	No
Culvert 7	2.38	300	0.05	No
Culvert 20	0.88	400	0.16	No
Culvert 19	0.88	400	0.16	No
Culvert 26	0.29	600	0.53	Yes
Culvert 21	0.29	600	0.53	Yes
Culvert 16	2.92	600	0.40	No
Culvert 18	0.03	400	0.13	Yes
Culvert 31	0.04	400	0.13	Yes

Culvert ID	Design Flow (m ³ /s)	Existing Culvert Diameter (mm)	Full Flow Capacity (m ³ /s)	Sufficient Capacity?
Culvert 32	0.16	400	0.13	No

Figure 3-5 presents the culverts that have sufficient capacity, as well as culverts that do not. The results show that the majority of the culverts do not have the capacity to convey the estimated design flow generated during a 1 in 100 year design storm event. Detailed calculations are provided in Appendix E.

Identified ponding areas (Figure 1-2) validates the major system assessment results.

3.2.1 Proposed Upgrades to Major System

The estimated design flows, proposed culvert diameters and full-flow capacities are summarized in Table 3-5. Note that diameters flagged with an asterisk (*) are existing diameters that have capacity and do not need to be upgraded.

**Table 3-5
Proposed Upgrades to Existing Major System**

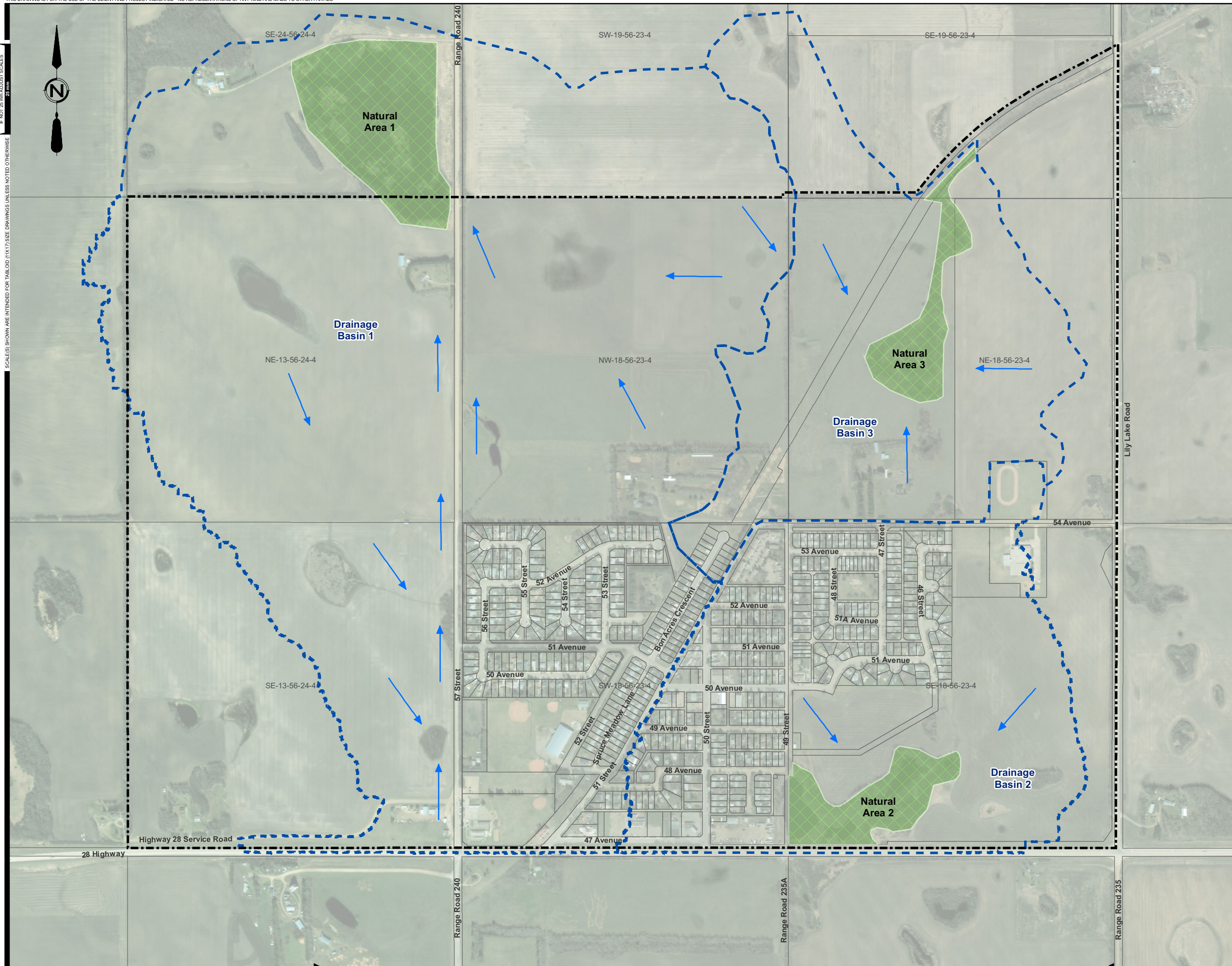
Culvert ID	Design Flow (m ³ /s)	Proposed Size (mm)	Full Flow Capacity (m ³ /s)
Culvert 24	0.01	600*	0.05
Culvert 14	1.25	1200	1.48
Culvert 13	3.36	1650	3.46
Culvert 12	4.22	1800	4.36
Culvert 10	2.27	1800	2.27
Culvert 11	2.27	1800	2.27
Culvert 15	0.27	600	0.37
Culvert 4	0.86	900	1.09
Culvert 2	1.03	900	1.09
Culvert 1	4.29	1650	5.50
Culvert 35	4.49	1650	5.50
Culvert 6	0.30	750	0.31
Culvert 5	0.45	900	0.50
Culvert 3	0.52	1050	0.76
Culvert 36	0.93	1200	1.09
Culvert 33	1.28	1350	1.73
Culvert 8	0.01	500*	0.20
Culvert 30	0.24	600	0.31
Culvert 7	2.38	1350	2.65
Culvert 20	0.88	900	1.36
Culvert 19	0.88	900	1.36
Culvert 26	0.29	600*	0.53

Culvert ID	Design Flow (m ³ /s)	Proposed Size (mm)	Full Flow Capacity (m ³ /s)
Culvert 21	0.29	600*	0.53
Culvert 16	2.92	1350	3.49
Culvert 18	0.03	400*	0.13
Culvert 31	0.04	400*	0.13
Culvert 32	0.16	450	0.17

The locations of the proposed culvert upgrades are presented in [Figure 3-6](#). In addition to the proposed upgrades provided above, the following are recommended:

- Ditches are to have a width equal to the diameter of the upstream culvert;
- Adequate grading is to be provided within the ditches. A minimum value of 0.5% is recommended; and,
- Develop a maintenance plan for the ditch network, including but not limited to:
 - Cutting grass and vegetation within the ditches;
 - Maintenance of the ditch profile to ensure adequate grade; and,
 - Inspection for accumulation of sediment and other debris.

It is recommended that the Town complete a detailed topographic survey of ditches and culverts to verify the analysis and proposed upgrades.







- Legend:
-  Drainage Direction
 -  Drainage Basins
 -  Natural Areas
 -  Town Boundary



FIGURE No. 3-1
TOWN OF BON ACCORD
STORM MASTER PLAN UPDATE
MAJOR DRAINAGE BASINS

AE PROJECT No.	2019-3459
SCALE	1:9,000
COORD. SYSTEM	NAD 1983 3TM 114
DATE	2019 OCTOBER
REV	
DESCRIPTION	ISSUED FOR FINAL

SCALE(S) SHOWN ARE INTENDED FOR TAB/CID (1:1X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE
 IF NOT 25 mm ADJUST SCALES
 25 mm



- Legend:**
- Storm Manhole
 - ▶▶▶▶ Drainage Ditch
 - Natural Areas
 - Town Boundary
- Culvert**
- Existing 300 mmØ
 - Existing 400 mmØ
 - Existing 500 mmØ
 - Existing 600 mmØ
 - Existing 700 mmØ
 - Existing 800 mmØ
- Storm Pipe**
- ▶ Existing 150 mmØ
 - ▶ Existing 200 mmØ
 - ▶ Existing 300 mmØ
 - ▶ Existing 375 mmØ
 - ▶ Existing 525 mmØ
 - ▶ Existing 750 mmØ
 - ▶ Existing 900 mmØ

*Existing stormwater infrastructure that was not assessed is not shown



FIGURE No. 3-2
 TOWN OF BON ACCORD
 STORM MASTER PLAN UPDATE
 EXISTING STORMWATER SYSTEM

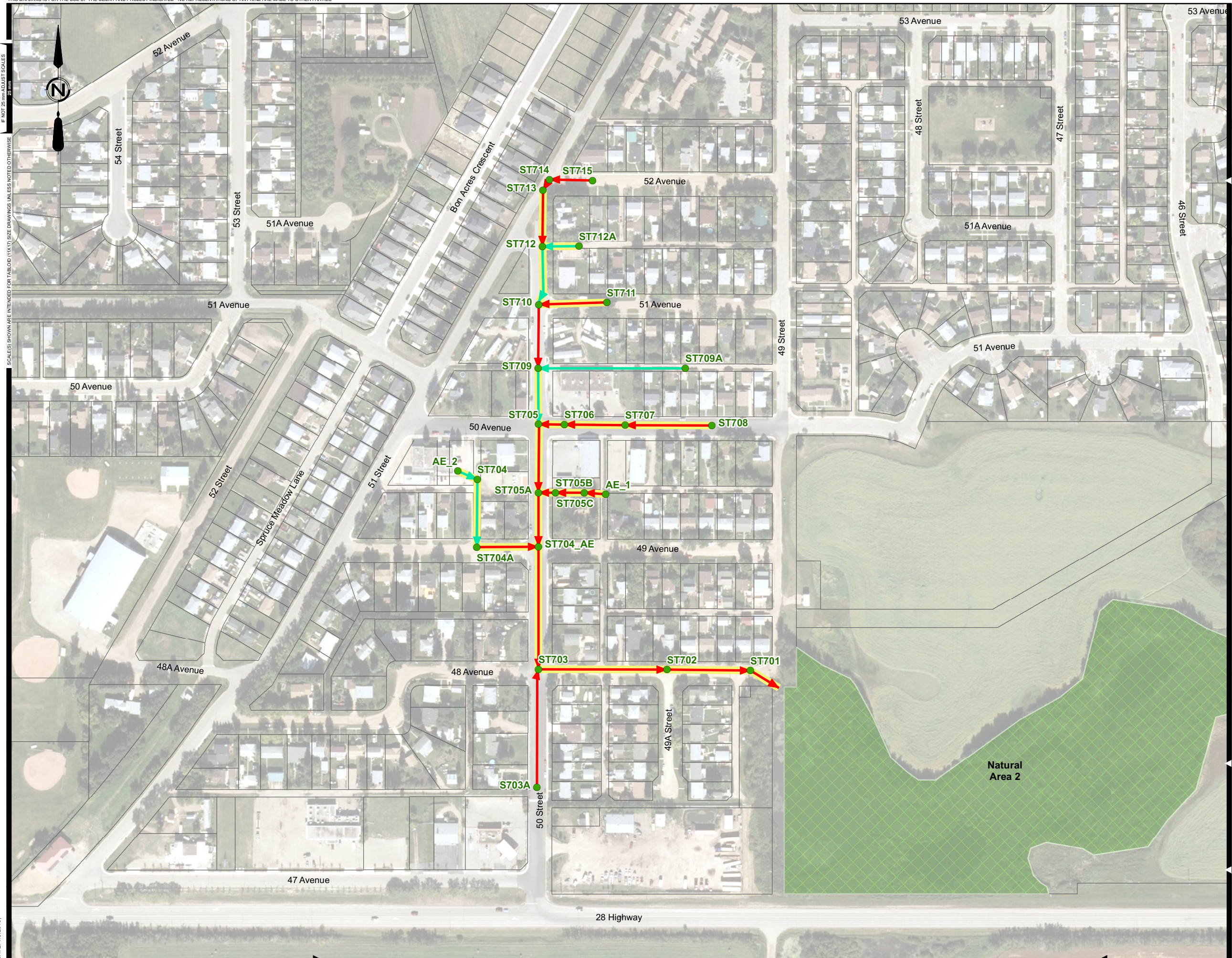
AE PROJECT No.	2019-3459
SCALE	1:5,000
COORD. SYSTEM	NAD 1983 3TM 114
DATE	2019 OCTOBER
REV	
DESCRIPTION	ISSUED FOR FINAL

\\s-efm-fs-01\projects\2019\3459\00_Master_Servicing\Working_Dwg\010_GIS\Map\StormMasterPlan\Figs-2_ExistingStormwaterSystem_11x17.mxd
 DATE: 7/5/2019

IF NOT 25 mm ASBEST SCALAS

SCALE(S) SHOWN ARE INTENDED FOR TABLAD (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

\\s-edm-fs-01\projects\2019\245900_Master_Servicing\Working_Dwg\010_GIS\A\Map\StormMasterPlan\Fig-3_ExistingMinorSystemAssesment_11x17.mxd
DATE: 7/6/2019



- Legend:
- Storm Manhole
 - Storm Pipe - Sufficient Capacity
 - Storm Pipe - Insufficient Capacity
 - Storm Pipe - Insufficient Cover
 - Natural Area



FIGURE No. 3-3
TOWN OF BON ACCORD
STORM MASTER PLAN UPDATE
EXISTING MINOR SYSTEM ASSESSMENT

AE PROJECT No.	2019-3459
SCALE	1:3,000
COORD. SYSTEM	NAD 1983 3TM 114
DATE	2019 OCTOBER
REV	
DESCRIPTION	ISSUED FOR FINAL



- Legend:**
- Storm Manhole
 - ▨ Natural Area
 - Storm Pipe
- Proposed Storm Pipe Upgrades**
- Proposed 375 mmØ
 - Proposed 450 mmØ
 - Proposed 525 mmØ
 - Proposed 900 mmØ
 - Proposed 1050 mmØ
 - Proposed 1200 mmØ
 - Proposed 1350 mmØ
 - Proposed 1950 mmØ



FIGURE No. 3-4

TOWN OF BON ACCORD
STORM MASTER PLAN UPDATE

PROPOSED EXISTING MINOR SYSTEM
UPGRADES

AE PROJECT No.	2019-3459
SCALE	1:3,000
COORD. SYSTEM	NAD 1983 3TM 114
DATE	2019 OCTOBER
REV	
DESCRIPTION	ISSUED FOR FINAL

IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TAB/CID (1:1X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

\\s-edm-fs-01\projects\2019\459\00_Master_Servicing\Working_Dwg\010_GIS\ActMap\StormMasterPlan\Figs-7_ExistingMajorSystemAssessment_11x17.mxd
DATE: 7/5/2019



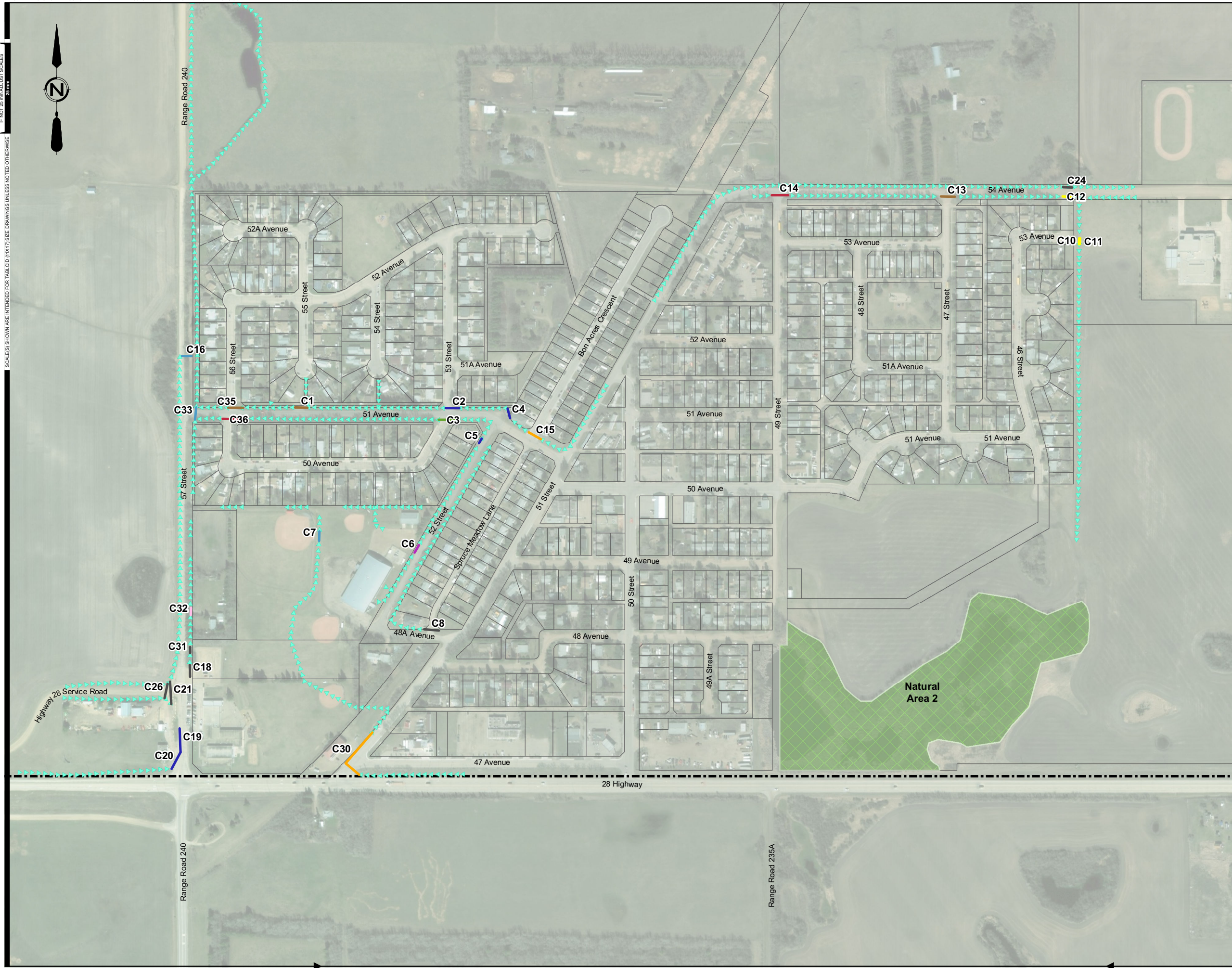
Legend:

- Culvert - Sufficient Capacity
- Culvert - Insufficient Capacity
- - - - Drainage Ditch
- Natural Areas
- Town Boundary



FIGURE No. 3-5
TOWN OF BON ACCORD
STORM MASTER PLAN UPDATE
EXISTING MAJOR SYSTEM ASSESSMENT

AE PROJECT No.	2019-3459
SCALE	1:5,000
COORD. SYSTEM	NAD 1983 3TM 114
DATE	2019 OCTOBER
REV	
DESCRIPTION	ISSUED FOR FINAL



Legend:

- Existing Culvert
- Drainage Ditch
- Natural Areas
- Town Boundary

Proposed Culvert Upgrades

- Proposed 450 mmØ
- Proposed 600 mmØ
- Proposed 750 mmØ
- Proposed 900 mmØ
- Proposed 1050 mmØ
- Proposed 1200 mmØ
- Proposed 1350 mmØ
- Proposed 1650 mmØ
- Proposed 1800 mmØ



FIGURE No. 3-6

TOWN OF BON ACCORD
STORM MASTER PLAN UPDATE

PROPOSED EXISTING MAJOR SYSTEM
UPGRADES

AE PROJECT No.	2019-3459
SCALE	1:5,000
COORD. SYSTEM	NAD 1983 3TM 114
DATE	2019 OCTOBER
REV	
DESCRIPTION	ISSUED FOR FINAL

4 FUTURE STORMWATER MANAGEMENT PLAN

Future development is proposed within the west and north parts of the Town, in addition to the following locations:

- North of 54th Avenue (NE-18-56-23-W4); and,
- Within the undeveloped portion in SE-18-56-23-W4.

Based on the future land use concept (**Figure 1-3**), the development within these areas consists of low density residential, commercial and industrial land uses.

4.1 Minor System

Based on the future land use concept, no flows from future developments will discharge into the existing minor system. All future development minor systems should be designed separately from the existing system. Based on the details required to develop a stormwater management plan within the future development, the minor systems were not investigated.

4.2 Major System

The major system was evaluated based the design criteria outlined in **Section 2.2** and the future land use map. As previously stated, the ditches were not assessed due to no available information.

Based on the details required to develop a stormwater management plan within the future development, the required ditches were not investigated.

4.2.1 Culvert Assessment

Culverts within the upgraded major system were assessed based on flows generated from future developments contributing into the existing systems. **Table 4-1** summarizes the major system assessment.

**Table 4-1
Future Major System Assessment**

Culvert ID	Design Flow (m ³ /s)	Culvert Diameter (mm) ¹	Full Flow Capacity (m ³ /s)	Sufficient Capacity?
Culvert 24	0.01	600	0.05	Yes
Culvert 14	1.25	1200	1.48	Yes
Culvert 13	3.36	1650	3.46	Yes
Culvert 12	4.22	1800	4.36	Yes
Culvert 10	2.35	1800	2.47	Yes
Culvert 11	2.35	1800	2.47	Yes
Culvert 15	0.27	600	0.37	Yes
Culvert 4	0.86	900	1.09	Yes
Culvert 2	1.03	900	1.09	Yes

\\s-edm-fs-01\projects\20193459\00_Master_Servicing\Engineering\03_00_Conceptual_Feasibility_Design_Master_Plans\Stormwater\Report\ rpt_Stormwater_Master_Plan_Final_20191008.docx

Culvert ID	Design Flow (m³/s)	Culvert Diameter (mm) ¹	Full Flow Capacity (m³/s)	Sufficient Capacity?
Culvert 1	4.29	1650	5.5	Yes
Culvert 35	4.49	1650	5.5	Yes
Culvert 6	0.30	750	0.31	Yes
Culvert 5	0.45	900	0.5	Yes
Culvert 3	0.52	1050	0.76	Yes
Culvert 36	0.93	1200	1.09	Yes
Culvert 33	1.28	1350	1.73	Yes
Culvert 8	0.01	500	0.20	Yes
Culvert 30	0.24	600	0.31	Yes
Culvert 7	2.38	1350	2.65	Yes
Culvert 20	1.21	900	1.36	Yes
Culvert 19	1.21	900	1.36	Yes
Culvert 26	0.29	600	0.53	Yes
Culvert 21	0.29	600	0.53	Yes
Culvert 16	11.07	1350	0.40	No
Culvert 18	0.03	400	0.13	Yes
Culvert 31	0.04	400	0.13	Yes
Culvert 32	0.16	450	0.17	Yes

¹ Culvert diameter based on proposed upgrades from the existing minor system assessment.

Figure 4-1 presents the culverts that have sufficient capacity, as well as culverts that do not. Results show that all upgraded culverts within the existing system have capacity, except for Culvert 16 due to additional flows generated from future developments. Table 4-2 summarizes the proposed upgrade for Culvert 16.

**Table 4-2
Proposed Upgrades to Future Major System**

Culvert ID	Location	Design Flow (m³/s)	Proposed Culvert Diameter (mm)	Full Flow Capacity (m³/s)
Culvert 16	57th Street north of 51st Avenue	11.1	1500 (x 3)	4.62

The location of Culvert 16 is shown in Figure 4-2. If the Town undertakes the existing major system upgrades (outlined in Section 3.2.1), it is advantageous to upgrade Culvert 16 for the ultimate development. Note that Culvert 16 currently collects flows generated from the undeveloped lands to the west and north of the Town. It is anticipated that as development occurs within these areas, stormwater management practices will be implemented. Therefore,

post-development surface water runoff into Culvert 16 is anticipated to be lower. It is recommended that the Town complete a detailed topographic survey of the ditches and culverts to verify the analysis, if required.

Detailed calculations are provided in [Appendix F](#).

4.2.2 Stormwater Management Facilities

The entire future development will require an on-site minor and major stormwater system. The City of Edmonton's stated goal for stormwater management is "to provide drainage for urban areas that preserves and promotes the general health, welfare, security and economic wellbeing of the public and to protect and enhance the water quality of receiving watercourses". Therefore, to mitigate any impacts on the drainage systems within the area, due to the proposed development, the Town requires stormwater management facilities. The stormwater management facilities will allow system discharge rates to be controlled to the recommended release rate of 6 L/s/ha.

The City of Edmonton Design and Construction Standards state that a minimum drainage area of 5 ha is required to generate constant or periodic flow to a stormwater management facility, however, the smallest practical drainage area is 20 ha. Defining a minimum drainage area achieves the following:

- Maintaining the sustainability of the infrastructure;
- Providing constant or periodic flows into the facility; and,
- Preventing stagnant and long periods of dry conditions.

The stormwater management concept for the Town, for future development, consists of 9 stormwater management facilities. The proposed stormwater management facilities were placed in the existing low-lying areas, in consideration with the proposed future transportation plan (see Transportation Master Plan report) and on a minimum drainage area of 20 ha. Re-grading of the existing topography in some locations may be required, to ensure overland flows are conveyed into the facilities. These facilities are proposed to provide storage for storm events with design storm events of up to 100 years. It is recommended that all stormwater management facilities be constructed as per the City of Edmonton Design and Construction Standards.

[Figure 4-3](#) presents the proposed stormwater management facility locations, their catchment areas and proposed drainage paths. The type of flow conveyance will be determined during the next phases of development.

The characteristics of the stormwater management facilities were determined using the Rational Method and the City of Edmonton 2018 IDF curve. [Table 4-3](#) summarizes the estimated catchment area, the volume and the proposed receiving waterbody for each facility.

Table 4-3
Proposed Stormwater Management Facility Characteristics

Stormwater Management Facility ID	Contributing Area (ha)	Estimated Storage Volume (m ³)	Proposed Receiving Waterbody ¹
SWMF 1	36	26,670	Unnamed Tributary in SW-13-56-24-4
SWMF 2	61	38,610	Natural Area 1
SWMF 3	33	19,880	Natural Area 1

Stormwater Management Facility ID	Contributing Area (ha)	Estimated Storage Volume (m ³)	Proposed Receiving Waterbody ¹
SWMF 4	25	15,060	Natural Area 1
SWMF 5	39	23,580	Natural Area 1
SWMF 6	16	9,270	Natural Area 3
SWMF 7	19	11,210	Natural Area 3
SWMF 8	40	26,580	Natural Area 3
SWMF 9	34	22,970	Unnamed Tributary in SW-17-56-23-4

¹ Tributary data - *Base Stream and Flow Representation. Acquired from Altalis Ltd. (1996)*

All proposed receiving waterbodies ultimately discharge into the Sturgeon River. Therefore, an environmental regulatory overview is required.

The final facility locations and sizes should be confirmed during the next stages of development. In addition, “leap-frogging” of development should be discouraged and sequential development should be encouraged.

4.2.3 Natural Areas

There are three natural areas located within the Town boundary. These natural areas act as stormwater management facilities before facilitating drainage towards the Sturgeon River. Majority of runoff flows generated within the existing development currently discharge into Natural Area 2. These flows are causing localized flooding within the adjacent residential areas. Therefore, no additional flows generated from the future development are proposed to be discharged into Natural Area 2.

As noted, only Natural Area 3 has an outlet to regulate flows. Therefore, improvements are required to mitigate existing issues in Natural Area 2 and to ensure Natural Area 1 does not have negative impacts on future development and the downstream system. It is proposed that control structures at each natural area are constructed to discharge flows at 6 L/s/ha. All natural areas should be assessed to ensure they can accommodate runoff flows. This will be achieved by establishing a design normal water level, based on the property line and the minimum freeboard.

All proposed improvements will require an environmental regulatory overview. The following sections outline the proposed improvements for each natural area.

4.2.3.1 Natural Area 1

Runoff from Basin 1 is conveyed into Natural Area 1 by overland flow and a ditch along 57th Street. Currently, there is no development surrounding Natural Area 1, however, residential development is proposed for the future. Flows from the future development will be controlled via stormwater management facilities at a discharge rate of 6 L/s/ha. It is recommended to construct an outlet for Natural Area 1 to ensure negative impacts on the development and the downstream system are mitigated.

Two drainage course options can be considered from the outlet of Natural Area 1:

1. Convey flows from Natural Area 1 to Natural Area 3 using a ditch system, where Natural Area 3 outlets north to the CNR line. This option is contingent on Natural Area 3 having adequate capacity to accommodate additional flows discharging from Natural Area 1. A detailed assessment is recommended to be undertaken to confirm this.
2. Flows from Natural Area 1 are discharged into an unnamed tributary, within NW-20-56-23-4, that ultimately conveys flows into the Sturgeon River.

4.2.3.2 Natural Area 2

Natural Area 2 receives runoff from the current development through the existing minor and major systems. Surrounding areas adjacent to Natural Area 2 have experienced flooding. To mitigate the existing flooding and drainage issues, the following are options are available:

1. Lower the existing 800 mm diameter culvert at the south end of Natural Area 2 to establish a normal water level (NWL) based on the existing property line. This culvert conveys flows to the south across Highway 28 where it discharges into a ditch system. This ditch system runs east-west along Highway 28 and north-south along Lily Lake Road. Flows within the system ultimately discharges into the Surgeon River. Note that discussions with Alberta Transportation will need to be undertaken to alter the existing culvert crossing Highway 28.
2. Purchase and dispose of the adjacent homes within the existing impacted area, or flood zone. A detailed analysis, using a computer model, is recommended to define the flood zone.
3. Expand the existing Natural Area 2 to accommodate existing and future development flows without any negative impacts.



*Localized Flooding from Natural Area 2
(March 2019)*

4.2.3.3 Natural Area 3






Based on the future land use plan, industrial and low density residential developments are proposed to be adjacent to Natural Area 3. It is recommended that the existing outlet be assessed to ensure flows are released at the controlled rate of 6 L/s/ha. In addition, it should be confirmed that Natural Area 3 can accommodate runoff flows from surrounding developments.

4.3 Snow Management

The Town has observed excessive surface water ponding, in some areas, during spring snowmelt. This is due to limited snow management. In addition, the snowmelt runoff could be contaminated with deleterious substances collected during maintenance of the roadways throughout the winter (sand or salt). These contaminants ultimately make their way into the Sturgeon River (downstream water body). To mitigate any impacts caused by snowmelt during spring within the existing and future development, the Town should consider developing a snow management program in addition to the construction of a snow management facility. The snow management program would involve the creation of a maintenance and operation program for hauling and disposing of their snow.



Legend:

-  Culvert - Sufficient Capacity
-  Culvert - Insufficient Capacity
-  Drainage Ditch
-  Natural Areas
-  Town Boundary

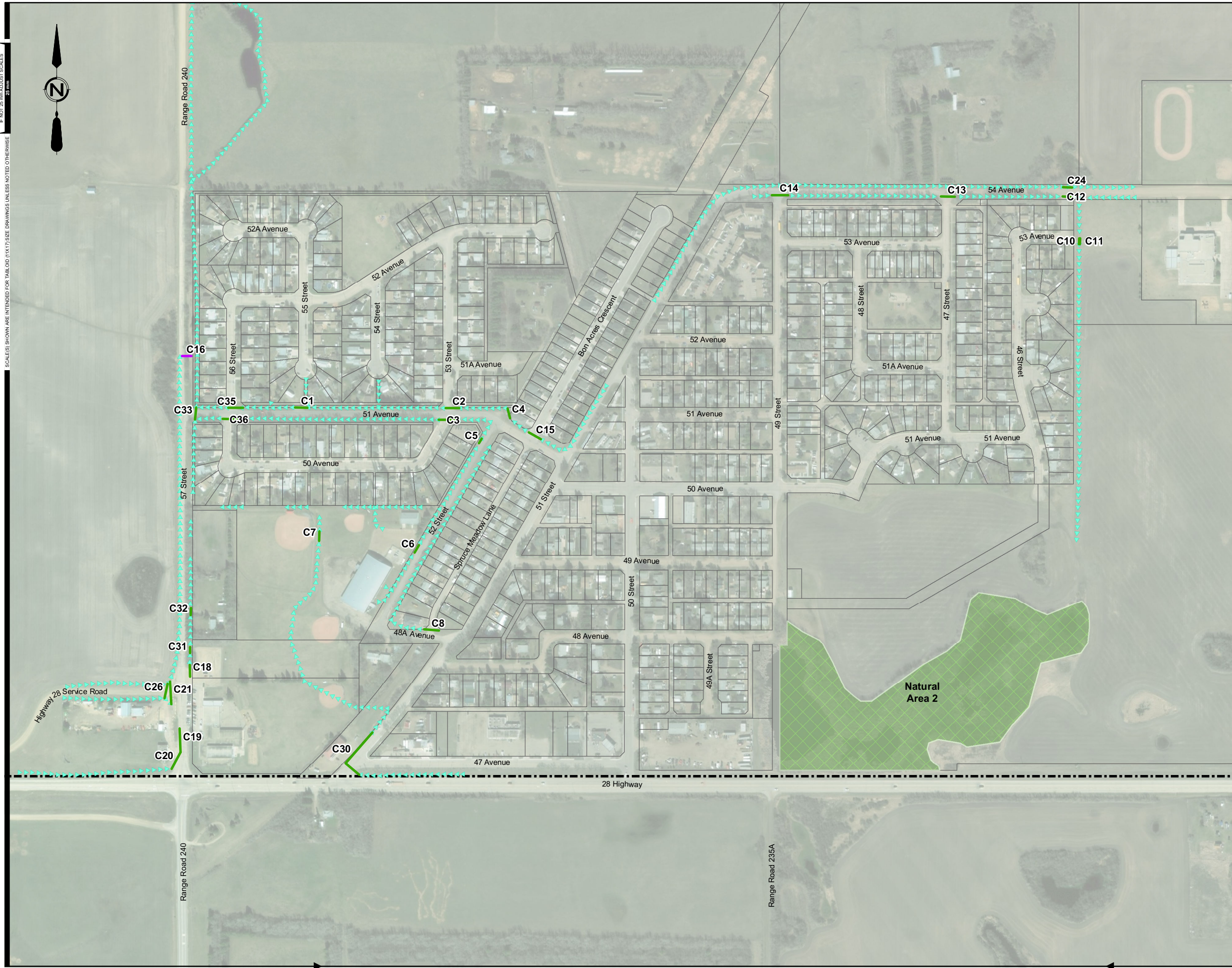


FIGURE No. 4-1

TOWN OF BON ACCORD
STORM MASTER PLAN UPDATE

FUTURE MAJOR SYSTEM ASSESSMENT

AE PROJECT No.	2019-3459
SCALE	1:5,000
COORD. SYSTEM	NAD 1983 3TM 114
DATE	2019 OCTOBER
REV	
DESCRIPTION	ISSUED FOR FINAL



Legend:

- Existing Culvert
- Drainage Ditch
- Natural Areas
- Town Boundary
- Proposed Future Culvert Upgrades**
- Proposed Three 1500 mmø Culverts

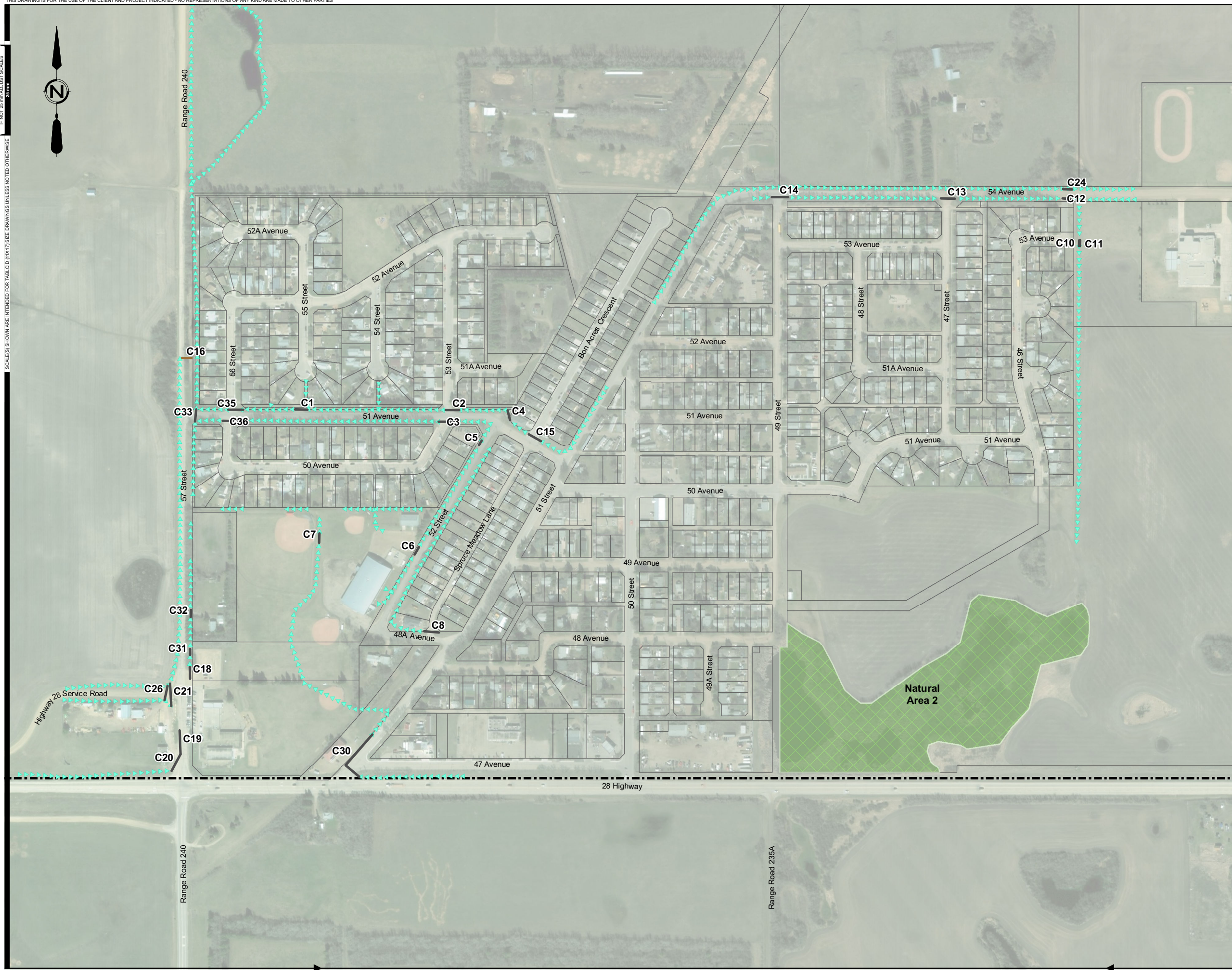


FIGURE No. 4-2
TOWN OF BON ACCORD
STORM MASTER PLAN UPDATE
PROPOSED FUTURE MAJOR SYSTEM UPGRADES

AE PROJECT No.	2019-3459
SCALE	1:5,000
COORD. SYSTEM	NAD 1983 3TM 114
DATE	2019 OCTOBER
REV	
DESCRIPTION	ISSUED FOR FINAL







IF NOT 25 mm AS SHOWN SCALES

SCALE(S) SHOWN ARE INTENDED FOR TABL/CID (1:1X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

\\s-efm-fs-01\projects\2019\459\00_Master_Servicing\Working_Dwg\010_GIS\ActMap\StormMasterPlan\Fig+3_ProposedStormwaterManagementFacilities_11x17.mxd
DATE: 7/11/2019



Legend:

-  Proposed SWMF Locations
-  Drainage Directions
-  Tributary
-  Contours (0.5m Interval)
-  Natural
-  Town Boundary

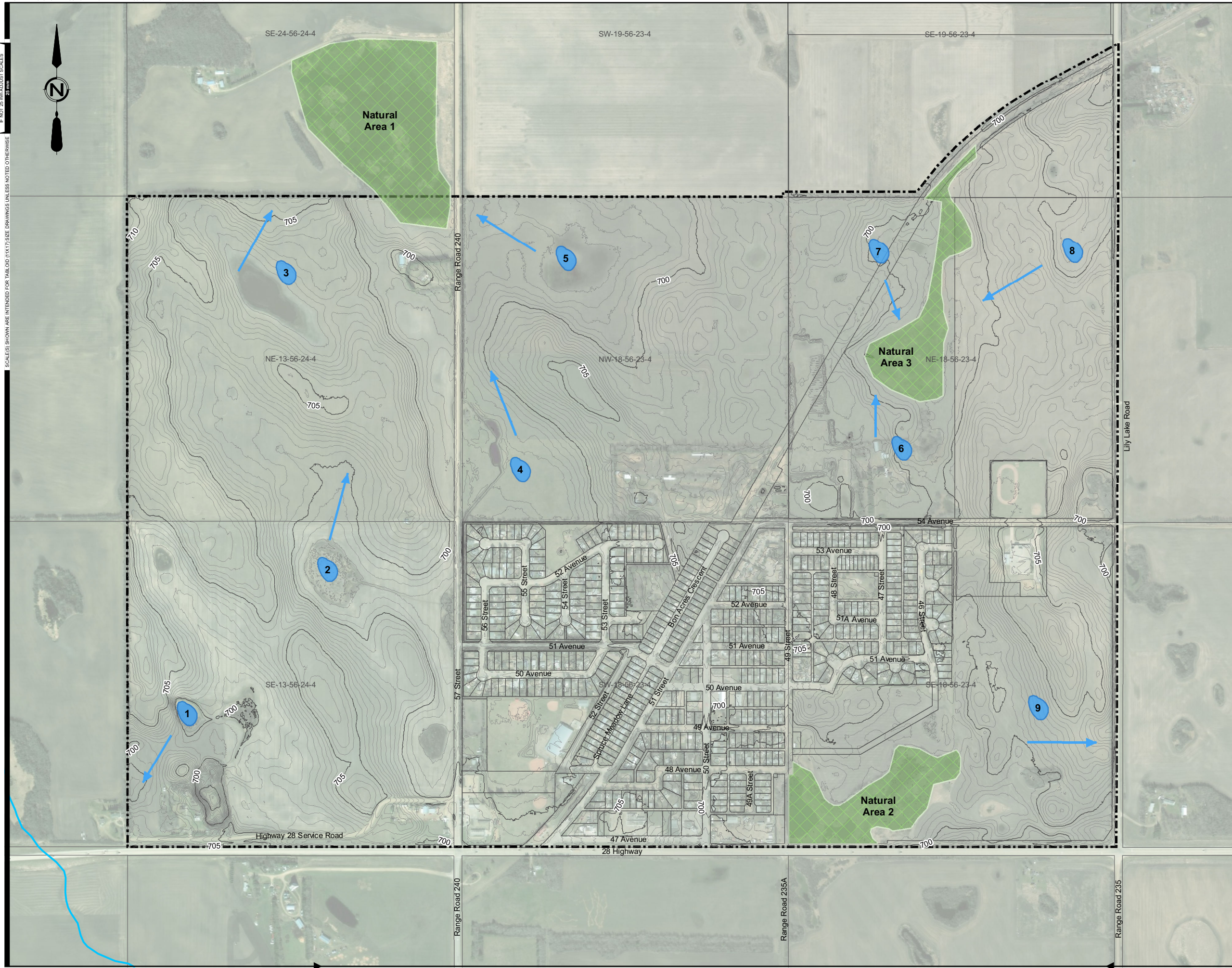


FIGURE No. 4-3

TOWN OF BON ACCORD
STORM MASTER PLAN UPDATE

PROPOSED STORMWATER MANAGEMENT
FACILITIES

AE PROJECT No.	2019-3459
SCALE	1:9,000
COORD. SYSTEM	NAD 1983 3TM 114
DATE	2019 OCTOBER
REV	
DESCRIPTION	ISSUED FOR FINAL

5 COST ESTIMATE

5.1 Proposed Upgrades – Existing System

A preliminary cost estimate for upgrades to the existing minor and major systems is provided in **Table 5-1**. The following assumptions were used to generate the cost estimate:

- A unit price of \$1,500 per linear meter of storm pipe replacement was assumed. This value includes surface restoration but not GST;
- 50% for Engineering and contingency has been included; and,
- Costs are in 2019 dollars.

**Table 5-1
Existing System Upgrades – Cost Estimate**

Item No.	Description	Estimated Cost
1.0	Remove and Replace Existing Storm Pipes	\$ 1,450,000
2.0	Remove and Replace Existing Culverts	\$ 630,000
Total – Proposed Existing System Upgrades		\$ 2,080,000
Engineering and Contingency (50%)		\$ 1,040,000
Preliminary Cost Estimate Total		\$ 3,120,000

Appendix G provides the detailed cost estimate.

\\s-edm-fs-01\projects\20193459\00_Master_Servicing\Engineering\03.00_Conceptual_Feasibility_Design_Master_Plans\Stormwater\Report\vpf_Stormwater_Master_Plan_Final_20191008.docx

6 CONCLUSIONS AND RECOMMENDATIONS

From the analysis described above, the following can be concluded:

1. There are three natural areas located within the Town boundary. These natural areas act as stormwater management facilities before facilitating drainage towards the Sturgeon River;
2. Assessment of the existing minor system showed that there are several storm pipes that do not have the capacity to convey flows generated during a 1 in 5 year design storm event. In addition, results indicate that there are several storm pipes that do not have adequate cover;
3. Assessment of the existing major system showed that the majority of the culverts do not have the capacity to convey the estimated design flow generated during a 1 in 100 year design storm event;
4. Based on the future land use concept, no flows from future developments will be discharged the existing minor system. Therefore, recommended upgrades for the existing minor system will be sufficient to accommodate flows from future development;
5. Majority of the upgraded culverts within the existing system have the capacity, except for five culverts; and,
6. A preliminary Class D cost estimate of \$3,120,000 is required to undertake the existing system upgrades.

Associated Engineering recommends the following:

1. Upgrade the proposed existing minor system described in Section 3.1.1;
2. The following additional upgrades for the existing minor system:
 - Install adequate pipe insulation to meet minimum cover requirements.
 - Ensure that all storm pipes meet the minimum grade requirements.
3. Develop a maintenance plan for the storm pipe network;
4. All future minor systems should be designed separately from the existing system;
5. Upgrade the proposed existing major system described in Section 3.2.1 and 4.2.1;
6. The following additional upgrades for the existing major system:
 - Ensure all ditches have a width equal to the diameter of the upstream culvert.
 - Provide adequate grading within the ditches. A minimum value of 0.5% is recommended.
7. Develop a maintenance plan for the ditch network;
8. The Town complete a detailed assessment of the storm pipe network, culverts and ditches through topographical survey to verify the analysis and proposed upgrades;

\\\\s-edm-fs-01\projects\20193459\00_Master_Servicing\Engineering\03:00_Conceptual_Feasibility_Design_Master_Plans\Stormwater\Report\vpf_Stormwater_Master_Plan_Final_20191008.docx

9. All proposed stormwater management facilities within future development will be controlled to the release rate of 6 L/s/ha. The final facility locations and sizes are to be confirmed during the next stages of development. In addition, “leap-frogging” of development is to be discouraged and sequential development should be encouraged;
10. Improvements to Natural Areas 1, 2 and 3;
11. There are two viable drainage courses for Natural Area 1. A detailed assessment is to be completed during the next stages of development to select the best option;
12. There are three mitigation options identified to alleviate the existing flooding and drainage issues experienced within the surrounding areas of Natural Area 2. A detailed assessment is to be completed during the next stages of development to select the best option;
13. Confirm that Natural Area 3 can accommodate runoff flows from surrounding developments and upgrade as required;
14. The control structures for each natural area be constructed to discharge flows at 6 L/s/ha;
15. All natural areas should be assessed to ensure they can accommodate runoff flows. This will be achieved by establishing a design normal water level, based on the property line and the minimum freeboard;
16. All proposed improvements will require an environmental regulatory overview; and,
17. Consider construction of a snow storage facility to allow for snow management within existing developments and for future developments.

CLOSURE

This report was prepared for the Town of Bon Accord to provide a Stormwater Master Plan for the existing and future development areas.

The services provided by Associated Engineering Alberta Ltd. in the preparation of this report were conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions. No other warranty expressed or implied is made.

Respectfully submitted,
Associated Engineering Alberta Ltd.

Diego Mejia, P.Eng.
Project Manager

Akinbola George, M.A.Sc., P.Eng., PMP
Senior Water Resources Engineer



Lisa Butler, E.I.T.
Water Resources Engineer-In-Training

<p>ASSOCIATED ENGINEERING QUALITY MANAGEMENT SIGN-OFF</p> <p>Signature: _____</p> <p>Date: _____</p>

<p>APEGA Permit to Practice P 3979</p>

PERMIT STAMP

APPENDIX A - STORMWATER MASTER PLAN - PROPOSED DESIGN STANDARDS MEMORANDUM

\\s-edm-fs-01\projects\20193459\00_Master_Servicing\Engineering\03:00_Conceptual_Feasibility_Design_Master_Plans\Stormwater\Report\vpf_Stormwater_Master_Plan_Final_20191008.docx



Associated
Engineering

GLOBAL PERSPECTIVE.
LOCAL FOCUS.

Date: April 17, 2019 **File:** 20193459.00.03.00
To: Town of Bon Accord
From: Lisa Butler, E.I.T.
Project: 2019-3459
Subject: Stormwater Master Plan - Proposed Design Standards

MEMO

Associated Engineering completed a desktop review of the current stormwater design standards for the Town of Bon Accord (the Town). The current design standards for the Town, pertinent to stormwater, are provided in **Appendix A**. Due to limited stormwater information available, the following design standards were reviewed:

- Alberta Environment and Parks (AEP);
- City of Edmonton;
- City of St. Albert; and,
- Sturgeon County.

Table B-1 to **Table B-4** in **Appendix B** summarize the stormwater standards review. Based on our review and discussion with the Town on April 17, 2019, the Town will adopt the City of Edmonton Stormwater Design Standards (March 2015). This recommendation is made for the following reasons:

- The Town is close to the City of Edmonton;
- Other nearby communities, such as St. Albert and Sturgeon County, have similar design criteria to City of Edmonton Standards;
- The City of Edmonton Standards were most recently updated in 2015; and,
- The City of Edmonton is using the most current Intensity Duration Frequency (IDF) curves, developed in 2018.



Associated
Engineering

GLOBAL PERSPECTIVE.
LOCAL FOCUS.

Memo To: Town of Bon Accord

April 04, 2019

- 2 -

Appendix A – Town of Bon Accord Stormwater Design Standards

4.0 STORM SEWER SYSTEM

The pipe storm sewer system shall be of sufficient capacity to carry storm water run-off quantities based on:

- the Rational Method of storm sewer design;
- a five year storm for the Edmonton area;
- a minimum run-off co-efficient for residential areas and a minimum inlet time of 20 minutes.

4.1 Storm Sewer Mains

Minimum size of 300 mm diameter.

All changes in direction of flow shall be no greater than 45° in pipes exceeding 600 mm diameter or flows exceeding 1.5 m/s in any pipe.

Mains shall be installed to provide a minimum depth of cover of 1.75m unless otherwise approved.

Mains shall be of sulfate resistant concrete with either mortar or rubber ring jointing systems or polyethylene on approval of the Town and its Engineer after assessment of storm water conditions in commercial or Industrial areas. In residential areas leads and mains may be PVC or polyethylene on approval of the Town and its Engineer after assessment of storm water conditions.

Sand bedding shall be provided for all mains.

Sand bedding shall be 150 mm below the pipe and up to at least 300 mm above the pipe on all mains.

Sand bedding shall be compacted to 95% Standard Procter Density in 150 mm layers. Sand bedding shall be well graded sand consisting of hard durable particles free from clay lumps, cementation, organic material, frozen material, or other deleterious materials. Gradations are to be within limits specified when tested to ASTM C136-84a and ASTM C117-84 and are to have a smooth curve without sharp breaks when plotted on a semi - log grading chart.

<u>Sieve Size</u>	<u>%Passing</u>
10.00 mm	100
5.00 mm	50 - 100
2.00 mm	30 - 90
.40 mm	10 - 50
.08 mm	0 - 10

Liquid limit maximum 25. Plasticity index maximum 6. Improved or special bedding shall be provided where soil conditions or trench load conditions dictate.

4.2 Storm Water Retention Ponds

Retention and detention ponds shall be incorporated into storm drainage systems to meet all standards and requirements of Alberta Environment.

4.3 Manholes

Refer to standards listed under Sanitary Sewage Collection System.

All precast manholes shall be perched when the main size is 600 mm to 1050 mm. Tee riser manholes shall be used above 1050 mm diameter.

4.4 Catch Basins

Surface water shall be intercepted with a sufficient number of catch basins such that the inlet capacity of the catch basins is sufficient to receive the calculated storm water flow. Surface water shall not be permitted to run a distance greater than 350m along roadways without provision for interception by catch basins. This distance shall be reduced on steep road grades according to good Engineering practises.

All catch basin bodies shall be of precast concrete sections (sulfate resistant) and constructed so as to provide a sump to trap rocks and gravel.

Catch basin leads shall be installed to provide a minimum depth of cover of 1.25 m unless otherwise approved. The minimum slope of catch basin leads shall be 2%.

All catch basin leads shall discharge directly into storm sewer manholes.

4.5 Trenching and Backfilling

The developer shall undertake all necessary excavating and backfilling in accordance with Occupational Health and Safety Act and Regulations and shall be entirely responsible for all damages to either private or public property.

All backfill shall be compacted under existing and proposed streets, concrete work, and under all other areas requested by the Town. The backfill material shall be either native or imported granular material, as requested by the Town, and shall be compacted to 95% of Standard Proctor Density unless otherwise approved.



Associated
Engineering

GLOBAL PERSPECTIVE.
LOCAL FOCUS.

Memo To: Town of Bon Accord

April 04, 2019

- 3 -

Appendix B – Design Standards Review

Table B-1
Stormwater Management Guidelines for the Province of Alberta (January 1999) - Review Summary

Parameter	Design Criteria
MINOR SYSTEM	
Design Storm Event	1:5 Year
Calculation Method	Rational Method (Area < 50 ha)
Allowable Surcharge	In a 1:100 year event, should not exceed basement levels and the flow depth on streets should not exceed 300 mm
MAJOR SYSTEM	
Design Storm Event	1:100 Year
Maximum Allowable Ponding	0.30 m at the gutters
	Standing water should not exceed 0.50 m or extend to adjacent buildings 0.05 m for arterial roads
Calculation Method	Rational Method (Area < 50 ha) or computer modelling (Area > 50 ha)
Stormwater Management Facilities - Wet Ponds	
Minimum Water Surface Area	2 ha
Maximum Side Slopes above Active Storage Zone	4(H):1(V) to 5(H):1(V)
Maximum Interior Side Slopes in Active Storage Zone	5(H):1(V) to 7(H):1(V)
Maximum Exterior Side Slopes	3(H):1(V)
Detention Time	24 hours
Length to Width Ratio	4:1 to 5:1
Minimum Permanent Pool Depth	2.0 m
Maximum Permanent Pool Depth	3.0 m
Stormwater Management Facilities - Dry Ponds	
Detention Time	24 hours
Maximum Active Retention Storage Depth	1.0 m to 1.5 m
Maximum Water Level	Below adjacent basement footings
Maximum Interior Side Slopes	4(H):1(V) to 5(H):1(V)
Maximum Exterior Side Slopes	3(H):1(V)
Minimum Freeboard	0.6 m
Minimum Ratio of Effective Length to Effective Width	4:1 to 5:1
Minimum Slope along Pond Bottom	1% (2% is preferred)
Drainage Swales	
Minimum Longitudinal Slope	1% to 2%
Check Dams	Used when the longitudinal slope exceeds 2% to 4%
Maximum Side Slopes	2.5 to 1 but are optimally less than 4 to 1
Minimum Bottom Width	0.75 m
Minimum Depth	0.5 m
Maximum Velocity	0.5 m/s

Table B-2
The City of Edmonton Design and Construction Standards Volume 3 Drainage (March 2015) - Review Summary

Parameter	Design Criteria																																													
MINOR SYSTEM																																														
Design Storm Event	1:5 Year																																													
Calculation Method	Rational Method (Area < 65 ha)																																													
Runoff Coefficients	Based on Landuse Zoning (Bylaw 12800) or Land Use																																													
<p align="center">Table A4 - Storm Runoff Coefficients and Imperviousness According to Zoning</p> <table border="1"> <thead> <tr> <th>Zoning or Classification Designation Per Bylaw # 12800¹</th> <th>Runoff² Coefficient "C"</th> <th>Imperviousness³ "Imp" (%)</th> </tr> </thead> <tbody> <tr><td>A, RR, AC</td><td>0.2</td><td>10 - 50</td></tr> <tr><td>AP, Schools</td><td>0.3</td><td>10 - 50</td></tr> <tr><td>RF1, RF2, RF3, RF4, RMH, AGU</td><td>0.5</td><td>40 - 65</td></tr> <tr><td>MA, IH</td><td>0.5</td><td>40 - 70</td></tr> <tr><td>RF5, RF6, RSL, RA7</td><td>0.65</td><td>40 - 90</td></tr> <tr><td>RA8, US, PU</td><td>0.75</td><td>40 - 90</td></tr> <tr><td>CNC, CSC, IB, IM, RA9, CB1, CHY, AGI, CO</td><td>0.9</td><td>40 - 100</td></tr> <tr><td>CB2</td><td>0.95</td><td>70 - 100</td></tr> <tr><td>RMX, CMS, DC1, DC2, DC3, DC4</td><td>*</td><td>40 - 100</td></tr> </tbody> </table> <p>¹ For zonings not shown in this table, the runoff coefficient "C" and the percentage of imperviousness "Imp%" shall be estimated by the designer. ² Minimum design values to be used without specific area analysis. To be used only for calculation of peak runoff rates by the rational method. ³ Typical ranges based on land use bylaw site coverage limits and typical paving practice.</p>	Zoning or Classification Designation Per Bylaw # 12800 ¹	Runoff ² Coefficient "C"	Imperviousness ³ "Imp" (%)	A, RR, AC	0.2	10 - 50	AP, Schools	0.3	10 - 50	RF1, RF2, RF3, RF4, RMH, AGU	0.5	40 - 65	MA, IH	0.5	40 - 70	RF5, RF6, RSL, RA7	0.65	40 - 90	RA8, US, PU	0.75	40 - 90	CNC, CSC, IB, IM, RA9, CB1, CHY, AGI, CO	0.9	40 - 100	CB2	0.95	70 - 100	RMX, CMS, DC1, DC2, DC3, DC4	*	40 - 100	<p align="center">Table A5 - Storm Runoff Coefficients and Imperviousness According to Land Use</p> <table border="1"> <thead> <tr> <th>Land Use</th> <th>Runoff Coefficient 1 "C"</th> <th>Imperviousness " Imp " (%)</th> </tr> </thead> <tbody> <tr><td>Asphalt, concrete, roof areas</td><td>0.95</td><td>90 - 100</td></tr> <tr><td>Industrial, commercial</td><td>0.60</td><td>50 - 100</td></tr> <tr><td>Single family residential</td><td>0.65</td><td>40 - 60</td></tr> <tr><td>Predominant grassed areas, parkland</td><td>0.10</td><td>10 - 30</td></tr> </tbody> </table>	Land Use	Runoff Coefficient 1 "C"	Imperviousness " Imp " (%)	Asphalt, concrete, roof areas	0.95	90 - 100	Industrial, commercial	0.60	50 - 100	Single family residential	0.65	40 - 60	Predominant grassed areas, parkland	0.10	10 - 30
Zoning or Classification Designation Per Bylaw # 12800 ¹	Runoff ² Coefficient "C"	Imperviousness ³ "Imp" (%)																																												
A, RR, AC	0.2	10 - 50																																												
AP, Schools	0.3	10 - 50																																												
RF1, RF2, RF3, RF4, RMH, AGU	0.5	40 - 65																																												
MA, IH	0.5	40 - 70																																												
RF5, RF6, RSL, RA7	0.65	40 - 90																																												
RA8, US, PU	0.75	40 - 90																																												
CNC, CSC, IB, IM, RA9, CB1, CHY, AGI, CO	0.9	40 - 100																																												
CB2	0.95	70 - 100																																												
RMX, CMS, DC1, DC2, DC3, DC4	*	40 - 100																																												
Land Use	Runoff Coefficient 1 "C"	Imperviousness " Imp " (%)																																												
Asphalt, concrete, roof areas	0.95	90 - 100																																												
Industrial, commercial	0.60	50 - 100																																												
Single family residential	0.65	40 - 60																																												
Predominant grassed areas, parkland	0.10	10 - 30																																												
Runoff Coefficients for Design Storm Events with a Return Period Greater than 10 Years	C x 1.1 for return periods between 10 and 25 years C x 1.2 for return periods between 25 and 50 years C x 1.25 for return periods greater than 50 years																																													
Rainfall Data	2018 IDF Curve																																													
Time of Concentration	<p align="center">Table A6 - Design Inlet Time (Minutes) with Respect to Catchment Imperviousness and Size</p> <table border="1"> <thead> <tr> <th>Imperviousness (%) Catchment Area (A)</th> <th>30</th> <th>50</th> <th>> 70</th> </tr> </thead> <tbody> <tr><td>A = 8 ha or less</td><td>8</td><td>8</td><td>5</td></tr> <tr><td>8 ha < A < 40 ha</td><td>9.2</td><td>9.2</td><td>6</td></tr> <tr><td>A = 40 ha or more</td><td>10.4</td><td>10.4</td><td>7.25</td></tr> </tbody> </table>	Imperviousness (%) Catchment Area (A)	30	50	> 70	A = 8 ha or less	8	8	5	8 ha < A < 40 ha	9.2	9.2	6	A = 40 ha or more	10.4	10.4	7.25																													
Imperviousness (%) Catchment Area (A)	30	50	> 70																																											
A = 8 ha or less	8	8	5																																											
8 ha < A < 40 ha	9.2	9.2	6																																											
A = 40 ha or more	10.4	10.4	7.25																																											
Drainage Areas (< 30 ha)																																														
Surcharge of Sewer Pipes	None																																													
Maximum Ponding Depth	150 mm																																													
Acceptable Depths of Flow and Ponding on Roadways	No over-topping of curbs occurs on local roadways, a width equivalent to one traffic lane remains free from inundation on collector roads and one traffic lane in each travel direction remains free from inundation on arterial roads																																													
Stormwater Quality	BMPs prior to discharging into a pipes system																																													
Drainage Areas (>30 ha)																																														
Design Capacity	Reserve capacity included to account for unanticipated changes in land use and runoff																																													
	Pipes are to be designed to accommodate, without surcharge, 1.25 times the rate of flow which would occur in a 5-year return period rainfall event																																													

Table B-2
The City of Edmonton Design and Construction Standards Volume 3 Drainage (March 2015) - Review Summary

Parameter	Design Criteria
Surcharge of Sewer Pipes	Where the storm trunk will receive both uncontrolled flow from areas ≥ 30 ha and controlled discharge from stormwater management facilities, the pipes shall be designed to accommodate, without surcharge, 1.25 times the 5 year design flow from the uncontrolled lands plus the maximum design stormwater management facility outflow rate
Hyetograph	4-hour Chicago when using computer simulation
Storm Pipe Sizing	
Methodology	Manning's Equation for pipe full conditions
Manning's n Values	All smooth-wall pipe (n = 0.013) Corrugated metal pipe - unpaved (n = 0.024) Corrugated metal pipe - invert paved (n = 0.020) Corrugated metal pipe - all paved (n = 0.013)
Minimum Storm Pipe Size	300 mm diameter
Minimum Catchbasin Lead Size	250 mm diameter
Minimum Foundation Drain Sewer Size	200 mm diameter
Mean Velocity (Flowing Full)	0.90 m/s to 1.0 m/s
Acceptable Range of Velocities	0.6 m/s < V < 3.0 m/s
Supercritical Flows	Sewers shall not be designed to operate in super-critical flow conditions during flows less than design capacity conditions. Hydraulic structures are required under super-critical flow regimes and must have a minimum design life of 75 years
Minimum Pipe Slopes	200 mm diameter = 0.40 % (foundation drain sewer) 250 mm diameter = 0.28% (foundation drain sewer) 300 mm diameter = 0.22% 375 mm diameter = 0.15% 450 mm diameter = 0.12% 525 mm diameter = 0.10% 600 mm diameter and larger = 0.10% Catchbasin lead = 1.0%
Minimum Pipe Slopes (Aligned in a Curve)	300 mm diameter = 0.25% 375 mm diameter = 0.18% 450 mm diameter = 0.15% 525 mm diameter = 0.13% 600 mm diameter and larger = 0.10%
Depth of Cover from Finished Grade to Pipe Obvert	
Pipes < 610 mm diameter	2.0 m
Pipes > 610 mm diameter	1.5 m
Spacing Requirements	
Maximum Flow Distance in Roadway Gutters	150 m
Maximum Flow Distance in Lanes and Walkways	180 m
MAJOR SYSTEM	
Design Storm Event	1:100 Year
Calculation Method	Rational Method (Area < 65 ha) or computer modelling (Area > 65 ha)
Maximum Ponding Depth	Below the lowest anticipated landscape grade or opening at any adjacent buildings, with a freeboard provision generally in the order of 350 mm with a minimum of 150 mm Less than 350 mm in roadways and other public right-of-way's

Table B-2
The City of Edmonton Design and Construction Standards Volume 3 Drainage (March 2015) - Review Summary

Parameter	Design Criteria
	Less than 150 mm for arterial roadways
Storage Elements	
Over-topping	None due to storm events equal to or less severe than the critical storage event for the catchment served
Retention Volume	Equivalent of 120 mm of water over the total catchment area draining the facility
Modelling	Used to verify the performance of each storage facility 24-hour Huff distribution is used when modelling stormwater management
Emergency Overflow	To be provided wherever feasible
Freeboard	0.3 m if an emergency overflow is provided 0.5 m if an emergency overflow is not provided
Drawdown Time	1 in 5 year runoff capacity to be available within 24 hours 1 in 25 year runoff capacity to be available within 48 hours 90% of the facility full volume to be available within 96 hours
Flow Capacity of Streets	Apply the modified Manning's formula with $n = 0.013$ for roadways and $n = 0.05$ for grassed boulevards
Stormwater Management Facilities (SWMFs) - Wet Pond and Constructed Wetlands	
Outflow Control Works	Outlet from a SWMF must incorporate appropriate means for control of outflow
Outflow Control Gate	Slide gate or similar means to stop the discharge of impounded water
Maintenance and Service Manual	Required for every SWMF
Signage	Required for safety
Minimum Sizing	2.0 ha at normal water level for constructed wetlands
Side Slopes	7(H):1(V) for areas normal or infrequently covered by water 3(H):1(V) for 1.0 m below normal water level 5(H):1(V) for confined spaces or areas with extreme topography
Minimum Depth	2.5 m between normal water level and the bottom of the pond
Inlet/Outlet Spacing	Located to maximum detention time and circulation. Distanced as far as possible from each other to avoid hydraulic short-circuiting
Inlet and Outlets	Fully submerged with the pipe crown being 1.0 m below the normal water level
Stormwater Management Facilities (SWMFs) - Dry Ponds	
Maximum Live Storage	3.0 m (measured from the invert elevation of the outlet pipe)
Minimum Slope of Pond Bottom	0.7% (1.0% or greater is preferred)
Side Slopes	7(H):1(V) within private property 5(H):1(V) within public property
Inlets and Outlets	Require grates provided over openings Maximum clear bar spacing of 150 mm Maximum velocity through the grate = 1.0 m/s Physically separated around the perimeter and distanced as far as possible to avoid short-circuiting
Culverts	
Minimum Size	400 mm diameter
Swales Crossing Several Properties	
Minimum Depth	150 mm
Maximum Side Slope	4(H):1(V)
Minimum Longitudinal Slope	1.5%
Grassed Swales Serving Lots on Both Sides	
Minimum Depth	150 mm
Maximum Side Slope	4(H):1(V)

Table B-2
The City of Edmonton Design and Construction Standards Volume 3 Drainage (March 2015) - Review Summary

Parameter	Design Criteria
Minimum Longitudinal Slope	1.5%
Grassed Swales with Concrete Gutter	
Range of Depth	75 mm to 150 mm
Range of Width	500 mm to 610 mm
Maximum Side Slope	4(H):1(V)
Minimum Thickness	100 mm
OTHER	
Mike Urban (or Mouse) and Mike 21 models are recommended for use in the design of dual (major and minor) drainage systems	
The 4-hour Chicago distribution hyetographs should be used for analysis of major and minor conveyance systems by computer simulation	

**Table B-3
City of St. Albert Municipal Engineering Standards (April 2013)- Review Summary**

Parameter	Design Criteria																								
MINOR SYSTEM																									
Design Storm Event	1:5 Year																								
Calculation Method	Rational Method (Area < 65 ha) or computer modelling (Area > 65 ha)																								
Runoff Coefficients - C	Parks, Reserves, Grassed areas = 0.15																								
	Single Family Residential = 0.50																								
	Multi-Family Residential = 0.70																								
	Commercial = 0.70																								
	Paved Areas and Roofs = 0.95																								
Runoff Coefficients for Design Storm Events with a Return Period Greater than 10 Years	C x 1.1 for return periods between 10 and 25 years																								
	C x 1.2 for return periods between 25 and 50 years																								
	C x 1.25 for return periods greater than 50 years																								
Time of Concentration	<table border="1"> <thead> <tr> <th rowspan="2">Area</th> <th>Design Inlet Time (t_i)</th> <th colspan="3">Imperviousness</th> </tr> <tr> <th></th> <th>30%</th> <th>50%</th> <th>> 70%</th> </tr> </thead> <tbody> <tr> <td></td> <td>t_i ≤ 8.0 ha</td> <td>8.0 min</td> <td>8.0 min</td> <td>5.0 min</td> </tr> <tr> <td></td> <td>8.0 < t_i < 40 ha</td> <td>9.2 min</td> <td>9.2 min</td> <td>6.0 min</td> </tr> <tr> <td></td> <td>t_i ≥ 40 ha</td> <td>10.4 min</td> <td>10.4 min</td> <td>7.3 min</td> </tr> </tbody> </table>	Area	Design Inlet Time (t _i)	Imperviousness				30%	50%	> 70%		t _i ≤ 8.0 ha	8.0 min	8.0 min	5.0 min		8.0 < t _i < 40 ha	9.2 min	9.2 min	6.0 min		t _i ≥ 40 ha	10.4 min	10.4 min	7.3 min
Area	Design Inlet Time (t _i)		Imperviousness																						
		30%	50%	> 70%																					
	t _i ≤ 8.0 ha	8.0 min	8.0 min	5.0 min																					
	8.0 < t _i < 40 ha	9.2 min	9.2 min	6.0 min																					
	t _i ≥ 40 ha	10.4 min	10.4 min	7.3 min																					
Rainfall Data	Edmonton City Centre Airport IDF Curve																								
Gravity Sewer Mains																									
Minimum Pipe Diameter	300 mm																								
Design Mean Flow Velocity	0.9 m/s to 1.0 m/s																								
Minimum Velocity	0.6 m/s																								
Maximum Velocity	3.0 m/s																								
Manning's n	0.013																								
Minimum Pipe Slope	150 mm diameter = 0.60%																								
	300 mm diameter = 0.22%																								
	375 mm diameter = 0.15%																								
	450 mm diameter = 0.12%																								
	≥ 525 mm diameter = 0.10%																								
Minimum Pipe Slope (Curved Alignment)	<table border="1"> <thead> <tr> <th>C/L Sewer Radius (m)</th> <th>Increase Minimum Pipe Slope (%)</th> <th>Minimum Manhole Spacing (m)</th> </tr> </thead> <tbody> <tr> <td>92-100</td> <td>50</td> <td>92</td> </tr> <tr> <td>100-150</td> <td>40</td> <td>95</td> </tr> <tr> <td>150-200</td> <td>30</td> <td>105</td> </tr> <tr> <td>200-250</td> <td>20</td> <td>115</td> </tr> <tr> <td>205-300</td> <td>10</td> <td>125</td> </tr> <tr> <td>> 300</td> <td>0</td> <td>135</td> </tr> </tbody> </table>	C/L Sewer Radius (m)	Increase Minimum Pipe Slope (%)	Minimum Manhole Spacing (m)	92-100	50	92	100-150	40	95	150-200	30	105	200-250	20	115	205-300	10	125	> 300	0	135			
C/L Sewer Radius (m)	Increase Minimum Pipe Slope (%)	Minimum Manhole Spacing (m)																							
92-100	50	92																							
100-150	40	95																							
150-200	30	105																							
200-250	20	115																							
205-300	10	125																							
> 300	0	135																							
Storm Sewer Trunk Mains																									

**Table B-3
City of St. Albert Municipal Engineering Standards (April 2013)- Review Summary**

Parameter	Design Criteria
Servicing Area	> 30 ha
Surcharge of Sewer Pipes	Accommodate, without surcharge, the design flow multiplied by 1.25 Where the storm truck will receive both uncontrolled flow from areas \geq 30 ha and controlled discharge from stormwater management facilities, the pipes shall be designed to accommodate the anticipated uncontrolled design flow multiplied by 1.25 plus the design maximum outflow rates from the stormwater management facilities
Horizontal Alignment	3.0 m horizontally from any water main and 1.8 m horizontally from any sanitary sewer main or gas line
Manhole Spacing	
Maximum Distance	135 m for sewers less than 1200 mm in diameter 500 m for sewers 1200 mm in diameter or greater
Catchbasins	
Maximum Spacing	120 m
Minimum Pipe Diameter	250 mm
Minimum Velocity	0.6 m/s
Maximum Velocity	3.0 m/s
Manning's n	0.013
Minimum Slope	1.0%
Maximum Length	30 m
Minimum Depth of Cover	1.5 m
MAJOR SYSTEM	
Design Storm Event	1:100 Year
Maximum Depth of Peak Flows and Ponding	150 mm on arterial roadways 350 mm below the lowest anticipated landscape grade or opening along adjacent lots and buildings
Manning's n	n = 0.013 for roadways n = 0.050 for grassed boulevards
Culverts	
Minimum Size	400 mm diameter
Maximum Clear Bar Spacing	150 mm
Stormwater Management Facilities - Wet Ponds	
Minimum Surface Area at Normal Water Level	2.0 ha
Minimum Depth of Pond at Normal Water Level	2.5 m
Minimum Width of the Water Surface at Normal Water Level	25 m
Inlets and Outlets	Fully submerged with pipe obverts a minimum of 1.0 m below the normal water level Inverts a minimum of 150 mm above the lake bottom Located as far from each other as possible to avoid hydraulic short-circuiting Normal operating level shall be at or below the pipe invert at the nearest manhole on the inlet storm sewer main Anticipated high water level during a 1:5 year rainfall event shall be at or below the pipe obvert at the nearest manhole on the inlet storm sewer main
Emergency Overflow	Required to redirect flows in excess of the design peak flow
Normal Water Level	Set at a minimum of 300 mm below the lowest basement weeping tile of any adjacent buildings
Side Slopes	Maximum of 3(H):1(V) on the pond exterior

**Table B-3
City of St. Albert Municipal Engineering Standards (April 2013)- Review Summary**

Parameter	Design Criteria
	Maximum of 5(H):1(V) on the pond interior
Best Management Practices	Refer to Alberta Environment
Stormwater Management Facilities - Dry Ponds	
Maximum Active Storage Depth	1.5 m
Inlets and Outlets	Located as far as possible away from each other to avoid short-circuiting Must include gratings with a maximum clear bar spacing of 150 mm
Emergency Overflow	Required to redirect flows in excess of the design peak flow
Minimum Slope of Pond Bottom	2%
Drainage Swales	
Minimum Width of Right-of-Ways or Easements	3 m
Minimum Slope	2%

**Table B-4
Sturgeon County General Municipal Servicing Standards (May 2009) - Review Summary**

Parameter	Design Criteria
MINOR SYSTEM	
Design Storm Event	1:5 Year
Calculation Method	Rational Method (Area < 65 ha) or computer modelling (Area > 65 ha)
Rainfall Data	Edmonton Municipal Airport - IDF Period 1914-1995
Runoff Coefficients	CR-1 = 0.2
	CR-2, CR-E = 0.3
	HR = 0.4
	Grassed Areas (Parks, Playgrounds) = 0.15
	Undeveloped Land (Farmland) = 0.1
	Pavement, Concrete, Buildings = 0.9
	Gravel Roadways = 0.3
Time of Concentration	Maximum 10 minutes
Pipe Sizing	
Minimum Pipe Size for Storm Sewer Main	300 mm diameter
Minimum Pipe Size for Foundation Drains Accommodating Flow from Weeping Tiles Only	150 mm diameter
Minimum Pipe Size for Catchbasins Leads	250 mm diameter
Manning's' n	0.013
Velocity	
Minimum Full-Flow Velocity	0.6 m/s
Maximum Full-Flow Velocity	3.0 m/s
Minimum Pipe Slope	300 mm diameter = 0.194%
	375 mm diameter = 0.145%
	450 mm diameter = 0.114%
	525 mm diameter = 0.092%
	600 mm diameter = 0.077%
	675 mm diameter = 0.065%
	750 mm diameter = 0.057%
	900 mm diameter = 0.045%
	1050 mm diameter = 0.036%
	1200 mm diameter = 0.031%
	1350 mm diameter = 0.027%
	1500 mm diameter = 0.023%
	1650 mm diameter = 0.020%
	1800 mm diameter = 0.018%
	1950 mm diameter = 0.016%
2100 mm diameter = 0.015%	
2250 mm diameter = 0.013%	
2400 mm diameter = 0.012%	
2550 mm diameter = 0.011%	
2820 mm diameter = 0.010%	

**Table B-4
Sturgeon County General Municipal Servicing Standards (May 2009) - Review Summary**

Parameter	Design Criteria
Minimum Pipe Slope for Curved Sewers	300 mm diameter = 0.25%
	375 mm diameter = 0.18%
	450 mm diameter = 0.15%
	525 mm diameter = 0.13%
	600 mm diameter and greater = 0.10%
Minimum Slope for Catchbasins Leads	1.0%
Minimum Depth of Cover	2.2 m for sewer main
	1.5 m for catchbasins lead
Manhole Spacing	
Sewers less than 1200 mm diameter	120 m
Sewers 1200 mm diameter to 1650 mm diameter	500 m
Sewers larger than 1650 mm diameter	800 m
Minimum Manhole Size	1200 mm inside diameter
MAJOR SYSTEM	
Design Storm Event	1:100 Year
Calculation Method	Rational Method (Area < 65 ha) or computer modelling (Area > 65 ha)
Rainfall Data	Edmonton Municipal Airport - IDF Period 1914-1995
Stormwater Management Facilities - Wet Ponds and Lakes	
High Water Level	300 mm below the lowest building opening on adjacent lots
Minimum Surface Area at Normal Water Level	2 ha
Maximum Side Slopes	3(H):1(V) from the lake bottom to 1 m below normal water level
	7(H):1(V) for 1 m below normal water level and above
Minimum Depth from Normal Water Level to Lake Bottom	2.5 m
Inlet and Outlets	Fully submerged and at least 200 mm above the lake bottom and 1.0 m below normal water level
Overflow Channel	Required at the high water level
Stormwater Management Facilities - Dry Ponds	
Maximum Storage Depth	1.5 m from the invert of the outlet pipe
Minimum Pond Bottom Slope	1.0%
Maximum Side Slopes	7(H):1(V) within private property
	5(H):1(V) within public property
Inlet and Outlets	Maximum bar spacing of 150 mm
Drainage Swales	
Minimum Clearance	200 mm between the edge of a swale and property line
Minimum Slope	0.75% (on private property)
	0.5% (on public property)
	1.5% (without a concrete gutter)
Other	
The design of both the major and minor systems must meet the requirements outlined by Alberta Environment	

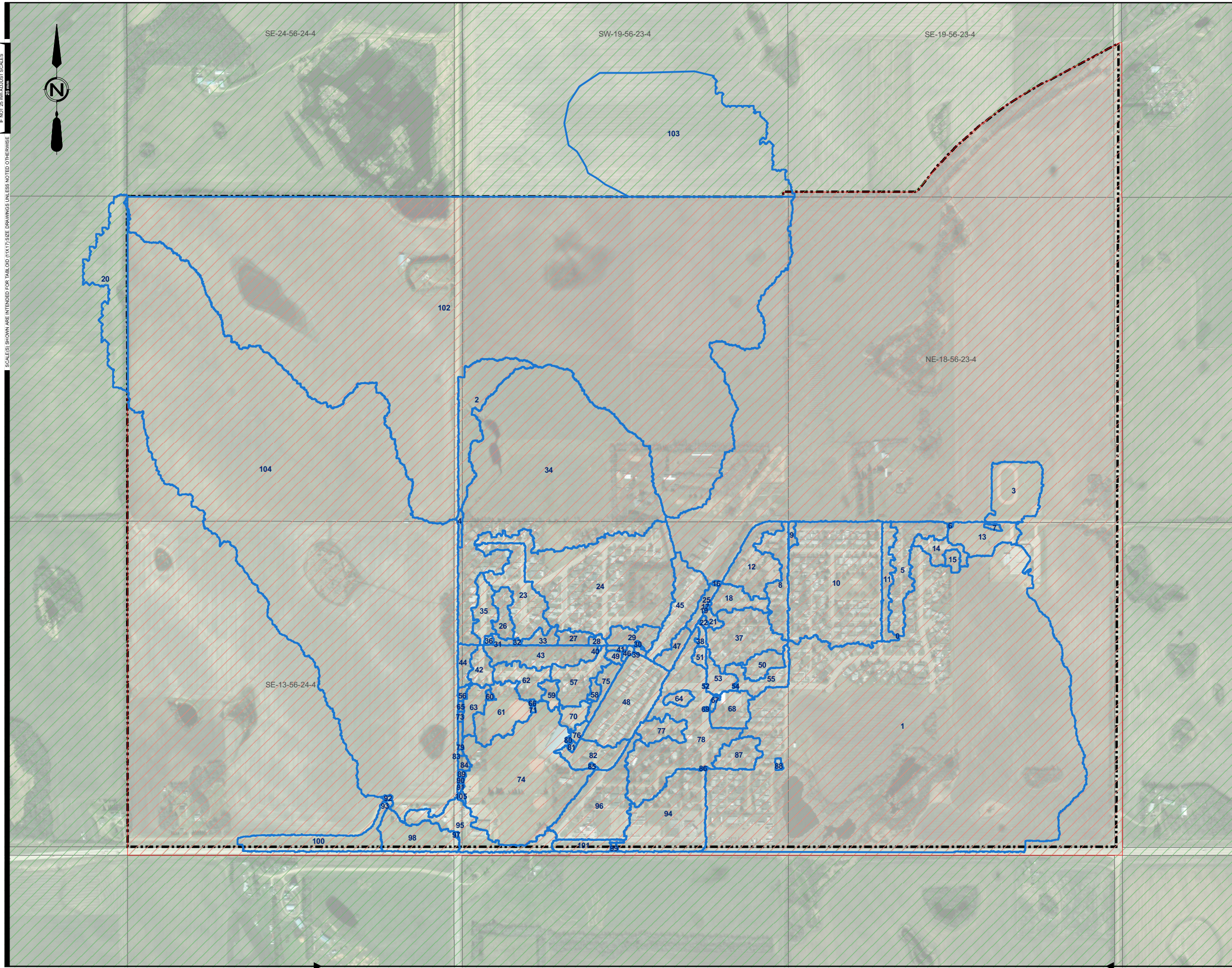
APPENDIX B - LIDAR BOUNDARIES AND CATCHMENT AREAS (FIGURE B-1)

\\s-edm-fs-01\projects\20193459\00_Master_Servicing\Engineering\03:00_Conceptual_Feasibility_Design_Master_Plans\Stormwater\Report\vpf_Stormwater_Master_Plan_Final_20191008.docx

IF NOT AS NOTED OTHERWISE

SCALE(S) SHOWN ARE INTENDED FOR TAB/CID (11X17) SIZE DRAWINGS UNLESS NOTED OTHERWISE

\\s-efm-fs-01\projects\2019\459\02_Master_Servicing\Working_Dwg\010_GIS\ActMap\StormMasterPlan\Figs-4_LiDARBoundaries&CatchmentAreas_11x17.mxd
DATE: 7/5/2019



Legend:





-  1m LiDAR Extent
-  15m LiDAR Extent
-  Catchment Areas
-  Town Boundary



FIGURE No. B-1

TOWN OF BON ACCORD
STORM MASTER PLAN UPDATE

LIDAR BOUNDARIES AND CATCHMENT AREAS

AE PROJECT No.	2019-3459
SCALE	1:9,000
COORD. SYSTEM	NAD 1983 3TM 114
DATE	2019 OCTOBER
REV	
DESCRIPTION	ISSUED FOR FINAL

APPENDIX C - EXISTING MINOR SYSTEM ASSESSMENT - DETAILED CALCULATIONS

\\s-edm-fs-01\projects\20193459\00_Master_Servicing\Engineering\03:00_Conceptual_Feasibility_Design_Master_Plans\Stormwater\Report\vpf_Stormwater_Master_Plan_Final_20191008.docx

ASSOCIATED ENGINEERING ALBERTA LTD.
MUNICIPAL ENGINEERING GROUP
STORM SEWER DESIGN CHART
RATIONAL METHOD FOR CIRCULAR PIPE

LOCATION Edmonton 2018 (COE, 2018)
CLIENT Town of Bon Accord
PROJECT Stormwater Master Plan
PROJECT NO. 2019-3459

INITIAL CONCENTRATION TIME
RETURN PERIOD

COE Standards 5 IDF PARAMETERS:
a= 24.568
b= -0.735
c= 0.0900

DESIGNED BY Lisa Butler
REVISED BY Laurel Richards
PAGE 1 OF 1
DATE DESIGN/CHECK 5-Jul-19

CATCHMENT DATA									PIPE DESIGN DATA											PIPE PROFILE				
CATCHMENT NO.	FROM MH	TO MH	LOCAL AREA (A) ha	RUNOFF COEFF (C)	TC min	RAIN INT. I mm/hr	INCREMENTAL FLOW CIA*0.00278 m³/s	CUMULATIVE FLOW (m³/s)	PIPE TYPE	n	SLOPE (%)	SIZE mm	FLOW AREA m²	WETTED PERIMETER m	HYDRAULIC RADIUS	CAP. m³/s	VEL. m/s	LENGTH m	TIME IN PIPE min	UPSTREAM MH		DROP IN PIPE m	DOWNSTREAM MH	
																				INVERT m	RIM m		INVERT m	RIM m
94	ST03A	ST703	3.20	0.70	5.00	89.08	0.55	0.55	PVC	0.01	0.03	525.00	0.22	1.65	0.13	0.07	0.40	98.60	4.11	697.945	700.626	0.028	697.917	700.598
18	ST715	ST714	0.70	0.73	5.00	89.08	0.13	0.13	VCT	0.01	1.04	200.00	0.03	0.63	0.05	0.03	1.10	35.90	0.54	699.510	702.440	0.375	699.135	702.880
17	ST714	ST713	0.01	0.95	5.00	89.08	0.00	0.13	VCT	0.01	0.29	200.00	0.03	0.63	0.05	0.02	0.60	10.40	0.29	698.960	702.880	0.030	698.930	702.850
19	ST713	ST712	0.01	0.95	5.00	89.08	0.00	0.13	VCT	0.01	0.50	200.00	0.03	0.63	0.05	0.02	0.80	46.80	0.98	698.930	702.850	0.233	698.697	700.410
21	ST712A	ST712	0.10	0.76	5.00	89.08	0.02	0.02	CONC	0.01	1.13	200.00	0.03	0.63	0.05	0.03	1.20	30.40	0.42	699.400	701.160	0.345	699.055	700.410
22	ST712	ST710	0.05	0.94	5.00	89.08	0.01	0.16	AC	0.01	0.63	750.00	0.44	2.36	0.19	0.88	2.00	49.30	0.41	698.697	700.410	0.310	698.387	701.847
37	ST711	ST710	2.00	0.64	5.00	89.08	0.32	0.32	CONC	0.01	0.04	200.00	0.03	0.63	0.05	0.01	0.30	56.80	3.16	698.860	700.410	0.022	698.838	701.847
38	ST710	ST709	0.10	0.65	5.00	89.08	0.02	0.49	CONC	0.01	0.08	750.00	0.44	2.36	0.19	0.32	0.80	53.10	1.11	698.410	701.847	0.043	698.367	701.253
50	ST709A	ST709	0.50	0.56	8.00	73.94	0.06	0.06	CONC	0.01	0.36	300.00	0.07	0.94	0.08	0.06	0.90	122.20	2.26	698.267	700.810	0.434	697.833	701.253
51	ST709	ST705	0.10	0.70	5.00	89.08	0.02	0.57	CONC	0.01	0.33	750.00	0.44	2.36	0.19	0.64	1.50	46.50	0.52	698.385	701.253	0.155	698.230	700.500
55	ST708	ST707	0.70	0.72	5.00	89.08	0.12	0.12	CONC	0.01	0.18	375.00	0.11	1.18	0.09	0.07	0.70	72.10	1.72	698.990	700.370	0.131	698.859	700.680
54	ST707	ST706	0.01	0.95	5.00	89.08	0.00	0.13	CONC	0.01	0.35	375.00	0.11	1.18	0.09	0.10	1.00	50.60	0.84	698.839	700.680	0.175	698.664	700.180
53	ST706	ST705	0.50	0.78	5.00	89.08	0.10	0.22	CONC	0.01	0.30	375.00	0.11	1.18	0.09	0.10	0.90	21.60	0.40	698.644	700.180	0.064	698.580	700.500
52	ST705	ST705A	0.01	0.95	5.00	89.08	0.00	0.79	CONC	0.01	0.37	750.00	0.44	2.36	0.19	0.68	1.60	56.70	0.59	698.240	700.500	0.210	698.030	700.010
68	AE 1	ST705C	0.80	0.53	8.00	73.94	0.09	0.09	PVC	0.01	0.50	300.00	0.07	0.94	0.08	0.07	1.00	17.90	0.30	698.550	699.589	0.089	698.461	699.500
		ST705B					0.00	0.09	PVC	0.01	0.50	300.00	0.07	0.94	0.08	0.07	1.00	23.80	0.40	698.461	699.500	0.118	698.343	699.800
67	ST705B	ST705A	0.05	0.54	8.00	73.94	0.01	0.09	PVC	0.01	0.67	300.00	0.07	0.94	0.08	0.08	1.20	14.30	0.20	698.343	699.800	0.096	698.247	700.010
69	ST705A	ST704_AE	0.01	0.95	5.00	89.08	0.00	0.89	CONC	0.01	0.23	750.00	0.44	2.36	0.19	0.54	1.30	45.00	0.58	698.030	700.010	0.105	697.925	700.224
64	AE 2	ST704	0.20	0.67	5.00	89.08	0.03	0.03	PVC	0.01	0.31	300.00	0.07	0.94	0.08	0.05	0.80	17.80	0.37	699.066	700.631	0.056	699.010	700.575
		ST704A					0.00	0.03	PVC	0.01	0.31	300.00	0.07	0.94	0.08	0.05	0.80	56.10	1.17	699.010	700.575	0.175	698.835	700.400
77	ST704A	ST704_AE	0.60	0.68	5.00	89.08	0.10	0.13	PVC	0.01	0.31	375.00	0.11	1.18	0.09	0.10	0.90	51.20	0.95	698.835	700.400	0.160	698.675	700.224
78	ST704_AE	ST703	4.50	0.69	5.00	89.08	0.77	1.79	CONC	0.01	0.26	750.00	0.44	2.36	0.19	0.57	1.30	101.90	1.31	697.905	700.224	0.263	697.642	700.598
86	ST703	ST702	0.01	0.95	5.00	89.08	0.00	2.35	CONC	0.01	0.03	900.00	0.64	2.83	0.23	0.30	0.50	107.00	3.57	697.542	700.598	0.030	697.512	698.852
87	ST702	ST701	0.70	0.60	5.00	89.08	0.10	2.45	CONC	0.01	0.23	900.00	0.64	2.83	0.23	0.86	1.40	69.20	0.82	697.511	698.852	0.156	697.355	698.869
88	ST701	Natural Area 2	0.04	0.69	5.00	89.08	0.01	2.46	CONC	0.01	0.23	900.00	0.64	2.83	0.23	0.86	1.40	27.60	0.33	697.354	698.869	0.062	697.292	698.807

APPENDIX D - PROPOSED UPGRADES TO EXISTING MINOR SYSTEM - DETAILED CALCULATIONS

\\s-edm-fs-01\projects\20193459\00_Master_Servicing\Engineering\03:00_Conceptual_Feasibility_Design_Master_Plans\Stormwater\Report\vpf_Stormwater_Master_Plan_Final_20191008.docx

ASSOCIATED ENGINEERING ALBERTA LTD.
MUNICIPAL ENGINEERING GROUP
 STORM SEWER DESIGN CHART
 RATIONAL METHOD FOR CIRCULAR PIPE

LOCATION Edmonton 2018 (COE, 2018)
 CLIENT Town of Bon Accord
 PROJECT Stormwater Master Plan
 PROJECT NO. 2019-3459

INITIAL CONCENTRATION TIME
 RETURN PERIOD

COE Standards min
 5 year

IDF PARAMETERS:
 a= 24.568
 b= -0.735
 c= 0.0900

DESIGNED BY Lisa Butler
 REVISED BY Laurel Richards
 PAGE 1 OF 1
 DATE DESIGN/CHECK 5-Jul-19

CATCHMENT DATA									PIPE DESIGN DATA											PIPE PROFILE					
CATCHMENT NO.	FROM MH	TO MH	LOCAL AREA (A) ha	RUNOFF COEFF (C)	TC min	RAIN INT. I mm/hr	INCREMENTAL FLOW CIA*0.00278 m³/s	CUMULATIVE FLOW (m³/s)	PIPE TYPE	n	SLOPE (%)	SIZE mm	SIZE mm	FLOW AREA m²	WETTED PERIMETER m	HYDRAULIC RADIUS	CAP. m³/s	VEL. m/s	LENGTH m	TIME IN PIPE min	UPSTREAM MH		DROP IN PIPE m	DOWNSTREAM MH	
																					INVERT m	RIM m		INVERT m	RIM m
94	S703A	ST703	3.2	0.70	5	89.08	0.555	0.555	PVC	0.013	0.03	1129	1129	1.001	3.547	0.282	0.56	0.60	98.6	2.739	697.945	700.626	0.028	697.917	700.598
18	ST715	ST714	0.7	0.73	5	89.08	0.127	0.127	VCT	0.013	1.04	330	330	0.085	1.035	0.082	0.13	1.50	35.9	0.399	699.510	702.440	0.375	699.135	702.880
17	ST714	ST713	0.007	0.95	5	89.08	0.002	0.128	VCT	0.013	0.29	423	423	0.140	1.328	0.106	0.13	1.00	10.4	0.173	698.960	702.880	0.030	698.930	702.850
19	ST713	ST712	0.009	0.95	5	89.08	0.002	0.130	VCT	0.013	0.50	383	383	0.115	1.204	0.096	0.13	1.20	46.8	0.65	698.930	702.850	0.233	698.697	700.410
21	ST712A	ST712	0.1	0.76	5	89.08	0.019	0.019	CONC	0.013	1.13	200	200	0.031	0.628	0.050	0.03	1.20	30.4	0.422	699.400	701.160	0.345	699.055	700.410
22	ST712	ST710	0.05	0.94	5	89.08	0.012	0.161	AC	0.013	0.63	750	750	0.442	2.356	0.188	0.88	2.00	49.3	0.411	698.697	700.410	0.310	698.387	701.847
37	ST711	ST710	2.0	0.64	5	89.08	0.317	0.317	CONC	0.013	0.04	864	864	0.586	2.713	0.216	0.32	0.60	56.8	1.578	698.860	700.410	0.022	698.838	701.847
38	ST710	ST709	0.1	0.65	5	89.08	0.016	0.494	CONC	0.013	0.08	890	890	0.621	2.795	0.222	0.50	0.90	53.1	0.983	698.410	701.847	0.043	698.367	701.253
50	ST709A	ST709	0.5	0.56	8	73.94	0.058	0.058	CONC	0.013	0.36	300	300	0.071	0.942	0.075	0.06	0.90	122.2	2.263	698.267	700.810	0.434	697.833	701.253
51	ST709	ST705	0.1	0.70	5	89.08	0.017	0.569	CONC	0.013	0.33	750	750	0.442	2.356	0.188	0.64	1.50	46.5	0.517	698.385	701.253	0.155	698.230	700.500
55	ST708	ST707	0.7	0.72	5	89.08	0.125	0.125	CONC	0.013	0.18	461	461	0.167	1.448	0.115	0.13	0.80	72.1	1.502	698.990	700.370	0.131	698.859	700.680
54	ST707	ST706	0.007	0.95	5	89.08	0.002	0.126	CONC	0.013	0.35	409	409	0.131	1.285	0.102	0.13	1.00	50.6	0.843	698.839	700.680	0.175	698.664	700.180
53	ST706	ST705	0.5	0.78	5	89.08	0.097	0.223	CONC	0.013	0.30	516	516	0.209	1.622	0.129	0.22	1.10	21.6	0.327	698.644	700.180	0.064	698.580	700.500
52	ST705	ST705A	0.007	0.95	5	89.08	0.002	0.793	CONC	0.013	0.37	798	798	0.500	2.507	0.200	0.80	1.60	56.7	0.591	698.240	700.500	0.210	698.030	700.010
68	AE 1	ST705C	0.8	0.53	8	73.94	0.087	0.087	PVC	0.013	0.50	333	333	0.087	1.046	0.083	0.09	1.10	17.9	0.271	698.550	699.589	0.089	698.461	699.500
		ST705B					0.000	0.087	PVC	0.013	0.50	333	333	0.087	1.046	0.083	0.09	1.10	23.8	0.361	698.461	699.500	0.118	698.343	699.800
67	ST705B	ST705A	0.05	0.54	8	73.94	0.006	0.093	PVC	0.013	0.67	319	319	0.080	1.002	0.080	0.09	1.20	14.3	0.199	698.343	699.800	0.096	698.247	700.010
69	ST705A	ST704_AE	0.007	0.95	5	89.08	0.002	0.888	CONC	0.013	0.23	906	906	0.645	2.846	0.226	0.89	1.40	45.0	0.536	698.030	700.010	0.105	697.925	700.224
64	AE 2	ST704	0.2	0.67	5	89.08	0.033	0.033	PVC	0.013	0.31	300	300	0.071	0.942	0.075	0.05	0.80	17.8	0.371	699.066	700.631	0.056	699.010	700.575
		ST704A					0.000	0.033	PVC	0.013	0.31	300	300	0.071	0.942	0.075	0.05	0.80	56.1	1.169	699.010	700.575	0.175	698.835	700.400
77	ST704A	ST704_AE	0.6	0.68	5	89.08	0.101	0.134	PVC	0.013	0.31	422	422	0.140	1.327	0.106	0.13	1.00	51.2	0.853	698.835	700.400	0.160	698.675	700.224
78	ST704_AE	ST703	4.5	0.69	5	89.08	0.769	1.791	CONC	0.013	0.26	1158	1158	1.053	3.637	0.289	1.80	1.80	101.9	0.944	697.905	700.224	0.263	697.642	700.598
86	ST703	ST702	0.01	0.95	5	89.08	0.002	2.348	CONC	0.013	0.03	1940	1940	2.956	6.095	0.485	2.35	0.80	107.0	2.229	697.542	700.598	0.030	697.512	698.852
87	ST702	ST701	0.7	0.60	5	89.08	0.104	2.452	CONC	0.013	0.23	1343	1343	1.417	4.219	0.336	2.50	1.80	69.2	0.641	697.511	698.852	0.156	697.355	698.869
88	ST701	Natural Area 2	0.04	0.69	5	89.08	0.007	2.459	CONC	0.013	0.23	1335	1335	1.400	4.194	0.334	2.46	1.80	27.6	0.256	697.354	698.869	0.062	697.292	698.807

APPENDIX E - EXISTING MAJOR SYSTEM ASSESSMENT - DETAILED CALCULATIONS

\\s-edm-fs-01\projects\20193459\00_Master_Servicing\Engineering\03:00_Conceptual_Feasibility_Design_Master_Plans\Stormwater\Report\vpf_Stormwater_Master_Plan_Final_20191008.docx

Rational Method Calculations - Existing Major System

Contributing Catchments	C1	C2	C3	C4	C5	A1	A2	A3	A4	A5	C	Length (m)	Slope (m/m)	Tc (min)	I (mm/hr)	Area (m ²)	Area (ha)	Incremental Design Flow 1:100 Year (m ³ /s)	Cumulative Design Flow 1:100 Year (m ³ /s)	Design Flow into Culvert 1:100 Year (m ³ /s)	Existing Culvert Size (mm)	Full Flow Capacity of Culvert 1:100 Year (m ³ /s)	Sufficient Capacity?	Proposed Size (mm)
16 Culvert 24	0.84					230					0.84	24	0.04	5	188.51	230	0.02	0.01	0.01	0.01	600	0.05	Yes	N/A
12, 8 Culvert 14	0.91	0.85				14938	12114				0.88	299	0.05	5	188.39	27052	2.71	1.25	1.25	1.25	600	0.23	No	1200
9, 10 Culvert 13	0.84	0.68				1089	68172				0.68	23	0.01	8	161.01	69261	6.93	2.11	3.36	3.36	700	0.35	No	1650
11, 5 Culvert 12	0.78	0.69				7227	15555				0.72	300	0.05	5	187.78	22782	2.28	0.85	4.22	4.22	600	0.23	No	1800
6, 7, 13, 14 Culvert 10 Culvert 11	0.84	0.58	0.33	0.62		122	482	10903	5178		0.43	23	0.01	8	161.01	16685	1.67	3.22E-01	4.54	2.27 2.27	700 700	0.20 0.20	No No	1800 1800
25, 47 Culvert 15	0.77	0.77				2784	3976				0.77	248	0.04	5	188.51	6760	0.68	0.27	0.27	0.27	500	0.23	No	600
45, 39 Culvert 4	0.74	0.88				14484	524				0.74	276	0.04	5	188.29	15008	1.50	0.58	0.86	0.86	500	0.23	No	900
30, 29 Culvert 2	0.72	0.65				176	5605				0.65	130	0.05	8	161.01	5781	0.58	0.17	1.03	1.03	400	0.13	No	900
28, 27, 33, 24, 23 Culvert 1	0.76	0.66	0.66	0.69	0.75	954	2822	2743	79189	18453	0.70	496	0.04	8	161.29	104161	10.42	3.27	4.29	4.29	500	0.23	No	1650
26, 32, 31, 36 Culvert 35	0.63	0.72	0.61	0.85		5033	280	988	459		0.65	145	0.05	8	161.01	6760	0.68	0.20	4.49	4.49	500	0.23	No	1650
82, 81, 80, 76 Culvert 6	0.68	0.7	0.13	0.53		8501	400	182	1295		0.65	162	0.05	8	161.01	10378	1.04	0.30	0.30	0.30	600	0.17	No	750
75, 49 Culvert 5	0.69	0.6				3894	1149				0.67	193	0.05	8	161.01	5043	0.50	0.15	0.45	0.45	400	0.06	No	900
46, 41 Culvert 3	0.92	0.9				679	657				0.91	70	0.08	5	188.51	1336	0.13	0.06	0.52	0.52	400	0.06	No	1050
40, 43 Culvert 36	0.95	0.69				106	13125				0.69	294	0.06	8	161.01	13231	1.32	0.41	0.93	0.93	400	0.06	No	1200
42, 56, 44 Culvert 33	0.78	0.73	0.74			4569	818	3507			0.76	143	0.06	5	188.51	8894	0.89	0.35	1.28	1.28	600	0.20	No	1350
85 Culvert 8	0.9					238					0.90	25	0.07	5	188.51	238	0.02	0.01	0.01	0.01	500	0.20	Yes	N/A
99, 101 Culvert 30	0.95	0.95				342	4439				0.95	178	0.04	5	188.51	4781	0.48	0.24	0.24	0.24	300	0.05	No	600
96, 74 Culvert 7	0.81	0.36				26740	70156				0.48	444	0.04	8	164.55	96896	9.69	2.14	2.38	2.38	300	0.05	No	1350
100, 98 Culvert 20 Culvert 19	0.48	0.81				15482	13785				0.64	550	0.07	7	170.67	29267	2.93	0.88	0.88	0.88 0.88	400 400	0.16 0.16	No No	900 900
93, 95 Culvert 26 Culvert 21	0.15	0.78				239	16201				0.77	439	0.03	8	162.99	16440	1.64	0.57	0.57	0.29 0.29	600 600	0.53 0.53	Yes Yes	N/A N/A
92, 104, 20 Culvert 16	0.13	0.14	0.125			261	557817	29870			0.14	1724	0.04	21	103.04	587948	58.79	2.34	2.92	2.92	600	0.40	No	1350
91, 105 Culvert 18	0.87	0.69				274	387				0.76	55	0.03	5	188.51	661	0.07	0.03	0.03	0.03	400	0.13	Yes	N/A
90 Culvert 31		0.83				231					0.83	17	7	5.0	188.51	231	0.02	0.01	0.04	0.04	400	0.13	Yes	N/A
89, 84 Culvert 32	0.72	0.75				324	968				0.74	56	0.05	5.0	188.51	1292	0.13	0.05	0.09	0.16	400	0.13	No	450

APPENDIX F - FUTURE MAJOR SYSTEM ASSESSMENT - DETAILED CALCULATIONS

\\s-edm-fs-01\projects\20193459\00_Master_Servicing\Engineering\03:00_Conceptual_Feasibility_Design_Master_Plans\Stormwater\Report\vpf_Stormwater_Master_Plan_Final_20191008.docx

Rational Method Calculations - Future Major System

Contributing Catchments	C1	C2	C3	C4	C5	A1	A2	A3	A4	A5	C	Length (m)	Slope (m/m)	Tc (min)	I (mm/hr)	Area (m ²)	Area (ha)	Incremental Design Flow 1:100 Year (m ³ /s)	Cumulative Design Flow 1:100 Year (m ³ /s)	Design Flow into Culvert 1:100 Year (m ³ /s)	Existing Culvert Size (mm)	Full Flow Capacity of Culvert 1:100 Year (m ³ /s)	Sufficient Capacity?	Proposed Size (mm)
16 Culvert 24	0.84					230					0.84	24	0.04	5	188.51	230	0.02	0.01	0.01	0.01	600	0.05	Yes	N/A
12, 8 Culvert 14	0.91	0.85				14938	12114				0.88	299	0.05	5	188.39	27052	2.71	1.25	1.25	1.25	1200	1.48	Yes	N/A
9, 10 Culvert 13	0.84	0.68				1089	68172				0.68	23	0.01	8	161.01	69261	6.93	2.11	3.36	3.36	1650	3.46	Yes	N/A
11, 5 Culvert 12	0.78	0.69				7227	15555				0.72	300	0.05	5	187.78	22782	2.28	0.85	4.22	4.22	1800	4.36	Yes	N/A
6, 7, 13, 14 Culvert 10 Culvert 11	0.85	0.63	0.6	0.73		122	482	10903	5178		0.64	23	0.01	8	161.01	16685	1.67	4.80E-01	4.70	2.35	1800	2.47	Yes	N/A
25, 47 Culvert 15	0.77	0.77				2784	3976				0.77	248	0.04	5	188.51	6760	0.68	0.27	0.27	0.27	600	0.37	Yes	N/A
45, 39 Culvert 4	0.74	0.88				14484	524				0.74	276	0.04	5	188.29	15008	1.50	0.58	0.86	0.86	900	1.09	Yes	N/A
30, 29 Culvert 2	0.72	0.65				176	5605				0.65	130	0.05	8	161.01	5781	0.58	0.17	1.03	1.03	900	1.09	Yes	N/A
28, 27, 33, 24, 23 Culvert 1	0.76	0.66	0.66	0.69	0.75	954	2822	2743	79189	18453	0.70	496	0.04	8	161.29	104161	10.42	3.27	4.29	4.29	1650	5.5	Yes	N/A
26, 32, 31, 36 Culvert 35	0.63	0.72	0.61	0.85		5033	280	988	459		0.65	145	0.05	8	161.01	6760	0.68	0.20	4.49	4.49	1650	5.5	Yes	N/A
82, 81, 80, 76 Culvert 6	0.68	0.7	0.13	0.53		8501	400	182	1295		0.65	162	0.05	8	161.01	10378	1.04	0.30	0.30	0.30	750	0.31	Yes	N/A
75, 49 Culvert 5	0.69	0.6				3894	1149				0.67	193	0.05	8	161.01	5043	0.50	0.15	0.45	0.45	900	0.5	Yes	N/A
46, 41 Culvert 3	0.92	0.9				679	657				0.91	70	0.08	5	188.51	1336	0.13	0.06	0.52	0.52	1050	0.76	Yes	N/A
40, 43 Culvert 36	0.95	0.69				106	13125				0.69	294	0.06	8	161.01	13231	1.32	0.41	0.93	0.93	1200	1.09	Yes	N/A
42, 56, 44 Culvert 33	0.78	0.73	0.74			4569	818	3507			0.76	143	0.06	5	188.51	8894	0.89	0.35	1.28	1.28	1350	1.73	Yes	N/A
85 Culvert 8	0.9					238					0.90	25	0.07	5	188.51	238	0.02	0.01	0.01	0.01		0.20	Yes	N/A
99, 101 Culvert 30	0.95	0.95				342	4439				0.95	178	0.04	5	188.51	4781	0.48	0.24	0.24	0.24	600	0.31	Yes	N/A
96, 74 Culvert 7	0.81	0.36				26740	70156				0.48	444	0.04	8	164.55	96896	9.69	2.14	2.38	2.38	1350	2.65	Yes	N/A
100, 98 Culvert 20 Culvert 19	0.84	0.91				15482	13785				0.87	550	0.07	7	170.67	29267	2.93	1.21	1.21	1.21	900	1.36	Yes	N/A
93, 95 Culvert 26 Culvert 21	0.75	0.78				239	16201				0.78	439	0.03	8	162.99	16440	1.64	0.58	0.58	0.29	600	0.53	Yes	N/A
92, 104, 20 Culvert 16	0.75	0.65	0.125			261	557817	29869.508			0.62	1724	0.04	21	103.04	587948	58.79	10.49	11.07	11.07	1350	0.40	No	3 1500 mm dia
91, 105 Culvert 18	0.87	0.69				274	387				0.76	55	0.03	5	188.51	661	0.07	0.03	0.03	0.03	400	0.13	Yes	N/A
90 Culvert 31	0.83					231					0.83	17	7	5.0	188.51	231	0.02	0.01	0.04	0.04	400	0.13	Yes	N/A
89, 84 Culvert 32	0.72	0.75				324	968				0.74	56	0.05	5.0	188.51	1292	0.13	0.05	0.09	0.16	450	0.17	Yes	N/A

APPENDIX G - PRELIMINARY COST ESTIMATE

\\s-edm-fs-01\projects\20193459\00_Master_Servicing\Engineering\03:00_Conceptual_Feasibility_Design_Master_Plans\Stormwater\Report\vpf_Stormwater_Master_Plan_Final_20191008.docx

Preliminary Cost Estimate

Item No.	Description	Quantity	Unit	Unit Price	Extension
Proposed Minor System Upgrades					
1.0	Remove and Replace Existing Storm Pipe				
1.1	S703A to ST703 (1200 mm diameter)	99	m	\$ 1,500	\$ 148,000
1.2	ST715 to ST714 (375 mm diameter)	36	m	\$ 1,500	\$ 54,000
1.3	ST714 to ST713 (450 mm diameter)	10	m	\$ 1,500	\$ 16,000
1.4	ST713 to ST712 (450 mm diameter)	47	m	\$ 1,500	\$ 71,000
1.5	ST711 to ST710 (900 mm diameter)	57	m	\$ 1,500	\$ 86,000
1.6	ST710 to ST709 (900 mm diameter)	53	m	\$ 1,500	\$ 80,000
1.7	ST708 to ST707 (525 mm diameter)	72	m	\$ 1,500	\$ 109,000
1.8	ST707 to ST706 (450 mm diameter)	51	m	\$ 1,500	\$ 76,000
1.9	ST706 to ST705 (525 mm diameter)	22	m	\$ 1,500	\$ 33,000
1.10	ST705 to ST705A (900 mm diameter)	57	m	\$ 1,500	\$ 86,000
1.11	AE_1 to ST705C (375 mm diameter)	18	m	\$ 1,500	\$ 27,000
1.12	ST705C to ST705B (375 m diameter)	24	m	\$ 1,500	\$ 36,000
1.13	ST705B to ST705A (375 mm diameter)	14	m	\$ 1,500	\$ 22,000
1.14	ST705A to ST704 AE (1050 mm diameter)	45	m	\$ 1,500	\$ 68,000
1.15	ST704A to ST704 AE (450 mm diameter)	51	m	\$ 1,500	\$ 77,000
1.16	ST704 AE to ST703 (1200 mm diameter)	102	m	\$ 1,500	\$ 153,000
1.17	ST703 to ST702 (1950 mm diameter)	107	m	\$ 1,500	\$ 161,000
1.18	ST702 to ST701 (1350 mm diameter)	69	m	\$ 1,500	\$ 104,000
1.19	ST701 to Natural Area 2 (1350 mm diameter)	28	m	\$ 1,500	\$ 42,000
Sub-Total - Proposed Existing Minor Upgrades					\$ 1,450,000
Proposed Major System Upgrades					
2.0	Remove and Replace Existing Culverts				
2.1	Culvert 14 (1200 mm diameter)	23	m	\$ 1,500	\$ 34,000
2.2	Culvert 13 (1650 mm diameter)	19	m	\$ 1,500	\$ 29,000
2.3	Culvert 12 (1800 mm diameter)	13	m	\$ 1,500	\$ 20,000
2.4	Culvert 10 (1800 mm diameter)	8	m	\$ 1,500	\$ 13,000
2.5	Culvert 11 (1800 mm diameter)	8	m	\$ 1,500	\$ 13,000
2.6	Culvert 15 (600 mm diameter)	19	m	\$ 1,500	\$ 29,000
2.7	Culvert 4 (900 mm diameter)	13	m	\$ 1,500	\$ 20,000
2.8	Culvert 2 (900 mm diameter)	18	m	\$ 1,500	\$ 28,000
2.9	Culvert 1 (1650 mm diameter)	17	m	\$ 1,500	\$ 26,000
3.0	Culvert 35 (1650 mm diameter)	20	m	\$ 1,500	\$ 31,000
3.1	Culvert 6 (750 mm diameter)	12	m	\$ 1,500	\$ 18,000
3.2	Culvert 5 900 mm diameter)	7	m	\$ 1,500	\$ 11,000
3.3	Culvert 3 (1050 mm diameter)	23	m	\$ 1,500	\$ 34,000
3.4	Culvert 36 (1200 mm diameter)	20	m	\$ 1,500	\$ 30,000
3.5	Culvert 33 (1350 mm diameter)	17	m	\$ 1,500	\$ 25,000
3.6	Culvert 30 (600 mm diameter)	81	m	\$ 1,500	\$ 121,000
3.7	Culvert 7 (1350 mm diameter)	13	m	\$ 1,500	\$ 21,000
3.8	Culvert 20 (900 mm diameter)	26	m	\$ 1,500	\$ 39,000
3.9	Culvert 19 (900 mm diameter)	33	m	\$ 1,500	\$ 49,000
4.0	Culvert 16 (1350 mm diameter)	13	m	\$ 1,500	\$ 20,000
4.1	Culvert 32 (450 mm diameter)	10	m	\$ 1,500	\$ 15,000
Sub-Total - Proposed Existing Major Upgrades					\$ 630,000
Total - Proposed Existing Minor and Major Upgrades					\$ 2,080,000
Engineering and Contingency (50%)					\$ 1,040,000
Preliminary Cost Estimate Total					\$ 3,120,000

TOWN OF BON ACCORD
COUNCIL BRIEFING REPORT

Meeting:	Council Briefing Committee Meeting
Meeting Date:	June 29 th , 2022
Presented by:	Jodi Brown Town Manager/CAO
Title:	Procedural Bylaw Draft R2
Agenda Item No.	4.1

The Procedural Bylaw is currently under review.

Following the May 19th Council Briefing Committee Meeting, administration has updated the Procedural Bylaw to address additional questions or areas that required further clarification including all the area highlighted in yellow in the enclosed draft.

Note, Municipal Affairs has confirmed that the Council Meeting agenda template should be included in the Procedural Bylaw. Hence, administration has revised the Procedural Bylaw draft accordingly.

STRATEGIC ALIGNMENT

Values Statement – Professionalism:

- Administration and Council manage the affairs of Bon Accord in a competent, reliable manner, to maintain a safe and prosperous community to work and live.

COSTS/SOURCES OF FUNDING

N/A

**TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01**

**A BYLAW OF THE TOWN OF BON ACCORD, IN THE PROVINCE OF ALBERTA, TO REGULATE THE PROCEDURE
AND CONDUCT OF COUNCIL AND COUNCIL COMMITTEE MEETINGS**

WHEREAS, the Council of the Town of Bon Accord considers it expedient and desirable for effective governance to regulate the procedure and conduct of council, councillors and others attending council and council committee meetings in the Town of Bon Accord.

NOW THEREFORE, the Council of the Town of Bon Accord, in the Province of Alberta, duly enacts as follows:

This bylaw shall be cited as the **“Procedural Bylaw”** of the Town of Bon Accord

1. DEFINITIONS

- 1.1 “Act” means the Municipal Government Act, R.S.A. 2000, c. M-26, any regulations thereunder, and any amendments or successor legislation thereto.
- 1.2 “Councillor” means a member of Council including the Mayor elected pursuant to the provisions of the Local Authorities Act
- 1.3 “Delegation” means any person that has permission of council to appear before council or a committee of council to provide pertinent information and views about the subject before council or council committee.
- 1.4 “CAO” means the Chief Administrative Officer or his/her delegate, for the Municipality.
- 1.5 “Closed Session” is a council or committee session which is held in private and may include any person or persons invited to attend by Council. Matters discussed in closed session are confidential until discussed in a public session as per the MGA and FOIP Act.
- 1.6 “Member at Large” means a member of the public appointed by council to a committee of council.
- 1.7 “Municipality” means the Town of Bon Accord, a municipal corporation of the Province of Alberta and includes the area contained within the boundaries of the Municipality.
- 1.8 “Notice of Motion” is the means by which a Councillor may bring a topic before Council.
- 1.9 “Point of Order” means an infraction of the rules or improper decorum in speaking.
- 1.10 “Point of Privilege” means that an interruption may occur only if necessary.
- 1.11 “Presiding Officer” means the Mayor or other Councillor as appointed by the Mayor, or in the absence of the Mayor or Deputy Mayor, Council may appoint a Presiding Officer.
- 1.12 “Special Resolution” is a resolution passed by a two-thirds majority of all Council members or two thirds of all members of a Committee.

**TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01**

2. APPLICATION

- 2.1 This Bylaw shall govern the proceedings of Council and Committees established by Council and shall be binding upon all Committee members whether Council or Members at Large.
- 2.2 When any matters relating to the meeting procedures is not addressed in this Bylaw, the law of the Government of Alberta shall be followed and in such cases the decision of the Mayor or other presiding officer shall be final and accepted without debate.

3. SEVERABILITY

- 3.1 If any portion of this bylaw is declared invalid by a court of competent jurisdiction, then the invalid portion must be severed, and the remainder of the bylaw is deemed valid.

4. DEPUTY MAYOR

- 4.1 The position of Deputy Mayor shall be twelve (12) months in duration, or as otherwise directed as Council and each member of Council may serve one term, to be determined at the first organizational meeting following the election, or as required.

5. MEETINGS

- 5.1 The regular meetings of council shall be established by resolution of Council at its annual organizational meeting.
- 5.2 Regular Meetings of Council will be held on the 1st and 3rd Tuesday of each month, unless otherwise posted. The 1st meeting of the month shall commence at 7pm and stands to adjourn no later than 10:30pm unless Council passes a motion to extend the meeting by unanimous consent. Such a motion must be passed no later than 10:00pm. The 2nd meeting of the month shall commence at 8:30am and stand to adjourn no later than 12pm unless Council passes a motion to extend the meeting by unanimous consent. Such a motion must be passed no later than 11:30am.
- 5.3 As soon as there is a Quorum of Council after the hour fixed for the meeting, the presiding officer must take the chair and begin the meeting.
- 5.4 Unless a Quorum is present within thirty (30) minutes after the time appointed for the meeting, the meeting will stand adjourned until the next regular meeting date or until a Special Meeting is called to deal with the matters intended to be dealt with at the adjourned meeting. The Recording Secretary shall record the names of the Members of Council present at the expiration of the 30 minutes time limit.
- 5.5 Council may change the time, date or location of any meeting by Special Resolution and any Committees may change the time, date or location of any of its meetings provided that in both cases at least twenty-four (24) hours notice of the change is given to the public.
- 5.6 Despite the above 5.5 the Mayor may call a Council meeting on shorter notice and without providing notice to the public provided all Council Members are notified of the meeting and two-thirds of Council give written consent to hold the meeting before the meeting begins. No business other than that stated in the notice shall be considered at any meeting described in this Section unless all the Members of Council are present, in which case, by unanimous consent, any other business may be transacted.
- 5.7 The regular meetings of council shall be voice recorded for the purpose of minute preparation.

**TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01**

- 5.8 The meetings of council committees shall be established by resolution of each committee and the public must be given notice or advertised as required by the provisions of the Municipal Government Act.
- 5.9 The Mayor may appoint another member of Council as Presiding Officer. The appointment must include a specified period of time which shall not exceed eight (8) consecutive weeks if the Mayor is absent.

6. GENERAL PROCEEDINGS OF MEETINGS

- 6.1 Council must vote to adopt the agenda prior to transacting other business and may:
 - 6.1.1 add new items to the agenda but only by Special Resolution; or
 - 6.1.2 delete any matter from the agenda but only by Special Resolution.
- 6.2 The minutes of each meeting must be circulated to each Member of Council prior to the meeting at which they are to be adopted. Debate on the minutes of a previous meeting is limited, to ensure that the minutes are accurate. If there are errors or omissions, Council must:
 - 6.2.1 pass a resolution to amend the minutes; and
 - 6.2.2 adopt the minutes as amended and if there are not errors or omissions, council must adopt the minutes as circulated.
- 6.3 Delegations appearing before council may be addressed by any Member of Council through the Presiding Officer, by asking the delegation or the Chief Administration Office relevant questions but may not debate the matter or the answers. The presentation by a delegation may only be:
 - 6.3.1 received as information without debate;
 - 6.3.2 referred without debate to a Committee or the Chief Administrative Officer for a report, or debated if a Special Resolution is passed to allow a motion to be made without notice;
 - 6.3.3 limited to 15 minutes unless there is a Special Resolution to extend the allotted time.
- 6.4 Reports from the Chief Administrative Officer or other management personnel which request a decision by Council may be debated and Council may:
 - 6.4.1 vote on the request, or
 - 6.4.2 refer the request to a Committee or the Chief Administrative Officer for further investigation and report.
- 6.5 Any Councilor may make a request for information to be provided to Council on any matter within the municipality's jurisdiction. The Chief Administrative Officer or other management personnel will provide an answer to the inquiry at the next Council meeting or, if that is not possible will provide a progress report indicating when the answer to the inquiry may be expected.
- 6.6 Every motion or resolution shall be stated clearly by the mover and when duly moved shall be open for consideration. After a resolution has been stated or read, it shall be deemed to be in possession of Council, but may be withdrawn by unanimous consent of the Council members present. Discussion on any motion will be limited to ten (10) minutes and at that time the Presiding Officer will call for a vote on that motion by the Members of Council present.

**TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01**

- 6.7 Any member of Council desiring to speak shall address the remarks to the Presiding Officer, by way of hand gesture or by saying Mr. Mayor in a manner that does not interrupt conversation already in progress, confine themselves to the question and avoid personality. Should more than one-member desire to speak at the same time, the Presiding Officer shall determine who is entitled to the floor. Members of Council wishing to speak on a matter during the meeting must indicate their intention by raising their hand and any Member of Council present via telephone, shall address the Presiding Officer, by stating "I wish to speak on the matter at hand" and being recognized by the Presiding Officer. Each Council member should not speak more than once until every Member of Council has had the opportunity to speak except in the explanation of a material part of the speech which may have been misunderstood or in reply, to close debate, after everyone else wishing to speak has spoken.

7. CONDUCT OF MEETINGS

- 7.1 Each member or delegation, as the case may be, shall address the Presiding Officer but shall not speak until recognized by the Presiding Officer.
- 7.2 A motion does not require to be seconded.
- 7.3 Unless otherwise specifically provided in this Procedure Bylaw the following motions are debatable by Council:
- 7.3.1 a motion arising out of any matter or thing included in the agenda for the Council meeting;
 - 7.3.2 a motion to postpone or refer;
 - 7.3.3 a motion for adoption of, rejection of, referral back or further consideration of a report to council, or a motion arising out of any matter dealt with in a report to Council;
 - 7.3.4 a motion for the second or a motion for the third reading of a Bylaw;
 - 7.3.5 a motion for an appointment or dismissal of a committee member, or referral to a committee of any matter before the Council;
 - 7.3.6 a motion for amendment to any Bylaw properly before the Council, or to any matter arising directly out of a Bylaw properly before the Council.
- 7.4 Any matter of meeting conduct, which is not herein provided for, shall be determined in accordance with "Roberts Rule of Order".
- 7.5 Where a question under consideration contains distinct propositions, the vote upon each proposition shall be taken separately when any member so requests or when the Presiding Officer so directs.
- 7.6 Whenever the Presiding Officer is of the opinion that a motion is contrary to the rules and privileges of council, he/she shall inform the member thereof immediately, before putting the question, and shall cite his/her reasons applicable to the case without argument or comment.
- 7.7 In all cases not provided for in the proceedings of the council, a majority of council shall determine to uphold the ruling of the Presiding Officer or not as the case may be.
- 7.8 This bylaw shall not be repealed, amended or suspended except so far as the terms thereof themselves permit unless it is repealed, amended or suspended:
- a) by a bylaw unanimously passed at a regular or special meeting of the Council at which all members thereof are present; or

**TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01**

- b) by a bylaw passed at a regular meeting of Council pursuant to a notice in writing given and openly announced at the preceding meeting of the council and setting out the terms of the substantial effect of the proposed bylaw.

8.0 ELECTRONIC MEETING ATTENDANCE

- 8.1 The Presiding Officer cannot use electronic means to attend a Regular Meeting of Council.
- 8.2 Electronic means cannot be used for Special Meeting of Council.
- 8.3 Quorum must be attained through physical presence at the meeting, additional members may attend through electronic means.
- 8.4 Use of attendance through electronic means is being provided to allow for periodic flexibility, attending in person must be done so at a minimum of every third meeting.
- 8.5 Electronic attendance will be conducted through the use of video conferencing, secure platforms and telephone.
- 8.6 An effective method of data transfer must be available, if attending electronically, for review and voting on bylaws, ASP's, and other documents that require council review.
- 8.7 Should connectivity of electronic means cease to exist at any point during the meeting, the attendee will be deemed absent for that portion of the meeting, just as the case when attending in person.
- 8.8 Closed Session items cannot be discussed through electronic means.
- 8.9 When attending electronically, the attendee must obtain access to the meeting material prior to the start of the meeting through a secure means.
- 8.10 The attendee must be connected prior to the meeting being called to order.
- 8.11 Should the electronically connected member be found to be out of order, per items 11.1 and 11.2 of this bylaw, the member connection will be terminated.
- 8.12 Notwithstanding sections 8.1, 8.2, 8.3, 8.4, and 8.8 in extenuating circumstances, all meetings may be held and attended via electronic means and shared to the public via the internet. If these platforms fail or are interrupted without the ability to restore service, the meeting will be adjourned.
- 8.13 Attendees are expected to act and dress as though they are attending in person and ensure no background noise that will interfere with the meeting.

9.0 AGENDAS

- 9.1 The agenda for each regular and special meeting shall be prepared by the CAO and emailed, together with copies of all pertinent correspondence, statements and reports to Council by the end of the day on the Friday prior to each regular or Special meeting. In order to do so, the CAO shall receive all documentation prior to 4:00 pm on the Wednesday preceding the Council meeting.
- 9.2 The agenda and support materials shall be deemed to be acceptable when the agenda is adopted at the meeting.
- 9.3 The business intended to be dealt with shall be stated in an agenda per the Council Agenda policy.
- 9.4 The order of business established in the Council Agenda Policy shall apply unless altered by the Presiding Officer with no objection from members, or otherwise determined by a majority vote of the members present, and the vote upon a matter of priority of business shall be decided without debate.

**TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01**

- 9.5 Standing Committees of Council shall be established and governed by policy or bylaw approved by council. Where appropriate authority is delegated to a Standing committee, such committee and its mandate shall be established by bylaw.
- 9.6 Criteria for any written communication intended for Council or a Committee which reached the Chief Administrative Officer must:
 - 9.6.1 be legible and coherent
 - 9.6.2 be signed by at least one person who provides a printed name and address
 - 9.6.3 be on paper
 - 9.6.4 not be libelous, impertinent or improper.
- 9.7 If the requirements of Section 9.6 are not met the Chief Administrative Officer may file the communication unless it is deemed improper, in which case the Chief Administrative Officer must summarize the communication and inform Council that it is being withheld.

10.0 CLOSED SESSIONS

- 10.0 Matters to be discussed which are within one of the categories of information referred to in Section 217 of the Municipal Government Act (MGA), as amended or replaced from time to time, may be considered at a closed session Meeting or portion of a meeting.
- 10.1 Council or Committee has no power at a closed session to pass any Bylaw or resolution apart from the resolution necessary to revert back to an open meeting.
- 10.2 It is the responsibility of each member to ensure closed session duties are adhered to when attending virtually to avoid any confidentiality breaches or conflicts.

11.0 MAINTAINING ORDER IN COUNCIL

Order in Council – Council

Members of Council shall not:

- 11.1 use offensive words or un-parliamentary language in the meeting;
- 11.2 disobey the rules of the meeting or decision of the Presiding Officer or of Members of Council on questions of order or practice; or upon the interpretation of the rules of the meeting;
- 11.3 leave their seat or make any noise or disturbance while a vote is being taken and the result is declared;
- 11.4 interrupt a Member of Council while speaking, except to raise a Point of Order or Question of Privilege;
- 11.5 pass between a Member of Council who is speaking and the Presiding Officer;
- 11.6 influence or communicate with any municipal employees except the Chief Administrative Officer or administrative personnel involved with the committee of which they are members; any other communication or inquiries must be through the Chief Administrative Officer;
- 11.7 Members of council who persist in a breach of the foregoing section 11, after having been called to order by the Presiding Officer, may, at the discretion of the Presiding Officer, be asked to provide a public apology;
- 11.8 A member of Council who wishes to leave the meeting prior to adjournment shall so advise the Presiding Officer and the time of departure and return shall be noted in the minutes.

**TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01**

Order in Council – Public

- 11.9 Only Councilors, the chief administrative officer and those individuals authorized by the Chief Administrative Officer may be present to address council.
- 11.10 No person in the gallery or on the floor of council chambers shall cause any disturbance, interrupt any speaker or interfere with the actions of council. The Presiding Officer may call to order any person who has created a disturbance and may expel that person from council chambers.

12. NOTICE OF MOTION

- 12.1 Council members may bring forward a notice of motion as an item on the agenda of a regular Council meeting. Once the Motion is stated, it will be recorded in the meeting minutes. A Notice of Motion must give sufficient detail so that the subject of the motion and any proposed action can be determined and should be used to give notice when an extended period of time is advisable prior to considering a subject.
- 12.2 A written copy of the Notice of Motion shall be provided to the CAO prior to the meeting's adjournment.
- 12.3 The Notice of Motion will be placed on the next regular Council Meeting agenda that the elected official who made the Notice of Motion is present, to vote whether the matter will proceed.
- 12.4 Once approved by Council, a Notice of Motion given at a regular Council meeting will be addressed in a time frame not beyond the end of the third month from when it was presented, unless Council directs differently.
- 12.5 A Notice of Motion cannot be made at a special Council meeting. 12.6 A Notice on Motion is not debatable until a Council member moves the motion.

13. VOTING – PECUNIARY INTEREST

- 13.1 Members of Council who have a reasonable belief that they have a pecuniary interest (as defined in the Act) in any matter before Council, any committee of Council or any board, commission, committee or agency to which they are appointed as a representative or Council, shall, if present, declare and disclose the general nature of the pecuniary interest prior to any discussion of the matter, abstain from discussions or voting on any question relating to the matter and shall remove themselves from the room until the matter is concluded. The minutes shall indicate the declaration of disclosure, the time at which the Member of Council left the room and the time the Member of Council returned.

14. RECORDED VOTE

- 14.1 All votes will be recorded. The minutes will show the names of the councillors present and whether each councillor voted for or against the proposal or abstained.

15. PUBLIC HEARINGS

- 15.1 The conduct of any Public Hearing shall be governed by the MGA and this Bylaw.
- 15.2 Wherever possible, persons interested in speaking at a Public Hearing should register with the Council Recording Secretary prior to the Public Hearing.

**TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01**

- 15.3 The Presiding Officer shall declare the Public Hearing in session and shall outline Public Hearing Procedures.
- 15.4 The CAO shall introduce the resolution or bylaw and shall briefly state the intended purpose. Department presentations shall follow the introduction of the bylaw or resolution.
- 15.5 The Presiding Officer shall request those who wish to make presentations to identify themselves. The Presiding Officer shall then open the floor to public presentations.
- 15.6 The Presiding Officer shall call upon those persons who have registered with the Council Recording Secretary to speak first, followed by other persons at the meeting who have not registered to speak but who wish to address Council. A person who does not identify himself or herself will not be given the opportunity to speak.
- 15.7 Presentations by the public may be made verbally, in writing, or both. Written submissions shall be collected by the Council Recording Secretary and retained for information purposes.
- 15.8 Verbal presentations shall be limited to five minutes unless there is consent by Council to extend the allotted time.
- 15.9 Following public presentations, the Presiding Officer shall close the Public Hearing.
- 15.10 If no one is present to speak to a proposed bylaw which requires a Public Hearing, Council may hear an introduction of the matter from the administration, ask relevant questions, and then must vote to close the Public Hearing.
- 15.11 After the close of the Public Hearing, Council may debate matters raised at the Public Hearing during the regular Council meeting following the Public Hearing and may;
 - a) pass the bylaw or resolution, or
 - b) make any necessary amendments to the bylaw or resolution and pass it without further advertisement or hearing.
- 15.12 When a Public hearing on a proposed Bylaw or resolution is held, a Member;
 - a) must abstain from voting on the Bylaw or resolution if the member was absent from all of the Public Hearing, and
 - b) may abstain from voting on the Bylaw or resolution if the member was only absent from a part of the Public Hearing.

16. REPEALING BYLAWS

This Bylaw shall repeal Bylaw 2020-15 and any amendments thereto.

This Bylaw shall come into full force and effect upon the day it receives third and final reading by Council.

Read a first time this 19th day of January 2021.

Read a second time this 2nd day of February 2021.

Read a third and final time this 16th day of March 2021.



Mayor Greg Mosychuk



Joyce Pierce, Chief Administrative Officer

SCHEDULE A

Council Standing Policy Committees

Council Briefing Committee

**Town of Bon Accord
Council Briefing Committee
Terms of Reference**

1. Terms of Reference

1.1 Subject to the control of the Council of the Town of Bon Accord, the mandate of the Council Briefing Committee is to provide a forum for the CAO:

1.1.1 to brief Councillors on specific topics

1.1.2 to provide a context for documents they have or will be receiving

1.1.3 to respond to detailed questions of clarification of material presented

1.2 Meetings of Council Briefing Committee are public meetings and shall be held as needed but no more than once per month.

1.3 To permit the Mayor to participate fully in question and discussion periods, meetings shall be presided by individual Councillors in rotation.

2. Composition

2.1 A Council Briefing Committee shall consist of:

2.2.1 All members of the Town of Bon Accord Council

2.2.2 The CAO and any staff members that may be required.

3. Terms of Office

3.1 All Councillors shall be members of the Committee for their full term of office as a municipally elected Councillor.

4. Duties and Responsibilities

**TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01**

- 4.1 The CAO shall forward materials to be discussed at a meeting of the Committee a minimum of two business days in advance of the meeting.
- 4.2 Councillors are expected to review the material prior to the meeting and arrive prepared with their questions.

5. Procedures

- 5.1 There shall be no Quorum requirements for the Council Briefing Committee
- 5.2 Unless otherwise contradicted in these Terms of Reference, meeting proceedings are bound by those sections of the Town of Bon Accord's current Council Procedure Bylaw that relate to:
 - 5.2.1 order, decorum and questions of order
 - 5.2.2 agendas and minutes
 - 5.2.3 appointment and organization of committees of council
 - 5.2.4 regulations for conducting business in committee

**TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01-2022-16**

**A BYLAW OF THE TOWN OF BON ACCORD, IN THE PROVINCE OF ALBERTA, TO REGULATE THE PROCEDURE
AND CONDUCT OF COUNCIL AND COUNCIL COMMITTEE MEETINGS**

WHEREAS, the *Municipal Government Act* provides that Council may make rules and regulations for calling meetings, governing its proceedings and the conduct of its members, appointing committees and generally for the transaction of business.

WHEREAS, the Council of the Town of Bon Accord considers it **necessary and** expedient ~~and desirable~~ for effective **governance to establish regulations to which proceedings of Council of the Corporation of the Town of Bon Accord shall be governed and conducted.** ~~regulate the procedure and conduct of council, councillors and others attending council and council committee meetings in the Town of Bon Accord.~~

NOW THEREFORE, the Council of the Town of Bon Accord **duly assembled**, in the Province of Alberta, ~~duly~~ **hereby** enacts as follows:

This bylaw shall be cited as the **“Procedural Bylaw”** of the Town of Bon Accord

1. DEFINITIONS

~~“Act” means the Municipal Government Act, R.S.A. 2000, c. M-26, any regulations thereunder, and any amendments or successor legislation thereto.~~

- 1.1 **“Ad Hoc Committee”** means a Committee of Council that may include Members-at-Large appointed by Council, established for a specific period of time and for a specific purpose.
- 1.2 **“Council”** is the members of Council of the Town of Bon Accord elected pursuant to the provisions of the Local Authorities Election Act.
- 1.3 **“Council Committee”** means any committee, board or other body established by Council by Bylaw under the authority of the Municipal Government Act.
- 1.4 **“Council Agenda Committee”** means the Mayor and Deputy Mayor or Councillor appointed by Resolution in the absence of the Mayor or Deputy Mayor.
- 1.5 **“Council Briefing Committee”** means a Council Committee comprised of all members of Council to discuss emerging issues with no provision for Resolutions of Council except to move in and out of Closed Session pursuant to the Municipal Government Act and Freedom of Information and Protection of Privacy Act.
- 1.6 **“Council Meeting”** means an Organizational Meeting, regular meeting and special meeting of Council.
- 1.7 **“Councillor”** means a member of Council including the Mayor and **Deputy Mayor** elected pursuant to the provisions of the *Local Authorities Election Act*.

**TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01-2022-16**

~~1.8 “Delegation” means any person that has permission of Council to appear before Council or committee of council **the Council Briefing Committee** to provide pertinent information and views about the subject before council or council committee. (move to alphabetical order)~~

~~1.9 “CAO” means the Chief Administrative Officer or his/her delegate, for the Municipality.~~

1.8 “Closed Session” is a session of a Council meeting or Council Committee meeting that is closed to the public in whole or part and held in strict confidence pursuant to the Municipal Government Act and Freedom of Information and Protection of Privacy Act.

~~and may include any person or persons invited to attend by Council, Committee. Matters discussed in closed session are confidential until discussed in a public session as per the MGA and FOIP Act.~~

1.9 “Delegation” **means that portion of the regular Council meeting** at which any person or representative(s) of a body that has permission of Council to appear before Council or ~~committee of council~~ **a Council Committee.** ~~to provide pertinent information and views about the subject before council or council committee.~~

~~“Municipality” means the Town of Bon Accord, a municipal corporation of the Province of Alberta and includes the area contained within the boundaries of the Municipality. (Removed, defined as Town below)~~

1.10 “Deputy Mayor” means the member of Council who is appointed pursuant to the Municipal Government Act to act as Mayor in the absence or incapacity of the Mayor.

1.11 “Emergent Issue” means a situation or issue arising unexpectedly that requires a decision or motion be made prior to the next regularly scheduled meeting.

1.12 “Friendly Amendment” is defined as a proposed change in wording or an agreement to a minor change proposed by another Councillor that enhances and strengthens the original motion (without adding to its scope).

1.13 “Mayor” means the Chief Elected Official for the Town of Bon Accord.

1.14 “Member at Large” means any member of the public appointed by Council to a Council Committee.

~~1.15 “Notice of Motion” is the means by which a Councillor may bring a topic before Council.~~ **means a written notice, given by a Councillor, advising Council that the motion described will be brought forward at a subsequent meeting.**

1.16 “Organizational Meeting” is a meeting of Council held in accordance with Section 192 of the Municipal Government Act.

TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01-2022-16

- 1.17 "Point of Information" is a request directed through the Presiding Officer to another member or to staff for information relevant to the business at hand but not related to a Point of Procedure.
- 1.18 "Point of Order" means an ~~infraction of the provisions or rules of the Procedural Bylaw~~, ~~infraction of the rules or improper decorum in speaking~~, is the raising of a question by a Councillor to call attention to any departure from the Procedural Bylaw.
- 1.19 "Point of Procedure" is a question directed to the Presiding Officer to obtain information on a matter of parliamentary law or the rules of the Council bearing on the business at hand in order to assist a member to make an appropriate motion, raise a point of order or understand the parliamentary situation.
- 1.20 "~~Point~~ Question of Privilege" ~~means that an interruption may occur only if necessary~~. means a request for immediate action on a matter affecting the rights and privileges of Council or a Council Committee, or one or more Council or Council Committee members.
- 1.21 "Presiding Officer" means the Mayor ~~or other Councillor as appointed by the Mayor~~, or in the absence of the Mayor, ~~or the Deputy Mayor~~, or in the absence of both the Mayor and Deputy Mayor, Council may appoint a Presiding Officer to chair the Council Meeting.
- 1.22 "Recording Secretary" means the individual recording the proceedings of the meeting.
- 1.23 "Resolution" means a motion passed by a majority of Council.
- 1.24 "Special Resolution" is a Resolution passed by a two-thirds majority of ~~all Council members~~ or two thirds of all members of a Council Committee.
- 1.25 "Town" means the municipal corporation of the Town of Bon Accord.
- 1.26 "Town Manager" means the Chief Administrative Officer appointed by Council or designate.

2. APPLICATION

- 2.1 This Bylaw shall govern the proceedings of Council and Council Committees ~~established by Council~~ and shall be binding upon all Councillors and Council Committee members ~~Committee members whether Councillors or Members at Large~~ unless otherwise established by Bylaw or statute.
- 2.2 If a question relating to the procedures of Council or Council Committees is not answered by this Bylaw, the answer to the question is to be determined by referring to the most recent revision of Robert's Rules of Order, Newly Revised.
- 2.3 In the absence of any statutory obligation, any provision of the Procedural Bylaw may be waived by Special Resolution of Council in favor of dealing with the matter under consideration.

**TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01-2022-16**

2.4 A Resolution waiving any portion of this Bylaw as provided for in Section 2.3 shall only be effective for the meeting during which it is passed.

2.5 When any matters relating to the meeting procedures is not addressed in this Bylaw, the law of the Government of Alberta shall be followed and in such cases the decision of the Mayor or other Presiding Officer shall be final and accepted without debate.

3. SEVERABILITY

3.1 If any portion of this bylaw is declared invalid by a court of competent jurisdiction, then the invalid portion must be severed, and the remainder of the bylaw is deemed valid.

4. ORGANIZATONAL MEETING

4.1. The Council of the Town of Bon Accord shall hold its annual Organizational Meeting pursuant to the Municipal Government Act.

4.2 The agenda for the Organizational Meeting shall include the following:

4.2.1 In the case of the first meeting following a general municipal election the Mayor must take the Oath of Office of Mayor and every Councillor must take the Oath of Office of Councillor;

4.2.2 In the case of the first meeting following a general municipal election a Resolution is to be placed before Council for the appointment and election of the Deputy Mayor;

4.2.3 Appointment of the membership on Council Committees, Boards and Commissions;

4.2.4 Establish the signing authority for all banking matters;

4.2.5 Any such other business as is required by Council or the Municipal Government Act (i.e. appointment of auditor, engineer or legal counsel).

5. POSITION OF DEPUTY MAYOR

5.1. The position of Deputy Mayor shall be twelve (12) months in duration, or as otherwise directed as by Council and each member of Council may serve one term, to be determined at the first organizational meeting following the election, at the annual organizational meeting or as required.

6. REGULAR, SPECIAL AND OTHER COUNCIL MEETINGS

~~—The regular meetings of council shall be established by resolution of Council at its annual organizational meeting.—~~ Recommend removing—this is established per the procedural bylaw below/any changes would require the bylaw to be changed.

TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01-2022-16

- 6.1. Regular meetings of Council will be held on the 1st and 3rd Tuesday of each month, ~~unless otherwise posted in the Council Chambers at the Town Office or in extenuating circumstances may be held virtually.~~
- 6.2. The 1st regular meeting of the month shall commence at 7pm and stand to adjourn no later than 10:30pm unless Council passes a motion to extend the meeting by unanimous consent. Such a motion must be passed no later than 10:00pm.
- 6.3. The 2nd regular meeting of the month shall commence at 8:30am and stand to adjourn no later than 12pm unless Council passes a motion to extend the meeting by unanimous consent. Such a motion must be passed no later than 11:30am.
- ~~6.4. When the date of the regular meeting of Council meeting falls on a statutory holiday, the date of the meeting shall be on the Wednesday following, unless otherwise set by Council resolution.~~
- 6.4 Notice of regularly scheduled Council meetings need not be given.
- 6.5. As soon as there is a Quorum of Council after the hour fixed for the meeting, the Presiding Officer must take the chair and begin the meeting.
- 6.6. A quorum is a majority of Council members. Councillors available via teleconference or videoconference shall be considered present and part of the quorum. The Recording Secretary shall record by the name/s of the Councillors present via teleconference that they, in fact are present by telephone or videoconference. However, use of attendance by a Councillor through teleconference will only be allowed a maximum of three times per calendar year unless extenuating circumstances apply.
- 6.7. Unless a Quorum is present within thirty (30) minutes after the time appointed for the meeting, the meeting will stand adjourned until the next regular meeting date or until a special meeting is called to deal with the matters intended to be dealt with at the adjourned meeting. The Recording Secretary shall record the names of the Council Members present at the expiration of the 30 minutes time limit.
- 6.8. In the event that a quorum is lost after the meeting is called to order, the meeting shall be suspended until quorum is obtained. If quorum is not obtained within 30 minutes, the meeting shall stand adjourned.
- 6.9. Council may change the time, date, or location of any meeting by Special Resolution and any Council Committees may change the time, date, or location of any of its meetings provided that in both cases at least twenty-four (24) hours notice of the change is given to the public.
- 6.9.1. in writing or via telephone communication, to all Council Members or Council Committee members, and

TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01-2022-16

- 6.9.2. to members of the public by posting a notice of the change at the entrance of the Town Office, on the Town's website, or any other Town managed media source and in any other manner so directed by Resolution of Council.
- 6.10. ~~Despite the above 5.7~~ The Mayor may call a ~~Council~~ special meeting whenever the Mayor considers it appropriate to do so and must call a special meeting if the Mayor receives a written request for the meeting, stating its purpose from a majority of the Council. The Town Manager shall give notice to all members of Council of each special meeting as set out in Section 6.9.
- 6.11. Council may cancel any meeting and a Council Committee may cancel any of its meetings if notice is given as set out in Section 6.9.
- 6.12. ~~Despite Section 6.9~~, the Mayor may call a Council meeting on shorter notice and without providing notice to the public provided all Council members are notified of the meeting and two-thirds of Council give written consent to hold the meeting before the meeting begins. No business other than that stated in the notice shall be considered at any meeting described in this section unless all the members of Council are present, in which case, by unanimous consent, any other business may be transacted.
- 6.13. ~~The regular meetings of~~ Council meetings and Council Briefing Committee meetings shall be ~~voice~~ recorded for the purpose of minute preparation and to facilitate public viewing of Council meetings.
- 6.14. All Council Meetings and Council Briefing Committee meetings will be held in public, and no person may be excluded except for improper conduct or when Council makes a Resolution to go into Closed Session.
- 6.15. Council Briefing Committee meetings shall be held on the fourth Wednesday of each month in the Council Chambers of the Town Office or in extenuating circumstances, may be held virtually. The date of the Council Briefing Committee meetings may be changed by a Resolution of Council.
- 6.16. Council Briefing Committee meetings shall start at 5:00 PM and stand to adjourn no later than 7:00 PM.
- 6.17. Council Briefing Committee meetings will be presided by individual Councillors in rotation.
- 6.18. Council may pass a Resolution to form an Ad Hoc Committee for a specific purpose and timeframe which may or may not include all members of Council and may include public representation.
- 6.19. Council members who participate in any Council Committees, Boards, and Commissions are required to report to the Council from time to time, all matters connected with the

TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01-2022-16

duties imposed on them respectively, and to recommend such action by Council in relation thereto as may be deemed necessary and expedient.

- 6.20. Ad Hoc Committee Meetings shall be established by Resolution of each Committee and the public must be given notice or advertised as required by the provisions of the Municipal Government Act.
- 6.21. The Mayor may appoint another member of Council as Presiding Officer. The appointment must include a specified period of time which shall not exceed eight (8) consecutive weeks if the Mayor is absent.

7. AGENDAS

- 7.1. The agenda orders the business for a regular Council meeting and will follow the appropriate order of business set out in Schedule "A" (Regular Council Meeting PM), "B" (Regular Council Meeting AM), "C" (Special Council Meeting) and "D" (Council Briefing Committee Meeting).
- 7.2. Notwithstanding the standard order of business, the Presiding Officer may arrange for all items dealing with a particular subject to be grouped together on the agenda of any individual meeting.
- 7.3. Prior to each regular Council meeting, the Town Manager shall prepare an agenda of all business to be brought before Council at such meeting. To enable the Town Manager to do so, all documents, correspondence and notices of delegations intended to be submitted to the Council shall be submitted to the Town Manager not later than 4:00 PM on Wednesday in the week prior to the regular Council meeting.
- 7.4. Councillors that wish to provide a written report for inclusion in the agenda shall provide the report to the Town Manager not later than 4:00 PM on the Wednesday in the week before the regular meeting.
- 7.5. The Council Agenda Committee shall review the agenda with the Town Manager prior to distribution to all members of Council.
- 7.6. The Town Manager shall make available to each member of Council, a copy of the minutes of the last regular Council meeting and subsequent special meetings, a copy of the agenda and any material pertinent to the forthcoming regular meeting not later than 4 PM on the Friday before the holding of said regular meeting.

~~The agenda for each regular and special meeting shall be prepared by the CAO and emailed, together with copies of all pertinent correspondence, statements and reports to Council by the end of the day on the Friday prior to each regular or Special meeting. In order to do so, the CAO shall receive all documentation prior to 4:00 pm on the Wednesday preceding the Council meeting.~~

TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01-2022-16

- ~~9.2 The agenda and support materials shall be deemed to be acceptable when the agenda is adopted at the meeting.~~
- ~~9.3 The business intended to be dealt with shall be stated in an agenda per the Council Agenda policy.~~
- ~~9.4 The order of business established in the Council Agenda Policy shall apply unless altered by the Presiding Officer with no objection from members, or otherwise determined by a majority vote of the members present, and the vote upon a matter of priority of business shall be decided without debate.~~
- ~~9.5 Standing Committees of Council shall be established and governed by policy or bylaw approved by council. Where appropriate authority is delegated to a Standing committee, such committee and its mandate shall be established by bylaw.~~
- 7.7. Criteria for any written communication intended for Council or a Council Committee which reached the ~~Chief Administration Officer~~ **Town Manager** must:
- 7.7.1. be legible and coherent
 - 7.7.2. be signed by at least one person who provides a printed name and address
 - 7.7.3. be on paper or **submitted electronically by email**
 - 7.7.4. not be **libelous**, **impertinent** **irrelevant**, or **improper** ~~inappropriate~~.
- 7.8. If the requirements of Section **7.7** are not met the ~~Chief Administration Officer~~ **Town Manager** may file the communication unless it is deemed improper, in which case the **Town Manager** ~~Chief Administration Officer~~ must summarize the communication and inform Council that it is being withheld.

8. GENERAL PROCEEDINGS OF MEETINGS

- 8.1. Council must vote to adopt the agenda prior to transacting other business and **may prior to the agenda approval:**
- 8.1.1. add new items to the agenda but only by Special Resolution; or
 - 8.1.2. delete any matter from the agenda but only by Special Resolution **for each deleted item; or**
 - 8.1.3. **in the case of additions or deletions to the agenda, after the additions or deletions are approved as required in 8.1.1 and 8.1.2, the agenda must be approved, as amended, prior to transacting other business.**
- 8.2. The minutes of each meeting must be circulated to each member of Council prior to the meeting at which they are to be adopted. Debate on the minutes of a previous meeting is limited, to ensure that the minutes are accurate. If there are errors or omissions, Council must:
- 8.2.1. pass a Resolution to amend the minutes; and

TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW ~~2021-01~~2022-16

- 8.2.2. adopt the minutes as amended and if there are not errors or omissions, Council must adopt the minutes as circulated.
- 8.3. Delegations appearing before Council may be addressed by any member of Council through the Presiding Officer, by asking the delegation or the ~~Chief Administrative Officer~~ **Town Manager** relevant questions but may not debate the matter or the answers. The presentation by a delegation may only be:
- 8.3.1. received as information without debate;
 - 8.3.2. referred without debate to a Council Committee (?) or the ~~Chief Administrative Officer~~ **Town Manager** for a report,
 - 8.3.3. or debated if a Special Resolution is passed to allow a motion to be made without notice;
 - 8.3.4. limited to 15 minutes unless there is a Special Resolution to extend the allotted time.
- 8.4. **An information report from a committee, agency or Administration that does not request Council action other than receipt as information may only be:**
- 8.4.1. **received as information without debate**
 - 8.4.2. **referred to the Town Manager by majority vote without debate, or**
 - 8.4.3. **debated if a Special Resolution is passed to allow a motion to be made without notice.**
- ~~Reports from the Chief Administrative Officer or other management personnel which request a decision by Council may be debated and Council may:~~
- ~~6.4.1 vote on the request, or~~
 - ~~6.4.2 refer the request to a Council Committee (?) or the Chief Administrative Officer **Town Manager** for further investigation and report.~~
- 8.5. Any Councillor may make a request for information to be provided to Council on any matter within the municipality's jurisdiction. The ~~Chief Administrative Officer~~ **Town Manager** or other management personnel will provide an answer to the inquiry at the next Council meeting or, if that is not possible will provide a progress report indicating when the answer to the inquiry may be expected.
- 8.6. Every motion or Resolution shall be stated clearly by the mover and when duly moved shall be open for consideration. After a **resolution motion** has been stated or read, it shall be deemed to be in possession of Council but may be withdrawn by unanimous consent of the Council members present. Discussion on any motion will be limited to ten (10) minutes and at that time the Presiding Officer will call for a vote on that motion by the members of Council present.

TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW ~~2021-01~~2022-16

8.7. A Friendly Amendment may be incorporated into the original motion if the mover of the motion approves. Only the motion as changed by the friendly amendment shall appear in the minutes.

8.8. Any member of Council desiring to speak shall address the remarks to the Presiding Officer, by way of hand gesture or by saying Mr. or Madame Mayor in a manner that does not interrupt conversation already in progress, confine themselves to the question and avoid personality. Should more than one-member desire to speak at the same time, the Presiding Officer shall determine who is entitled to the floor. Members of Council wishing to speak on a matter during the meeting must indicate their intention by raising their hand and any member of Council present via telephone, shall address the Presiding Officer, by stating "I wish to speak on the matter at hand" and being recognized by the Presiding Officer. Each Council member should not speak more than once until every member of Council has had the opportunity to speak except in the explanation of a material part of the speech which may have been misunderstood or in reply, to close debate, after everyone else wishing to speak has spoken.

9. CONDUCT OF MEETINGS

9.1. Each member or delegation shall address the Presiding Officer but shall not speak until recognized by the Presiding Officer.

9.2. A motion does not require to be seconded.

9.3. Unless otherwise specifically provided in this Procedure Bylaw the following motions are debatable by Council:

9.3.1. a motion arising out of any matter or thing included in the agenda for the Council meeting;

9.3.2. a motion to postpone or refer;

9.3.3. a motion for adoption of, rejection of, referral back or further consideration of a report to council, or a motion arising out of any matter dealt with in a report to Council;

9.3.4. a motion for the second or a motion for the third reading of a Bylaw;

9.3.5. a motion for an appointment or dismissal of a committee member, or referral to a committee of any matter before the Council;

9.3.6. a motion for amendment to any Bylaw properly before the Council, or to any matter arising directly out of a Bylaw properly before the Council.

9.4. Any matter of meeting conduct, which is not herein provided for, shall be determined in accordance with "Roberts Rule of Order".

9.5. Where a question under consideration contains distinct propositions, the vote upon each proposition shall be taken separately when any member so requests or when the Presiding Officer so directs.

**TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW ~~2021-01~~2022-16**

Points of Order (from Woodland County Procedural Bylaw)

- 9.6 A Councillor who desires to call attention to a violation of the rules of procedure shall ask the Presiding Officer to raise a Point of Order. When leave is granted, the Councillor shall state the Point of Order with a concise explanation.
- 9.7 A Councillor called to order by the Presiding Officer shall immediately discontinue speaking and debate shall be suspended until the point of order is decided.
- 9.8 Whenever the Presiding Officer is of the opinion that a motion is contrary to the rules and privileges of council, he/she shall inform the member thereof immediately, before putting the question, and shall cite his/her reasons applicable to the case without argument or comment.

Question of Privilege (From Woodlands County Procedural Bylaw)

- 9.9 A Councillor who desires to address the Council during the meeting upon a matter which concerns the rights or privileges of the Councillor collectively, or of the Councillor bringing forward the Question of Privilege, shall be permitted to raise such a Question of Privilege.
- 9.10 A Question of Privilege shall take precedence over other matters and while the Presiding Officer is ruling on the Question of Privilege, no one shall be in possession of the floor.

Appeal Ruling:

- 9.11 The decision of the Presiding Officer shall be final, subject to an immediate appeal by a Councillor of the meeting.
- 9.12 If the decision is appealed, the Presiding Officer shall give concise reasons for the ruling and the Councillors, without debate, shall decide the question. The ruling of Council shall be final.

9.13 In all cases not provided for in the proceedings of the council, a majority of council shall determine to uphold the ruling of the Presiding Officer or not as the case may be.

- 9.14 This bylaw shall not be repealed, amended or suspended except so far as the terms thereof themselves permit unless it is repealed, amended or suspended:
- 9.14.1 by a bylaw unanimously passed at a regular or special meeting of the Council at which all members thereof are present; or
 - 9.14.2 by a bylaw passed at a regular meeting of Council pursuant to a notice in writing given and openly announced at the preceding meeting of the council and setting out the terms of the substantial effect of the proposed bylaw.

10 ELECTRONIC MEETING ATTENDANCE

TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01-2022-16

- 10.1 The Presiding Officer cannot use electronic means to attend a Regular Meeting of Council.
- 10.2 Electronic means cannot be used for Special Meeting of Council.
- 10.3 Quorum must be attained through physical presence at the meeting, additional members may attend through electronic means.
- 10.4 Use of attendance through electronic means is being provided to allow for periodic flexibility, attending in person must be done so at a minimum of every third meeting.
- 10.5 Electronic attendance will be conducted using video conferencing, secure platforms, and telephone.
- 10.6 An effective method of data transfer must be available, if attending electronically, for review and voting on bylaws, ASP's, and other documents that require council review.
- 10.7 Should connectivity of electronic means cease to exist at any point during the meeting, the attendee will be deemed absent for that portion of the meeting, just as the case when attending in person.
- 10.8 Closed Session items cannot be discussed through electronic means.
- 10.9 When attending electronically, the attendee must obtain access to the meeting material prior to the start of the meeting through a secure means.
- 10.10 The attendee must be connected prior to the meeting being called to order.
- 10.11 Should the electronically connected member be found to be out of order, per items 10.1 and 10.2 of this bylaw, the member connection will be terminated.
- 10.12 Notwithstanding sections 10.1, 10.2, 10.3, 10.4, and 10.8 in extenuating circumstances, all meetings may be held and attended via electronic means and shared to the public via the internet. If these platforms fail or are interrupted without the ability to restore service, the meeting will be adjourned.
- 10.13 Attendees are expected to act and dress as though they are attending in person and ensure no background noise that will interfere with the meeting.

9.0 AGENDAS (MOVED)

- ~~9.1 The agenda for each regular and special meeting shall be prepared by the CAO and emailed, together with copies of all pertinent correspondence, statements and reports to Council by the end of the day on the Friday prior to each regular or Special meeting. In order to do so, the CAO shall receive all documentation prior to 4:00 pm on the Wednesday preceding the Council meeting.~~

TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01-2022-16

- ~~9.2 The agenda and support materials shall be deemed to be acceptable when the agenda is adopted at the meeting.~~
- ~~9.3 The business intended to be dealt with shall be stated in an agenda per the Council Agenda policy.~~
- ~~9.4 The order of business established in the Council Agenda Policy shall apply unless altered by the Presiding Officer with no objection from members, or otherwise determined by a majority vote of the members present, and the vote upon a matter of priority of business shall be decided without debate.~~
- ~~9.5 Standing Committees of Council shall be established and governed by policy or bylaw approved by council. Where appropriate authority is delegated to a Standing committee, such committee and its mandate shall be established by bylaw.~~
- ~~9.6 Criteria for any written communication intended for Council or a Committee which reached the Chief Administrative Officer must:~~
- ~~— 9.6.1 be legible and coherent~~
 - ~~— 9.6.2 be signed by at least one person who provides a printed name and address~~
 - ~~— 9.6.3 be on paper~~
 - ~~— 9.6.4 not be libelous, impertinent or improper.~~
- ~~9.7 If the requirements of Section 9.6 are not met the Chief Administrative Officer may file the communication unless it is deemed improper, in which case the Chief Administrative Officer must summarize the communication and inform Council that it is being withheld.~~

11 CLOSED SESSIONS

- 11.1 Matters to be discussed which are within one of the categories of information referred to in Section 217 of the Municipal Government Act (MGA) **and/or as prescribed in the Freedom of Information and Protection of Privacy Act**, as amended, or replaced from time to time, may be considered at a Closed Session Meeting or portion of a meeting.
- 11.2 Council or **Council** Committee has no power at a Closed Session to pass any Bylaw or Resolution apart from the Resolution necessary to revert to an open meeting.
- 11.3 It is the responsibility of each member **Councillor** to ensure Closed Session duties are adhered to when attending virtually to avoid any confidentiality breaches or conflicts.
- 11.4 Council shall state the purpose including the section of the FOIP Act that applies as well as the time in the motion to move into Closed Session.**

12 MAINTAINING ORDER IN COUNCIL ORDER IN COUNCIL – COUNCIL

~~Members of Council~~ **Councillors** shall not:

- 12.1 use offensive words or un-parliamentary language in the meeting;

TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01-2022-16

- 12.2 disobey the rules of the meeting or decision of the Presiding Officer or of members of Council on questions of order or practice; or upon the interpretation of the rules of the meeting;
- 12.3 leave their seat or make any noise or disturbance while a vote is being taken and the result is declared;
- 12.4 interrupt a member of Council while speaking, except to raise a Point of Order or Question of Privilege;
- 12.5 pass between a Member of Council who is speaking and the Presiding Officer;
- 12.6 ~~influence or~~ communicate with any municipal employees except **through** the Chief Administrative Officer **Town Manager** or administrative personnel involved with the committee of which they are members; any other communication or inquiries must be through the Chief Administrative Officer;
- 12.7 Members of Council who persist in a breach of the foregoing section 11, after having been called to order by the Presiding Officer, may, at the discretion of the Presiding Officer, be asked to provide a public apology;
- 12.8 A member of Council who wishes to leave the meeting prior to adjournment shall so advise the Presiding Officer and the time of departure and return shall be noted in the minutes.
- 12.9 **Councillors shall adhere to the Council Code of Conduct Bylaw.**

13. ORDER IN COUNCIL – **PUBLIC DISTURBANCE/CONDUCT**

- 13.1 ~~Subject to the Municipal Government Act and to the provisions of the Procedural Bylaw, visitors and delegations and any member of the public have the right to be present at Council meetings and Council Committee meetings held in public.~~
- 13.2 ~~The Presiding Officer may order any member of the public who disturbs the proceedings of Council by words or actions to be expelled from the meeting.~~
- 13.3 ~~If the health and safety of the meeting participants is deemed to be at risk, the individual may be disallowed from attending future meetings.~~
- 13.4 ~~If a member of the public who has been expelled refuses to leave the premises, the Town Manager shall request the RCMP to remove the person.~~

~~Only Councillors, the chief administrative officer **Town Manager** and those individuals authorized by the Chief Administrative Officer **Town Manager** may be present to address council.~~

TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01-2022-16

~~11.10 No person in the gallery or on the floor of council chambers shall cause any disturbance, interrupt any speaker, or interfere with the actions of council. The Presiding Officer may call to order any person who has created a disturbance and may expel that person from council chambers.~~

14. NOTICE OF MOTION

Notice of Motion: Simplified wording:

A Notice of Motion must be used by a Councillor to introduce a matter which does not appear on the agenda.

A Notice of Motion is not debatable, however the member presenting the notice may speak to the notice for a period not to exceed 5 minutes.

Once the Motion is stated, it will be recorded in the meeting minutes.

A written copy of the Notice of Motion shall be provided to the CAO Town Manager prior to the meeting's adjournment.

The motion on notice shall be added as new business on the agenda for the subsequent regular or special meetings of Council called to complete the regular business.

Council may waive the requirement for notice by Special Resolution and add the matter to the agenda as urgent business.

If a Notice of Motion is defeated by a vote of Council, no further action will be taken.

~~14.1 Council members may bring forward a notice of motion as an item on the agenda of a regular Council meeting. A Notice of Motion must give sufficient detail so that the subject of the motion and any proposed action can be determined and should be used to give notice when an extended period of time is advisable prior to considering a subject.~~

~~14.2 The Notice of Motion will be placed on the next regular Council Meeting agenda that the elected official who made the Notice of Motion is present, to vote whether the matter will proceed.~~

TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW ~~2021-01~~2022-16

~~14.3~~ Once approved by Council, a Notice of Motion given at a regular Council meeting will be addressed in a time frame not beyond the end of the third month from when it was presented, unless Council directs differently.

14.4 A Notice of Motion cannot be made at a special Council meeting.

14.5 A Notice on Motion is not debatable until a Council member moves the motion.

15. VOTING – PECUNIARY INTEREST

15.1 Members of Council who have a reasonable belief that they have a pecuniary interest (as defined in the Act) in any matter before Council, any committee of Council or any board, commission, committee or agency to which they are appointed as a representative or Council, shall, if present, declare and disclose the general nature of the pecuniary interest prior to any discussion of the matter, abstain from discussions or voting on any question relating to the matter and shall remove themselves from the room until the matter is concluded. The minutes shall indicate the declaration of disclosure, the time at which the Member of Council left the room and the time the Member of Council returned.

16. RECORDED VOTE

16.1 All votes will be recorded. The minutes will show the names of the councillors present and whether each councillor voted for or against the proposal or abstained.

17. PUBLIC HEARING

17.1 Public Hearings shall be held on the same day and time as the regular Council meetings, unless otherwise set by Resolution of Council and the regular meeting of Council will follow immediately thereafter.

17.2 The conduct of any Public Hearing shall be governed by the MGA and this Bylaw.

17.3 Wherever possible, persons interested in speaking at a Public Hearing should register with the Council Recording Secretary prior to the Public Hearing.

17.4 The Presiding Officer shall declare the Public Hearing in session and shall outline Public Hearing Procedures.

TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW ~~2021-01~~ 2022-16

- 17.5 The ~~CAO~~ **Town Manager** shall introduce the Resolution or bylaw and shall briefly state the intended purpose. Department presentations shall follow the introduction of the bylaw or Resolution.
- 17.6 The Presiding Officer shall request those who wish to make presentations to identify themselves. The Presiding Officer shall then open the floor to public presentations.
- 17.7 The Presiding Officer shall call upon those persons who have registered with the Council Recording Secretary to speak first, followed by other persons at the meeting who have not registered to speak but who wish to address Council. A person who does not identify himself or herself will not be given the opportunity to speak.
- 17.8 Presentations by the public may be made verbally, in writing, or both. Written submissions shall be collected by the Council Recording Secretary and retained for information purposes.
- 17.9 Verbal presentations shall be limited to five minutes unless there is consent by Council to extend the allotted time.
- 17.10 Following public presentations, the Presiding Officer shall close the Public Hearing.
- 17.11 If no one is present to speak to a proposed bylaw which requires a Public Hearing, Council may hear an introduction of the matter from the administration, ask relevant questions, and then must vote to close the Public Hearing.
- 17.12 After the close of the Public Hearing, Council may debate matters raised at the Public Hearing during the regular Council meeting following the Public Hearing and may;
- 17.12.1 pass the bylaw or Resolution, or
- 17.12.2 make any necessary amendments to the bylaw or Resolution and pass it without further advertisement or hearing.
- 17.13 When a Public hearing on a proposed Bylaw or Resolution is held, a member must abstain from voting on the Bylaw or Resolution if the member was absent from all **or part** of the Public Hearing, ~~and~~
- ~~17.13.1 may abstain from voting on the Bylaw or resolution if the member was only absent from a part of the Public Hearing.~~

18. REPEALING BYLAWS

This Bylaw shall repeal Bylaw ~~2020-15~~ **2021-01** and any amendments thereto.

This Bylaw shall come into full force and effect upon the day it receives third and final reading by Council.

Read a first time this ~~19th day of January 2021.~~

**TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW ~~2021-01~~ 2022-16**

Read a second time this ~~2nd~~ day of February 2021.

Read a third and final time this ~~16th~~ day of March 2021.

~~Mayor Greg Mesychuk~~ **Brian Holden**

~~Joyce Pierce, Chief Administration
Officer Jodi Brown,~~ **Town Manager**

DRAFT

~~SCHEDULE A~~

~~Council Standing Policy Committees~~

~~Council Briefing Committee~~

~~Town of Bon Accord
Council Briefing Committee
Terms of Reference~~

~~1. Terms of Reference~~

~~1.1 Subject to the control of the Council of the Town of Bon Accord, the mandate of the Council Briefing Committee is to provide a forum for the CAO:~~

~~1.1.1 to brief Councillors on specific topics~~

~~1.1.2 to provide a context for documents they have or will be receiving~~

~~1.1.3 to respond to detailed questions of clarification of material presented~~

~~1.2 Meetings of Council Briefing Committee are public meetings and shall be held as needed but no more than once per month.~~

~~1.3 To permit the Mayor to participate fully in question and discussion periods, meetings shall be presided by individual Councillors in rotation.~~

~~2. Composition~~

~~2.1 A Council Briefing Committee shall consist of:~~

~~2.2.1 All members of the Town of Bon Accord Council~~

~~2.2.2 The CAO and any staff members that may be required.~~

~~3. Terms of Office~~

~~3.1 All Councillors shall be members of the Committee for their full term of office as a municipally elected Councillor.~~

TOWN OF BON ACCORD
THE PROCEDURAL BYLAW
BYLAW 2021-01-2022-16

~~4. Duties and Responsibilities~~

- ~~4.1 The CAO shall forward materials to be discussed at a meeting of the Committee a minimum of two business days in advance of the meeting.~~
- ~~4.2 Councillors are expected to review the material prior to the meeting and arrive prepared with their questions.~~

~~5. Procedures~~

- ~~5.1 There shall be no Quorum requirements for the Council Briefing Committee~~
- ~~5.2 Unless otherwise contradicted in these Terms of Reference, meeting proceedings are bound by those sections of the Town of Bon Accord's current Council Procedure Bylaw that relate to:~~
 - ~~5.2.1 order, decorum and questions of order~~
 - ~~5.2.2 agendas and minutes~~
 - ~~5.2.3 appointment and organization of committees of council~~
 - ~~5.2.4 regulations for conducting business in committee~~

DRAFT

TOWN OF BON ACCORD
COUNCIL BRIEFING REPORT

Meeting:	Council Briefing Committee Meeting
Meeting Date:	June 29 th , 2022
Presented by:	Jodi Brown Town Manager/CAO
Title:	Council Long-Term Service Awards and Employee Long-Term Service Awards
Agenda Item No.	4.2

The enclosed Long-Term Service Policy was established in 2005 and was last reviewed in 2013.

Given recent long term service milestones reached by staff, administration reviewed this policy. The review resulted in the recommendation to separate this policy into two policies for better clarity as shown below:

1. Council Long-Term Service Awards
2. Employee Long-Term Service Awards

Secondly, the gift dollar amounts have been increased given the length of time since the policy was last reviewed (2013).

It is important to recognize long-term service for both Council and employees, hence administration is recommending updating these two policies to ensure that recognition takes place and within the parameters set by Council.

STRATEGIC ALIGNMENT

Values Statement – Professionalism:

- Administration and Council manage the affairs of Bon Accord in a competent, reliable manner, to maintain a safe and prosperous community to work and live.

Value Statement – Transparency:

- Open and accountable to our residents and encourage open communication.

Value Statement – Service Excellence:

- Administration and Council strive for the highest standard of service delivery and governance.

COSTS/SOURCES OF FUNDING

Operating Budget

TOWN OF BON ACCORD POLICY STATEMENT

SECTION: Administration

POLICY NO.:

SUBJECT: LONG SERVICE AWARDS

RESPONSIBLE AUTHORITY: Administration Department - Finance

REVIEWED & APPROVED BY COUNCIL:

June 21, 2005 – Council Meeting, Resolution 05.160
September 17, 2013 - Council Meeting, Resolution 13.230

PURPOSE AND INTENT: Guideline for Long Service Awards

POLICY STATEMENT: The Town of Bon Accord wishes to show their appreciation for the commitment and loyalty of all employees and Councillors and to recognize their contribution to the Town.

PROCEDURES

1. Employees and Councillors will be recognized for having completed the following years of service:

Staff

- 5 years: \$ 75
- 10 years: \$125
- 15 years: \$200
- 20 years: \$250
- 25 years: \$300
- 30 years: up to \$375

Council

- 8 years: \$ 75
- 12 years: \$100
- 16 years: \$150
- 20 years: \$200
- 20+ years: Council Review
- Councillors upon leaving Council will receive a plaque

2. Recognitions will be presented at the annual Christmas function or as soon as possible upon the person leaving service to the Town.

3. Gift to be appropriate to the person. Staff will be responsible for purchasing the appropriate gift, to the value indicated in item 1 above, for staff members. Council will be responsible for purchasing the appropriate gift, to the value indicated in item 1 above, for Council members.

** Awards are not retroactive.

COUNCIL SERVICE AWARDS

SECTION: Council

DEPARTMENT: Administration

COUNCIL APPROVAL DATE: [date], 2022

PURPOSE AND INTENT: ~~Guideline for Long Service Awards~~

POLICY STATEMENT: ~~The Town of Bon Accord wishes to show their appreciation for the commitment and loyalty of all employees and Councillors and to recognize their contribution to the Town.~~

POLICY STATEMENT

The Town of Bon Accord is committed to recognizing and showing appreciation for Council members for their community service upon leaving office.

PURPOSE

The purpose of this policy is to provide the framework and parameters for the recognition of Council members when leaving office.

SCOPE

This policy will apply to recognition for Council members serving four (4) or more consecutive years for the Town of Bon Accord, who are leaving their official capacity in good standing.

DEFINITIONS

“Council” means the Mayor, Deputy Mayor, or members of Bon Accord Council.

“Service Award” means a recognition award for a Council member for their service to the Town.

“Town” means the Town of Bon Accord.

“Town Manager” means the Chief Administrative Officer of the Town of Bon Accord.

RESPONSIBILITIES

The Town Manager or delegate is responsible to ensure that administrative procedures are established for the provision of Service Awards according to this policy.

PROCEDURES ~~COUNCIL SERVICE AWARDS~~

1. Council members will receive a gift card and certificate, or plaque as stipulated in the chart below upon leaving office:

Length of Service	Gift Card	Plaque or Certificate
4 years	\$75 Gift Card	Certificate
8 years	\$100 Gift Card	Plaque
12 years	\$125 Gift Card	Plaque
16 years	\$175 Gift Card	Plaque
20 years	\$225 Gift Card	Plaque
21 years	Council Review	Council Review

- ~~8 years: \$ 75~~
- ~~12 years: \$100~~
- ~~16 years: \$150~~
- ~~20 years: \$200~~
- ~~20+ years: Council Review~~
- ~~Councillors upon leaving Council will receive a plaque~~

2. Council will review other recognition options that will be awarded to Council members who receive a Service Award of 21 years or more on an individual basis.
3. The maximum value of the cost of the plaque for the Council Service Award will be determined by the governing Council at that time.

PRESENTATION OF LONG-TERM SERVICE AWARDS

1. ~~Recognitions~~ **Council Service Awards** will be presented by the **Mayor, Deputy Mayor or designate during a Council meeting**, or as soon as possible upon the Council member leaving service to the Town.
2. Awards are not retroactive.

~~Gift to be appropriate to the person. Staff will be responsible for purchasing the appropriate gift, to the value indicated in item 1 above, for staff members.
Council will be responsible for purchasing the appropriate gift, to the value indicated in item 1 above, for Council members.~~

~~** Awards are not retroactive.~~

EMPLOYEE LONG-TERM SERVICE AWARDS

SECTION: Administration

DEPARTMENT: Administration / Public Works / Finance / Recreation and Community Services

COUNCIL APPROVAL DATE: [date], 2022

PURPOSE AND INTENT: ~~Guideline for Long Service Awards~~

POLICY STATEMENT: ~~The Town of Bon Accord wishes to show their appreciation for the commitment and loyalty of all employees and Councillors and to recognize their contribution to the Town.~~

POLICY STATEMENT

The Town of Bon Accord is committed to recognizing and showing appreciation for the long-term service of Employees that have served the community for five or more years.

PURPOSE

The purpose of this policy is to provide a consistent framework for the recognition of Employees for long-term service.

SCOPE

This policy will apply to permanent Employees who have been employed for five or more consecutive years.

This policy does not apply to retirement celebrations for Town staff.

DEFINITIONS

“Employee” means an individual employed on a permanent basis by the Town.

“Employee Long-Term Service Award” means recognition of an Employee for long-term service to the Town.

“Town” means the Town of Bon Accord.

“Town Manager” means the Chief Administrative Officer of the Town of Bon Accord.

RESPONSIBILITIES

The Town Manager or delegate is responsible to ensure that administrative procedures are established for provision of Employee Long-Term Service Awards according to this policy.

PROCEDURES ~~EMPLOYEE LONG-TERM SERVICE AWARDS~~

~~1. Employees and Councillors will be recognized for having completed the following years of service:~~

~~Staff~~

1. Employees will receive Long-Term Service Awards as shown below.

Length of Service	Gift Card	Certificate or Plaque
5 years	\$100 Gift Card	Certificate
10 years	\$150 Gift Card	Certificate
15 years	\$225 Gift Card	Certificate
20 years	\$275 Gift Card	Plaque
25 years	\$325 Gift Card	Plaque
30 years	Council Review	Plaque

2. Employees who receive an Employee Long-Term Service Award of 5 to 15 years shall receive a recognition certificate signed by the Mayor and Town Manager.

3. Employees who receive an Employee Long-Term Service Award of 20 - 30 years will receive a plaque (max. cost limit of \$100) instead of the recognition certificate.

• ~~5 years: \$ 75~~

- ~~10 years: \$125~~
- ~~15 years: \$200~~
- ~~20 years: \$250~~
- ~~25 years: \$300~~
- ~~30 years: up to \$375~~

PRESENTATION OF EMPLOYEE LONG-TERM SERVICE AWARDS

- ~~1. Recognitions~~ **Employee Long-Term Service Awards** will be presented by the **Mayor, Deputy Mayor or designate** at the annual Christmas function ~~or as soon as possible upon the person leaving service to the Town.~~
2. Upon this policy taking effect, current Employees that have worked for the Town for 5 years or more and have not been recognized in the past will be awarded the appropriate **Employee Long-Term Service Award**. Otherwise, **Employee Long-Term Service Awards** are not retroactive.

~~Gift to be appropriate to the person. Staff will be responsible for purchasing the appropriate gift, to the value indicated in item 1 above, for staff members. Council will be responsible for purchasing the appropriate gift, to the value indicated in item 1 above, for Council members.~~

~~** Awards are not retroactive.~~