

BYLAW NO. 23-2016

A BYLAW OF THE CITY OF
LLOYDMINSTER IN THE PROVINCES OF
ALBERTA AND SASKATCHEWAN TO
APPROVE AN AREA STRUCTURE PLAN
FOR THE WILLOWS

WHEREAS pursuant to the provisions of the *Lloydminster Charter* **AND** *Part 17 of the Municipal Government Act*, Council of the City of Lloydminster may pass a bylaw approving an area structure plan to provide a framework for subsequent subdivision and development of an area of land.

NOW THEREFORE, be it resolved that the Council of the City of Lloydminster enacts as follows:

1. This Bylaw shall be cited as "The Willows Area Structure Plan Bylaw".
2. The Willows Area Structure Plan, attached as Schedule "A" is hereby adopted.

This bylaw shall come into force and effect upon the final passing thereof.

INTRODUCED AND READ a first time this 27 day of June, 2016, A.D.

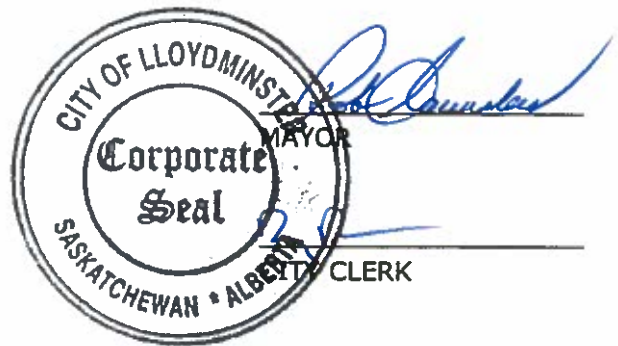
PUBLIC HEARING held this 25th day of July, 2016, A.D.

READ a second time this 25th day of July, 2016, A.D.

READ a third time this 25th day of July, 2016, A.D.

Date signed July 26, 2016

Date signed July 26, 2016



THE WILLOWS

AREA STRUCTURE PLAN



Prepared for: Lloyd Lakes Ltd.
Presented by: Select Engineering Consultants Ltd.
Date: June 13, 2016
RPT1-153-14011-8.0-LamontLloydASP-160608



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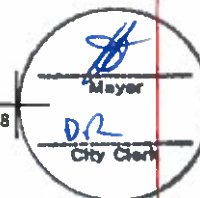


Table of Contents

1.0	Introduction	1
1.1	Purpose	1
1.2	Background.....	1
1.3	Location.....	1
1.4	Land Ownership	2
1.5	Public Consultation	2
2.0	Statutory Compliance	3
2.1	Lloydminster Charter	3
2.2	Municipal Government Act	3
2.3	The Planning and Development Act, 2007	3
2.4	Municipal Development Plan	4
2.5	Integrated Community Sustainability Plan	4
2.6	Inter-Municipal Development Plan.....	5
2.7	Official Community Plan	5
2.8	City of Lloydminster Growth Study.....	6
2.9	Zoning (Land Use) Bylaw.....	6
3.0	Site Context and Development Considerations	7
3.1	Surrounding Site Context.....	7
3.1.1	Wallacefield	7
3.1.2	Rural Municipality of Wilton No. 472	7
3.1.3	County of Vermilion River No. 24	7
3.2	Existing Site Context	7
3.2.1	Topography	7
3.2.2	Abandoned Wells & Utility Rights of Way	8
3.2.3	Government Road Allowance	8
3.3	Supporting Documents	9
3.3.1	Biological Resources Inventory and Assessment	9
3.3.2	Heritage Resource Review	10
3.3.3	Environmental Site Assessment Phase 1	10
3.3.4	Geotechnical Investigation	10
4.0	Development Concept	11
4.1	Vision.....	11
4.2	Development Objectives.....	11
4.2.1	Neighbourhood and Community	11
4.2.2	Residential	12
4.2.3	Commercial	12
4.2.4	Parks, Schools and Open Space	12
4.2.5	Urban Design	13
4.2.6	Transportation	13
4.2.7	Utilities	14
4.3	Land Use Concept.....	14

4.3.1	Residential	15
4.3.2	Commercial	16
4.3.3	Parks and Open Space	16
4.3.4	Municipal Reserve	19
4.3.5	Natural Features	19
5.0	Transportation	22
5.1	Arterial Road Network	22
5.2	Collector Road Network	22
5.3	Local Road Network	24
5.4	Lane Network	25
5.5	Pedestrians and Cyclists	26
6.0	Servicing	27
6.1	Stormwater Management System	27
6.2	Sanitary Sewer System	28
6.3	Water Distribution System	29
6.4	Shallow Utilities	29
7.0	Implementation and Staging	30
7.1	Staging	30

List of Tables

Table 1: Land Use Statistics	21
Table 2: Student Generations	21

List of Appendices

- Appendix A: Area Structure Plan Figures
- Appendix B: Illustrative Concept
- Appendix C: Example Entry Features and Example Pagentry & Show Home Parade
- Appendix D: Example Low and Medium Density Housing Forms

1.0 Introduction

1.1 Purpose

This Area Structure Plan (ASP) provides a statutory planning framework to guide the review and approval of Land Use Bylaw amendments and subdivision applications within the neighbourhood. It conceptually identifies land uses, the location of transportation routes, alignments for public utilities and servicing and the anticipated sequence of development. The Willows ASP has been prepared consistent with the City of Lloydminster's *Guide to the Land Development Process* and the City of Lloydminster's *Terms of Reference for the Preparation of an Outline Plan*.

This ASP addresses the interface between development within the Plan area and existing and proposed developments in the surrounding area. Approval of this Area Structure Plan will be required by the City of Lloydminster prior to districting, subdivision and development approvals.

1.2 Background

The Willows area is within the most south easterly quadrant of undeveloped land within the boundary of the City of Lloydminster south of 12 Street. The intersection at 12 Street and 50 Avenue will become the gateway to a new section of the City of Lloydminster. The lands adjacent to the Willows on the west and south are presently the subject of an annexation initiated by the City on June 9, 2014.

The *City of Lloydminster's Municipal Development Plan* identifies the Plan area for Urban Expansion and the City has recently updated their Stormwater, Sanitary Sewer and Water Master Plans to include the Willows area.

1.3 Location

The Willows is located at the south eastern boundary of the City of Lloydminster in the Province of Saskatchewan. It is adjacent to the Rural Municipality of Wilton No. 472 on the south and east and the County of Vermillion River No. 24 to the west. (See Figure 1) The Willows ASP is bounded by:

- 40 Avenue (which also forms the City boundary) to the east;
- 50 Avenue (which forms the City boundary) to the west;
- the City Boundary to the south; and
- 12 Street to the north.

1.4 Land Ownership

The Plan area contains 137.63 hectares and is legally described as the NE-22-49-28-W3, the NW-23-49-28-W3 and the NE-23-49-28-W3. The land is held under three separate certificates of title all registered to Lloyd Lakes Ltd. (See Figure 2)

The 49 Avenue road right of way registered north-south through the west Plan area will be closed, negotiated and acquired by Lloyd Lakes Ltd. and incorporated into the land use.

A fibre optics right of way operated by Sasktel (Plan No. 96B03597) extends north-south adjacent to the east boundary of the Plan area.

A utility right of way operated by ATCO Ltd. (Plan No. BT3416) also extends north-south adjacent to the east boundary of the Plan area.

An AltaGas Ltd. Pipeline (Plan No. 02B02873) is located in the northeast Plan area.

1.5 Public Consultation

A Public Open House was hosted by Lloyd Lakes Ltd. and Select Engineering Consultants at the Servus Sports Centre in the City of Lloydminster on Thursday February 11, 2016 from 5:30pm to 8:30pm. The purpose of this Public Open House was to present the features of the proposed ASP and gather public input prior to the City accepting a formal ASP application.

The Public Open House was advertised in the January 29, 2016 and February 3, 2016 editions of the Meridian Booster. All presentation materials and proposed newspaper advertisements were submitted to the City's Planning Department for approval prior to the event.

Approximately two hundred and eleven (211) letters were distributed through a referral process to adjacent landowners.

A total of twenty four (24) people signed in at the Public Open House. Representatives from the City, the applicant and the applicant's consultants were available to welcome attendees and answer questions. Two councillors were in attendance as well as representatives from the Regional Municipality of Wilton and Husky Oil.

Specifically there were discussions with the representatives of the Regional Municipality of Wilton regarding the management of stormwater on site and off site and Select has since contacted the Husky representative to ensure that Husky's setback requirements are respected. Generally the other residents wanted to understand what land uses were being proposed and the estimated timing of development.

One comment sheet was received by the City following the February 11, 2016 Public Open House and was addressed accordingly.

Upon circulation of the Willows ASP document a response from the Water Security Agency was received by the City on June 7, 2016 which speaks to stormwater management, drainage and flow rates from the Willows neighbourhood downstream. These issues will be addressed at the time of subdivision and to the satisfaction of the City and the Water Security Agency.

2.0 Statutory Compliance

The City of Lloydminster being a part of the Province of Alberta and part of the Province of Saskatchewan must conform to multiple plans and policies. This Area Structure Plan was designed to address these rules, regulations and policies to the extent possible.

2.1 Lloydminster Charter

The *Lloydminster Charter* is provincial legislation, approved by both the Province of Alberta and the Province of Saskatchewan. The *Charter* provides the framework for administration and governance for the City of Lloydminster. Where possible, it provides authority to apply legislation from one province to the entire City, thus enabling a "seamless" City.

As per Section 7(2) - Application of municipal governance and enactments of the *Charter*; Part 17 of the *Municipal Government Act* (Alberta) and all regulations made under that Part are declared to be approved enactments and apply to the City as a whole, except in respect of subdivision and replotting of land situated in the part of the City located in Saskatchewan.

2.2 Municipal Government Act

Alberta's *Municipal Government Act* in Section 633 grants a municipality the authority to adopt an Area Structure Plan (ASP) to provide a framework for the subdivision and development of land within its boundary.

Although it falls within the Province of Saskatchewan, this ASP has been prepared in accordance with Part 17 of the *Municipal Government Act* (2014, M-26), Section 633 (2a), which requires the following to be included:

- The sequence of development proposed for an area;
- The land uses proposed for the area, either generally or with respect to specific parts of the area;
- The density of population proposed for the area, either generally or with respect to specific parts of the area; and
- The general location of major transportation routes and public utilities.

The ASP may also consider any other matter that a Council determines necessary.

2.3 The Planning and Development Act, 2007

The *Planning and Development Act, 2007* completed in 2007 aimed to:

- Establish the planning and development system in the province;

- Identify provincial interests that guide provincial and municipal planning decisions in the development of communities;
- Support the development of environmentally, economically, socially and culturally sustainable communities;
- Enable co-operation between municipalities, planning districts and other jurisdictions and agencies in the delivery of planning services and infrastructure development with communities;
- Provide for public participation in the planning process; and
- Provide equitable dispute resolution and appeal processes.

The Planning and Development Act, 2007 assists the *Lloydminster Charter* by regulating subdivisions and replotting of lands located in the province of Saskatchewan.

2.4 Municipal Development Plan

The *City of Lloydminster's Municipal Development Plan* (MDP) approved July 22, 2013 is based on a shared vision and set of guiding principles which includes goals, objectives and general policies for land use planning and development within the City of Lloydminster.

The MDP contains policies that direct and guide the orderly growth and development of land over the next 20 years and beyond. The MDP presents a land use and development vision for the municipality that supports long-term social/community, economic environmental sustainability.

The Willows Area Structure Plan supports the MDP's intent by defining a development that uses land and infrastructure efficiently, addresses a diverse range of lifestyles and is adaptable to changing needs. Specific needs identified within the MDP are:

- Environmental Management;
- Residential Development and Neighbourhood Design;
- Commercial Development;
- Parks, Recreation, Open Space, Trails and Schools;
- Urban Design and Historical Preservation; and
- Transportation.

The City of Lloydminster's MDP Section 16.1.4 was created in conformance with the City's Terms of Reference and outlines municipal requirements for Area Structure Plan's.

2.5 Integrated Community Sustainability Plan

The *Integrated Community Sustainability Plan* (ICSP) Bylaw No. 2-2013 was approved on July 22, 2013. The purpose of the ICSP is a long term, systems-based framework from which solutions to complex sustainability challenges can emerge. Sustainability objectives are to be identified and consistency will be confirmed with City plans.

2.6 Inter-Municipal Development Plan

The *County of Vermilion River No. 24 and the City of Lloydminster Inter-Municipal Development Plan (IDP)* revised Bylaw 08-17 sets out specific policies with the intent of achieving the following goals:

- Establish a land use concept plan that generally outlines the future land uses that may develop over time within the IDP boundary;
- Provide more certainty of development potential in both the County and City portions of the IDP;
- Maintain and enhance mutually beneficial policies and relationships between the two municipalities;
- Outline a framework for the more detailed implementation of land development, economic development, transportation systems, municipal infrastructure and timing of development and infrastructure; and
- Continue to develop and maintain open lines of communication to resolve problems and seize opportunities for mutual benefits.

The goals of the IDP are for general informational purposes only as the Willows neighbourhood lies within the boundary of the City of Lloydminster and will adhere to the City's municipal requirements for development.

2.7 Official Community Plan

The *Official Community Plan (OCP)* Bylaw 13-2014 was approved in December of 2015. The OCP outlines the direction for the future development within the City of Lloydminster, the Rural Municipality of Britannia No 502 and the Rural Municipality of Wilton No 472.

The OCP objective is to provide goals, objectives and policies for the next 20 years of growth within the Planning District. Projected land needs for future city expansion is a major factor in the determination of an appropriate planning district boundary and land use policy framework.

Relevant proposed goals of the OCP are:

- To ensure a high quality of life for residents;
- To identify lands which are suitable for future urban and rural industrial, commercial, residential and other land use categories;
- To provide land use policy which allows for flexibility of choice in land use planning options, directions and standards;
- To utilize natural resources in the Planning District in a manner that is economically, socially and environmentally sustainable; and
- To collaborate in regional land use matter such as transportation, storm water and watershed management, utilities, recreation and economic development.

The OCP future land use concept illustrates the Willows neighbourhood to be within the boundaries of the City of Lloydminster and outside the future land use concept area. The above goals have been stated for general informational purposes only as they would not apply to the Plan area.

2.8 City of Lloydminster Growth Study

The *City of Lloydminster Growth Study* was completed by ISL Engineering in August of 2013. This *Growth Study* report is comprised of three parts including a growth study, environmental inventory and a servicing assessment. Objectives of the *Growth Study* are to:

- Determine the development capacity of the City's existing land supply;
- Forecast population, employment and housing unit requirements over the next 30 years;
- Provide a reasoned estimate of future land requirements for residential, commercial and industrial purposes; and
- Establish the recommended growth direction that sufficiently addresses the City's future medium-term growth needs.

Map 2 Current Land Supply of the *City of Lloydminster Growth Study* identifies the Willows for Residential land use. Commercial land use is also identified adjacent to 50 Avenue and south of 12 Street in the northwest Plan area. The Willows is also identified for short term immediate development.

2.9 Zoning (Land Use) Bylaw

The development of lands within the neighbourhood shall conform to the regulations within the *City of Lloydminster's Zoning Bylaw 12-2001* or equivalent approved legislation at time of development application. The Willows Area Structure Plan area is currently designated agricultural on the future land use map.

3.0 Site Context and Development Considerations

3.1 Surrounding Site Context

Lands west and south of the Willows Area Structure Plan area are generally cleared and used primarily for agricultural purposes. Light industrial development is located on the east side of 40 Avenue. The south boundary of the Plan area and 40 Avenue form the boundary between the City of Lloydminster and the Municipality of Wilton No. 472. 50 Avenue to the west forms the boundary between the City of Lloydminster and the County of Vermilion River No. 24.

3.1.1 Wallacefield

12 Street separates the Willows from the residential community of Wallacefield to the north. Wallacefield is actively under development and contains a variety of highway commercial and higher density residential land uses north of 12 Street along 50 Avenue.

3.1.2 Rural Municipality of Wilton No. 472

The Willows Area Structure Plan is entirely within the City limits of Lloydminster. Agricultural land in the Rural Municipality of Wilton No. 472 generally abuts the Plan area to the east and south but some light industrial development is underway east of 40 Avenue.

3.1.3 County of Vermilion River No. 24

The west boundary of the Plan area is the municipal boundary between the City of Lloydminster and the County of Vermilion River No.24. The area is generally undeveloped and primarily under agricultural production.

3.2 Existing Site Context

The Willows Area Structure Plan area is currently undeveloped and generally used for agricultural purposes. Small and larger low-lying areas and vegetation associated with low areas are evident in the Plan area as well as some abandoned and/or capped water and oil wells. (See Figure 3) A few small scattered tree stands also exist within the Plan boundary.

3.2.1 Topography

The Area Structure Plan area is generally flat with an elevation change of approximately 8m over the entire Plan area. The area drains from the southwest (approximately 656m) and northeast (approximately 648m) into a shallow natural channel that runs diagonally through the central Plan area. A small area in the northeast plan area slopes toward 40 Avenue.

3.2.2 Abandoned Wells & Utility Rights of Way

Abandoned Wells

AbaData identified 4 abandoned wells within the east area of NE ¼ Section 23 Twp 49 Rge 28 W3M and Select Engineering confirmed the coordinates of these well locations in the field. (See Figure 3) Two of these are abandoned oil wells and two are abandoned water wells.

Well license 48F004 operated by Murphy Oil Company Ltd. was abandoned in July 1948 and well licence 50F012 operated by Lloydminster Development Co. was abandoned in July 1950. Both of these are dry water wells.

Well license 02K312 and 35Z014 operated by Husky Oil Operations Ltd. was abandoned in June 2014 and July 2013 respectively. Both of these wells contained petroleum products. Accommodation has been made in the design to place the wellheads within a boulevard of a future roadway or an open space area. Some minor variances may be required to small portions of road rights of way to accommodate these abandoned wells. The Alberta Energy Regulator *Directive 079* establishes development requirements when construction is within close proximity to abandoned wells. *Directive 079* states that all structures must maintain a minimum 5 metre setback from an abandoned well to allow future access but Husky Oil Operations Ltd. has confirmed that a 10 metre set back(protected by an easement) will be mandatory from all building structures around well license 02K312 and 35Z014 to allow future access if needed. (See Figure 3)

Utility Rights of Way

An abandoned AltaGas pipeline (Reg No. 02B02873) originates east of the Plan area and continues west to a small abandoned above ground petroleum station just south of 12 Street at which point it continues north across 12 Street. This pipeline was abandoned in July 2014.

Sasktel (Plan No. 96B03597) and ATCO (Plan No. BT3416) have registered right of ways located along the eastern boundary of the Plan area immediately west of 40 Avenue. These two lines run the entirety of the eastern property.

SaskPower has record of two lines running north south immediately east of the 49 Avenue road allowance but no legal record was found. Further investigation will be required at the time of subdivision to confirm the removal and relocation of SaskPower's infrastructure.

Sask Energy also identifies a line north south in the west plan where it turns east and parallels south of 12 Street.

3.2.3 Government Road Allowance

The 49 Avenue road rights of way Plan No. BW2003 is registered east of 50 Avenue in the west Plan area. A 49 Avenue road closure application is currently submitted to the City of Lloydminster. With agreement from the City of Lloydminster, Lloyd Lakes Ltd. will acquire the closed road allowance and it will be integrated into the Land Use Plan.

Government road allowances also exist on 50 Avenue to the west, 12 Street to the north and 40 Avenue to the east. The road widenings provided on the Concept Plan for these three roadways are adequate to meet the City of Lloydminster's *Municipal Development Standards* for arterial roads.

3.3 Supporting Documents

The following full professional and technical studies are appended to this application to support the Willows Area Structure Plan. These include:

- Biological Resource Inventory and Assessment;
- Heritage Resource Review;
- Environmental Site Assessment Phase 1; and
- Geotechnical Investigation.

3.3.1 Biological Resources Inventory and Assessment

Fiera Biological Consulting completed a *Biological Resources Inventory and Assessment of NE-22-49-28-3, NE-23-49-28-3, and NW-23-49-28-3* in August of 2014. Fiera Biological Consulting recommended that two wetlands be considered for integration into the development concept. Due to existing conditions and engineering constraints it is not an option to retain the two wetlands in their natural state rather, the wetlands are proposed for alteration and reconstruction. Engineering constraints include:

Sanitary Servicing Design

All sanitary sewers will need to be pre-designed with minimum pipe slopes to help lessen the requirement for large fill areas to ensure that service piping can be installed below frost cover. It must be noted that the proposed sanitary sewerage trunk depth is predetermined based on upstream connections and therefore cannot be lowered which limit site grading alternatives.

The sewerage gravity system is the primary element which will determine the finished ground elevations within the neighbourhood design. *Municipal Development Standards* ensure that all gravity sewerage servicing must be installed with 2.85m of cover. The minimum site grade can be calculated by working backwards from the lot servicing pipe depth to the mainline in the roadway and back to the trunk.

Site Grading Design

As described above, the sanitary sewer design will impact the grading design directly. Most areas within the development boundary will require fill to ensure that service piping can be installed below frost grade. Preliminary grading models have confirmed that the majority of the site will require fill material. The vast expanse of the proposed stormwater management facility (SWMF) offers the preferred solution to obtain common clay over-excavation to mitigate the fill required throughout the development. SWMF design efforts will be utilized to focus on wetland reconstruction. This will include:

- Stockpiling of live soils separately from other stockpiles or earthworks operations;
- Determining locations that can be constructed to various water depths;
- Importing organic material as necessary from outside sources to help create shallower portions of the SWMF to allow for a variety of marsh depths; and

- Placing piped inlets around the perimeter of the SWMF to help reduce grading (fill) requirements; as opposed to one or two major inlets with potential for large, consolidated flows.

The developer will work with the City of Lloydminster to maximize the number of manmade wetland features while ensuring that the design of the development conforms to *the City of Lloydminster's Municipal Development Standards*.

3.3.2 Heritage Resource Review

Western Heritage conducted a *Heritage Resource Review* of NE 22-49-28 W3M, NE 23-49-28 W3M, and NW 23-49-28 W3M on September 8, 2014. Western Heritage concluded that no known archaeological sites are located within the site area. The likelihood of any intact archaeological sites exist are low. Therefore they have no concerns with the proposed development.

3.3.3 Environmental Site Assessment Phase 1

Solid Earth Geotechnical Inc. prepared a *Phase 1 Environmental Site Assessment of Vacant Agricultural Cropland NE ½ 22-49-28 W3M, NW ¼ 23-49-28 W3M and NE ¼ 23-49-28-W3M* on November 18, 2014 file # PE14-5042. This Phase 1 ESA did not identify any potential or actual environmental concerns from current or historical uses on the site and surrounding properties and stated that no additional environmental assessment is recommended.

Further investigation within the oil and gas lease may be required to investigate the potential presence of hydrocarbon-impact within these leases. Any future investigation that is required will be the responsibility of the lease holder.

Solid Earth found that the water wells were dry and that there was no hazardous material storage within the Plan area.

3.3.4 Geotechnical Investigation

Solid Earth Geotechnical Inc. prepared a *Geotechnical Investigation on N ½ 23-49-28 W3M and Portion of NE ¼ 22-49-28 W3M* on December 5 2014 file # PG14-1166. The subsurface conditions within the site area were considered suitable for the proposed ASP land uses. The construction of both shallow and deep foundations, residential housing units, installation of underground utilities and surfaced roadways are considered feasible.

A site grading plan was unavailable at the time of Solid Earth's investigation. Solid Earth would like to review the site grading plan prior to development. Site grading, site drainage, trench excavation and backfill, manhole structures and roadway pavement structures will be constructed in accordance to approved standards and utilize the recommendations from Solid Earth Geotechnical Report.

4.0 Development Concept

4.1 Vision

The Willows ASP shall provide a fully integrated residential community where people can live, learn, work, shop and play. It shall offer variety in housing forms and the shopping and services required to meet the day to day needs of residents. The expansive open spaces created by a large naturalized stormwater management facility combined with multiple neighbourhood parks will provide opportunities for both active and passive recreation. The community also has a variety of greenways and pedestrian linkages which will provide connectivity and encourage walkability.

4.2 Development Objectives

The Willows Area Structure Plan will achieve its vision by pursuing the following neighbourhood goals in pursuit of sustainable development and ensuring orderly, economic and beneficial growth.

4.2.1 Neighbourhood and Community

Complete and inclusive neighbourhoods meet citizen needs by contributing a wide variety of housing choice, services and amenities. Neighbourhood and community goals include:

- Integrating land use and transportation through higher density residential uses being near employment and in proximity to multiple transportation options. *(MDP Policy 4.3.1)*
- Promoting complete communities that include neighbourhood commercial, multi-use trails and recreation amenities. *(MDP Policy 4.3.3)*
- Encouraging higher residential densities to support better utilization of land and municipal infrastructure. *(MDP Policy 4.4.1)*
- Establishing parks and open spaces adding to local community character and connecting these to the continuous City-wide network of parks and open spaces. *(MDP Policy 4.4.2)*
- Supporting neighbourhood retail and employment opportunities accessed by multiple modes of transportation that may include, but not be limited to, financial institutions, grocery stores, restaurants, etc. *(MDP Policy 4.4.3)*
- Supporting community by providing: physical environments that allow families to grow, learn and socialize; gathering places that encourage interaction and bring people together; variety in transportation options for all ages; parks, trails and open spaces for the enjoyment of area residents; and, a range of housing choices for all resident stages of life needs. *(MDP Policy 5.2.1)*
- Fostering active living opportunity that promote the health benefits of walkability, reduce carbon emissions for air quality, and allow for social interaction to for enjoyment and associated mental health benefits. *(MDP Policy 5.2.2)*

- Addressing the need for places of worship, and where required to ensure they are situated on corner sites along collector and arterial roads. (MDP Policy 5.2.6)
- Respecting and reconstructing existing natural character while providing appropriate connections to surrounding areas. (MDP Policy 8.1.5)
- Promoting safe neighbourhoods in consideration of *Crime Prevention through Environmental Design* principles. (MDP Policy 8.1.1.13)

4.2.2 Residential

Residential land uses in the Willows shall be guided by the following objectives:

- Pursue a density target of 20 dwelling units per net residential hectare. (MDP Policy 8.1.1.2).
- Provide a range of housing forms and tenure. (MDP Policy 8.1.1.6)
- Provide and group multiple unit buildings near amenities, transportation options and intersections of neighbourhood entry points and collector streets. (MDP Policy 8.1.1.7)
- Neighbourhoods will have a broad and varied distribution of housing to meet the needs of all demographic and income groups. (MDP Policy 8.3.1)
- Apartment housing will be integrated into the neighbourhood character by strategic siting with emphasis on appropriate land use compatibility and transitioning, and transportation. (MDP Policy 8.3.5)
- Residential development with innovative and alternative design features that broaden the range of attainable and supportive housing choices in a manner consistent with the policies in the MDP should be encouraged. (MDP Policy 8.3.3)

4.2.3 Commercial

Commercial land uses support sustainable community development by being well-located and maintaining compatibly with surrounding uses as guided by the following:

- Neighbourhood commercial will be provided for meeting the daily shopping needs of the neighbourhood. (MDP Policy 8.1.1.14)
- Vehicle oriented commercial development will be located along major arterial roadways to minimize impacts on residential neighbourhoods. (MDP Policy 9.2.1)
- Neighbourhood commercial use, where not adjacent to schools and parks, may be defined at select arterial and collector roadway locations that would minimize conflicts with nearby residential uses while still providing convenient access. (MDP Policy 9.4.1)
- Small-scale neighbourhood commercial sites are supported as they conveniently serve the daily needs of residents within a five minute driving radius. (MDP Policy 9.4.2)

4.2.4 Parks, Schools and Open Space

An integrated system of open spaces, parks and community facilities are highly desirable to meet the needs of local and community wide residents as informed by:

- Neighbourhood residential areas will be integrated into City-wide multi-use trail systems by linking open spaces, activity nodes and other amenities. (MDP Policy 8.1.1.11)

- Provide adequate park and open spaces for the active and passive recreational needs of area residents with a preference for larger centralized parks that are more usable and easier to maintain. *(MDP Policy 8.1.1.12)*
- A pattern of community trails should provide connecting parks, natural areas, school sites and recreation and cultural facilities. *(MDP Policy 11.1.2)*
- Municipal Reserves are provided at 10% for all residential and commercial lands. *(MDP Policy 11.1.5)*
- Municipal Reserve may be considered up to 50% for areas in stormwater management facilities between the 1:100 year flood line and the 1:125 year flood line where enhanced. *(MDP Policy 11.1.6)*
- Maintain and/or reconstruct natural features whenever possible. *(MDP Policy 8.1.1.3)*
- Provide centrally located schools sites near neighbourhood parks. *(MDP Policy 8.1.1)*
- Schools shall be located where possible to have frontages along two roadways to facilitate effective vehicular access to the site. *(MDP Policy 11.5.1)*
- Land for schools shall be determined in cooperation with local school boards and where possible integrated with adjoining neighbourhood parks. *(MDP Policy 11.5.2)*

4.2.5 Urban Design

Neighbourhood character and urban design can be achieved through the integration of physical design and visual quality in the following ways:

- Promote the use of parks, squares, playgrounds, elementary schools, community facilities, churches and high schools along arterial roads to serve as neighbourhood focal points and encourage community cohesion and interaction. *(MDP Policy 8.1.1.5)*
- Promote walkability by use of functional and attractive linkages with adjacent neighbourhoods and the community's overall trails system. *(MDP Policy 12.1.3)*
- Support improved entranceways and gateways to enhance Lloydminster and its neighbourhoods by use of distinctive urban design features, lighting, enhanced vegetation and landscaping, and public art features. *(MDP Policy 12.1.4)*
- Encourage a visually coherent pattern of building heights by emphasis on achieving incremental height transitions between areas of contrasting character. *(MDP Policy 12.1.5)*

4.2.6 Transportation

Transportation systems required to serve the neighbourhood and connect to the greater community should provide safe, efficient and effective movement and design.

- Provide a hierarchical system of roadways with arterial roadways forming the boundary of the neighbourhoods, collector streets providing exterior circulation, and local streets access to houses and other sites; *(MDP Policy 8.1.1.8)*.
- Avoid dwellings fronting highways and arterial roadways. *(MDP Policy 8.1.1.9)*
- Ensure that collector roads may be used as future transit routes that would be within 400m walking distance of most homes. *(MDP Policy 8.1.1.10)*
- The Transportation *Infrastructure Master Plan* shall be used as the basis of transportation and infrastructure improvements. *(MDP Policy 13.1.1)*

- Noise attenuation shall be provided in appropriate levels for residential developments adjacent to major roadways as determined by a qualified professional. *(MDP Policy 13.1.3)*
- Walkability shall be promoted by use of a comprehensive network of sidewalks and cycling on multipurpose trails. *(MDP Policy 13.2.1)*
- Complete Streets design should be promoted to enable safe access for all users including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities. *(MDP Policy 13.2.2)*
- Neighbourhoods shall be designed with collector roadway designs that would allow for easy implementation of transit as the community grows. *(MDP Policy 13.3.2)*

4.2.7 Utilities

Local infrastructure to support community growth must be safe, efficient and effective in an environmentally responsible way to meet residents and community needs.

- New development should capitalize and efficiently utilize existing utility infrastructure. *(MDP Policy 14.1.2)*
- Water, sanitary sewer, and stormwater management servicing concepts shall be provided to support Area Structure Plan and subdivision process to ensure an efficient water network is provided. *(MDP Policies 14.2.2, 14.3.2, and 14.4.2)*

4.3 Land Use Concept

The Willows is a comprehensively planned development that utilizes the natural topography to create a large naturalized stormwater amenity in the heart of the community. A large school/park site and multiple neighbourhood parks provide opportunities for active and passive recreation throughout the community. To ensure safe, attractive and convenient access to amenities and services dedicated greenways are also included.

The concentration of Commercial and Medium Density Residential proposed along 50 Avenue at 12 Street provides high visibility and easy access to shopping and services as shown in Appendix B. Low Density Residential is the primary land use proposed east of the commercial corridor. **(See Figure 4)** A second Medium Density Residential site proposed south of 12 Street in the east Plan area has access to 12 Street and is convenient to the Neighbourhood Convenience Commercial land use in that area. The ASP includes a range of land uses including:

- Low and Medium Density Residential;
- Commercial;
- Parks and Open spaces;
- Institutional (School/Park); and
- Stormwater Management Facility.

Architectural guidelines for the community will be established by the developer prior to building construction. These guidelines will be administered by the developer. The Willows primary accesses will be enhanced with features (i.e. entrance sign, landscaping, lighting, etc.) that provide visual confirmation of these important locations. Examples of entry features are included in Appendix C.

4.3.1 Residential

The Plan area includes a range of Low and Medium Density Residential land use that will conform to the requirements set forth in the Land Use Bylaw approved at the time of subdivision. Low Density Residential may include single family and/or semi-detached housing forms. Medium Density Residential may include townhouse and/or four storey apartment development. Overall the neighbourhood will achieve a ratio of multiple dwelling unit development in the range of 70% single-family and 30% multi-family. The Willows has an overall density of 31.01 dwelling units per net residential hectare. Illustrative examples of low and medium density housing forms are included in Appendix D.

4.3.1.1 Low Density Residential

Low Density Residential is the primary land use in the Plan area. Access to Low Density Residential will be provided by a combination of front and rear driveways. Lanes are generally incorporated in the Low Density Residential areas when higher traffic volumes are identified. Lane product also contributes to a more attractive "front porch" atmosphere in the community and provides "eyes" on the street. Low Density Residential has a density of 25 units per net residential hectare.

4.3.1.2 Medium Density Residential (MDR)

To address market demands, two forms of Medium Density Residential (MDR) housing are proposed within the neighbourhood. MDR sites are generally located on or within walking distance of transit routes and adjacent to a collector roadway. MDR may include townhouse and/or apartment style development.

Multiple Unit

Medium Density Residential Multiple Unit is generally designated along collector roadways and will be developed as fee simple street oriented townhouse with opportunities for both front and rear drive access. Townhouse units will utilize the R3 - Low Density Residential District with a maximum density of 50 units per net hectare. (As per *Zoning Bylaw 12-2001*)

Locations for fee simple townhouses are identified on *Figure 4*, however all locations are subject to change as development progresses. An Area Structure Plan amendment will be required to facilitate any revisions to townhouse locations within the Plan area. This ASP amendment will be facilitated concurrently with future bylaw amendments.

Apartment / Townhouse

One larger Medium Density Residential Apartment/Townhouse site is located adjacent to the Commercial land uses east of 50 Avenue. The second smaller Apartment/Townhouse site is designated south of 12 Street and east of the future north-south collector in the northeast Plan area. These sites may be districted R4 or R4A.

The City of Lloydminster and Lloyd Lakes Ltd. have agreed that the approximately 1.35 hectare Medium Density Residential Apartment/Townhouse site in the northeast Plan area may also be available for the development of a church, social housing or day care facility. The terms of this alternative MDR land use say that it shall be advertised for sale for one (1) year from the date of the land use approval. If the lot is not sold for the intended purpose within the one (1) year

time frame, the owner may proceed with standard MDR development as depicted within the Willows Area Structure Plan.

Both MDR sites may be developed with condominium style town houses and/or apartments. Both sites are located in proximity to shopping, services, restaurants and recreational facilities. These locations also support walkability and provide good access minimizing short-cutting of traffic through the community.

4.3.2 Commercial

Two Commercial sites are allocated in the Plan area. Commercial areas within the Willows will provide goods and services to local and surrounding residents and also provide employment opportunities within the community. Commercial uses along 50th Avenue are in a prominent 'community gateway' location, and developments here should be designed to define, strengthen, and complement this gateway character and identity. Gateway development considerations should include landscaping, building siting, and architectural design matters.

The largest Commercial land use is designated along the 50 Avenue corridor. This commercial area will provide major shopping and services within the community and will be a destination for residents beyond. Its orientation along 50 Avenue and 12 Street provides safe and easy access and high visibility. This large area may be districted C2-Highway Commercial and/or C5-Service Commercial.

A second smaller Neighbourhood Commercial Site is designated south of 12 Street adjacent to the smaller Medium Density Residential land use. This location provides convenient neighbourhood level commercial opportunities and also captures the drive home traffic in the northeast Plan area. It will utilize the C3-Neighbourhood Commercial District.

4.3.3 Parks and Open Space

The Plan area contains a variety parks and open spaces to promote active, healthy lifestyles while connecting the entire neighbourhood. (See Figure 5) These facilities have been strategically distributed to encourage their use within local sub-areas, and are designed at sizes that can support active recreation uses and efficient maintenance practices. All off street trails will utilize the standard trail cross section as shown in *drawing 9-100* of the *City of Lloydminster Municipal Development Standards*. Landscaping within the neighbourhood will be constructed to a minimum design standard which includes grade, level and seed. Further landscaping improvements will be confirmed at the time of subdivision.

The parks and open spaces proposed in The Willows consist of a:

- School/Park site;
- Neighbourhood Parks;
- Greenways; and
- Stormwater Management Facility.

4.3.3.1 School/Park

An approximately 6.60 hectare school/park site is designated in the northwest Plan area immediately south of 12 Street and east of the Commercial land use. The school/park site has convenient frontage access to collector roadways to the east and south. The east-west collector south of the school will ultimately link the school/park site to the entire neighbourhood. Collector links are also provided to the south. To minimize traffic conflicts Low Density Residential and Street Oriented Townhouse units adjacent to the school/park site will be accessed by rear lanes.

A draft *Education Facility Needs Assessment Report* completed by WSP Parsons Brinckerhoff Engineering Services in September 2015 established the principle framework for existing and future school needs in the City of Lloydminster. That report identified the need for a new school complex south of 12 Street. Initial contact with the City of Lloydminster Public School Board also confirmed the need for a school site in that area because schools in the vicinity are near maximum capacity. The City of Lloydminster Catholic School Board also indicated that locating a joint use elementary school site was a high priority. Staging of development will influence both the Public School Board and Catholic School Board's decision in future school site locations.

4.3.3.2 Neighbourhood Parks

Four neighbourhood parks dispersed throughout the Plan area will provide residents with opportunities for passive and active recreational activities in the community. These neighbourhood parks are conveniently located along local and collector roadways for easy access for all residents.

The largest of the three neighbourhood parks (approximately 2.00 hectares) is linked with the Stormwater Management Facility in the south Plan area and adjacent to the school/park site. It is located at the terminus of the west collector and the northwest corner of the stormwater management facility. This park will provide residents access to the trails designed above the High Water Line of the stormwater management facility. This park also has potential for more active playgrounds or sports fields.

Three other neighbourhood parks are dispersed throughout the Plan area and are partially surrounded by residential lots and may provide passive and active recreational activities in the form of trails and tot-lots. The first neighbourhood park is approximately 0.54 hectares and is located in the southwest corner of the Plan area. The second neighbourhood park is located in the north central Plan area east of the north-south greenway and is approximately 0.51 hectares. The third neighbourhood park will be approximately 0.61 hectares and will be located in the southeast Plan area.

The exact alignment and structure of pedestrian trails will be confirmed through the subdivision process.

4.3.3.3 Greenways

The City of Lloydminster already has an extensive walkway/greenway system and the Willows will build on that existing infrastructure. This system is expanded in the Willows through dedicated greenways that connect with on street sidewalks and neighbourhood parks while

also creating buffers between residential units. Two areas designated for Municipal Reserve in the Plan area contribute to this greenway system.

The primary greenway proposed extends north from the large stormwater management facility in the south central Plan area to 12 Street. This greenway is generally up to 15m wide but it does widen out as it ties in at 12 Street and the stormwater management facility. A width of up to 15m will allow the future trail to meander through the greenway rather than be totally straight. Enhanced safety mitigation will be located along the proposed east-west collector and this primary greenway. A conceptual rendering showing safety mitigation such as a raised signalized crosswalk is shown in section 5.2.

The other greenway located in the northeast Plan area is approximately 0.88 hectares in size. It is identified as greenway but is substantial enough to accommodate some passive park activities and a tot lot. It varies from approximately 20 meters wide on its west end to approximately 64 meters wide on the east. This greenway is the final link required to complete a full east west connection through the northern portion of the Willows.



4.3.3.4 Stormwater Management Facility

One stormwater management facility (SWMF) is proposed within the Willows. This facility is approximately 16.42 hectares. This facility provides a utility function and its size and placement largely coincide with the proximity of the primary low area within the Plan area. The north-south greenway terminates at the stormwater management facility. This greenway will connect the Willows into the walkway system to the north proposed through Wallacefield.

If the developer develops the perimeter of the SWMF above the 1 in 100 year high water line to a standard in which both passive and active forms of recreation are accommodated Municipal Reserve credit will be granted. The exact location and type of pathways will be confirmed through the subdivision process.

Low areas are not proposed for preservation in their natural state due to municipal servicing constraints but the design and construction of the SWMF will include re-constructed wetland features. The design of these features will incorporate low maintenance solutions to address water quality treatment, soil stabilization and flood prevention. While the majority of the SWMF will be utilized as a standard wet pond facility with deep open water in the centralized portion of the water body, shallower zones around the pond perimeter will be allocated for wetland features. The *Biophysical Resources Inventory and Assessment* report prepared for the Willows neighbourhood outlined recommendations and considerations for design and

construction of wetland features. The constructed wetland features that enhance the shoreline will have varying depth ranges and widths to accommodate for naturalized habitat diversity. The depth zones include:

- A. "open water" at depth variance from 50cm to 2m;
- B. "deep marsh" at depth variance from 30cm to 50cm;
- C. "shallow marsh" at depth variance from 5cm to 30cm;
- D. "wet meadow" at depth variance from 0cm to 25cm - partially dry in late summer/ early fall

Wetland feature areas will also require flatter or low-slope bed floors between 10:1 and 30:1 slopes. These shallow sloping zones will be repopulated with transplanted live wetland soils salvaged from the current wetlands both on-site and off-site as required. The shallower sloping zones will mesh with the SWMF design along the perimeter of the deeper functioning facility. To help protect the established wetland features from storm sewer collection discharge, the minor storm sewer systems will be designed to by-pass the wetland areas (either below or adjacent to) and discharge directly into the deeper permanent pool in the center of the SWMF. The perimeter wetland features will be designed to receive less abrasive flows such as surface run-off collected from adjacent parkway and trail linkages. This method of run-off collection will help to ensure that the wetland features function with seasonal precipitation patterns.

Sediment and erosion controls will be put in place to ensure the success and functionality of both the wetland features as well as the stormwater facility as a whole.

Phased construction of the SWMF and wetland features will be reviewed at the detailed engineering design level for each stage of development. Due to the topographical nature of this proposed neighbourhood, the location and size of each staged development will determine the challenges and strategies required to adequately address the phased construction of the SWMF and wetland features. To ensure this development is economically feasible, the extent of the SWMF construction will be dependent on the site grading component required at each stage.

4.3.4 Municipal Reserve

The City of Lloydminster *Municipal Development Plan* requires a dedication of 10% Municipal Reserve (MR) on all developable lands including commercial areas.

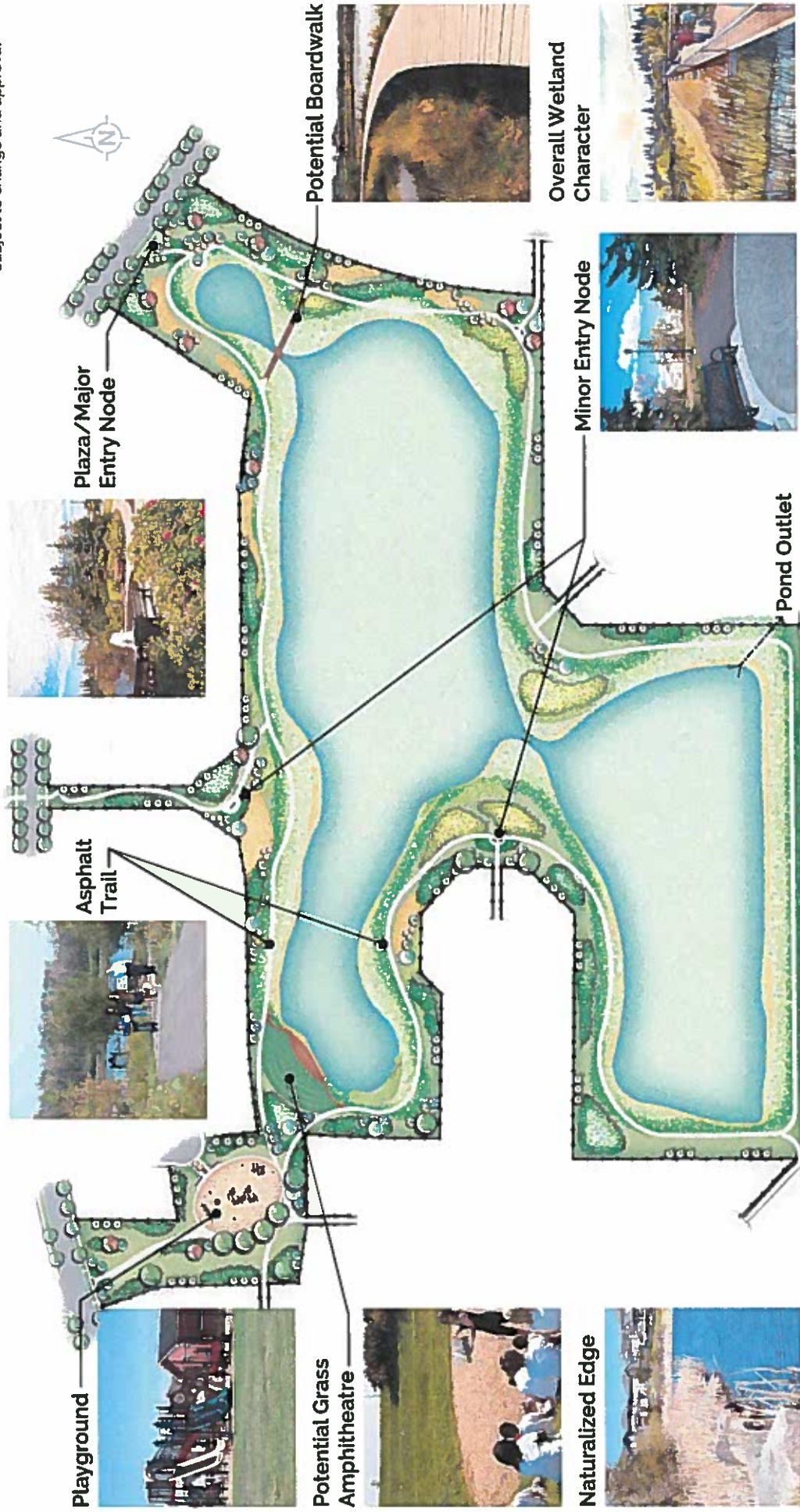
A strip of MR dedication is conceptually illustrated around the stormwater management facility because the City of Lloydminster has agreed in principle that areas above the high water line will be eligible for MR dedication. (See Figure 4) The exact area of this MR will be refined through the subdivision process.

4.3.5 Natural Features

The plan area is generally cleared and low areas are not proposed for preservation in their natural state due to municipal servicing constraints; however, the design and construction of the Stormwater Management Facility will include re-constructed wetland features through the provision of Municipal Reserve or public utility lands.

Wetland Concept*

*Concept Only. All features are subject to change and approval



Playground



Asphalt Trail



Plaza/Major Entry Node



Potential Grass Amphitheatre



Potential Boardwalk



Naturalized Edge



Minor Entry Node



Overall Wetland Character



Pond Outlet


 Mayor

 City Clerk

Table 1: Land Use Statistics

Land Uses	Hectares	%GDA	Units	%Units	Pop.	%Pop.
GROSS AREA	137.63					
12 Street Road Widening	2.32					
50 Street Road Widening	0.61					
40 Street Road Widening	1.57					
GROSS DEVELOPABLE AREA	133.13	100%				
Other Land Uses						
School / Park / Municipal Reserve	13.31	10.0%				
Stormwater Management Facility/ PUL	15.19	11.4%				
Circulation	23.96	18.0%				
Commercial	12.44	9.3%				
Total Other Land Uses	64.9	48.7%				
Residential Land Uses						
Low Density Residential	57.04	42.9%	1,426	67.5%	3,992	76.3%
Medium Density Residential Multiple Unit	6.82	5.1%	255	12.1%	459	8.8%
Medium Density Residential Townhouse / Apartment	4.37	3.3%	432	20.4%	777	14.9%
Total Residential Land Uses	68.23	51.3%	2,113	100.0%	5,228	100.0%

Table 2: Student Generations

School	Elementary	Junior High	Senior High	Totals
Public	267	134	134	535
Catholic	134	67	67	268
Total	401	201	201	803

School	Elementary	Junior High	Senior High
Public	2 students per gross developable hectare	1 students per gross developable hectare	1 students per gross developable hectare
Catholic	1 students per gross developable hectare	0.5 students per gross developable hectare	0.5 students per gross developable hectare

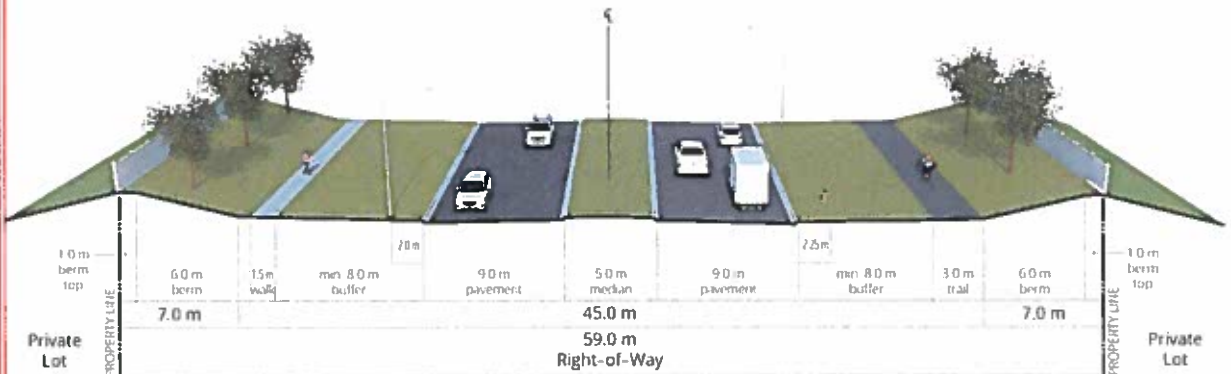
Source: Typical Public and Catholic School Board demographic generator.

5.0 Transportation

A series of local and collector roads within the neighbourhood accommodates private automobiles, transit, pedestrians, and cyclists in a logical, safe and efficient manner. The transportation system also minimizes walking distances by providing a network of interconnected streets and pedestrian linkages. All local road, lane and collector road cross sections constructed within the Willows neighbourhood will adhere to the *City of Lloydminster's Municipal Servicing Standards* which includes complete streets design considerations that enable safe access for pedestrians, bicyclists, motorists, and transit riders of all ages and abilities.

5.1 Arterial Road Network

Arterial roads are not included within the Plan but they form the perimeter on the north, east and west boundaries of the Willows Area Structure Plan. 12 Street is on the north boundary, 50 Avenue on the west and 40 Avenue on the east. (See Figure 6) The *City of Lloydminster Municipal Development Standards* currently illustrates a 59 metre arterial right of way standard in drawing 1-103 however the City has indicated that additional widening may be required. For purposes of this ASP Select has assumed an offset of 31m to the centerline of the existing road rights of way. These right of way widths exceed typical arterial roadway requirements seen in other developments, but the City of Lloydminster is currently drafting an update to their off-site levy model which may be modified to address the acquisition of arterial roadways greater than that required for a four lanes divided/undivided arterial.



City of Lloydminster Standard Cross Section
1-103 – Urban Arterial (59.0m ROW)

5.2 Collector Road Network

This collector roadway network provides efficient vehicular access to and from the community. Roundabouts may be utilized within the Plan area to assist in reducing traffic short cutting, congestion and promote traffic calming. Particular attention will be paid to the north-south greenway crossing to ensure pedestrian safety. Exact design measures on this collector cross

walk will be determined at the time of subdivision. The Mid-Block Crosswalk illustration below identifies options that may be explored to ensure maximum safety.

THE WILLOWS AREA STRUCTURE PLAN Mid-Block Crosswalk

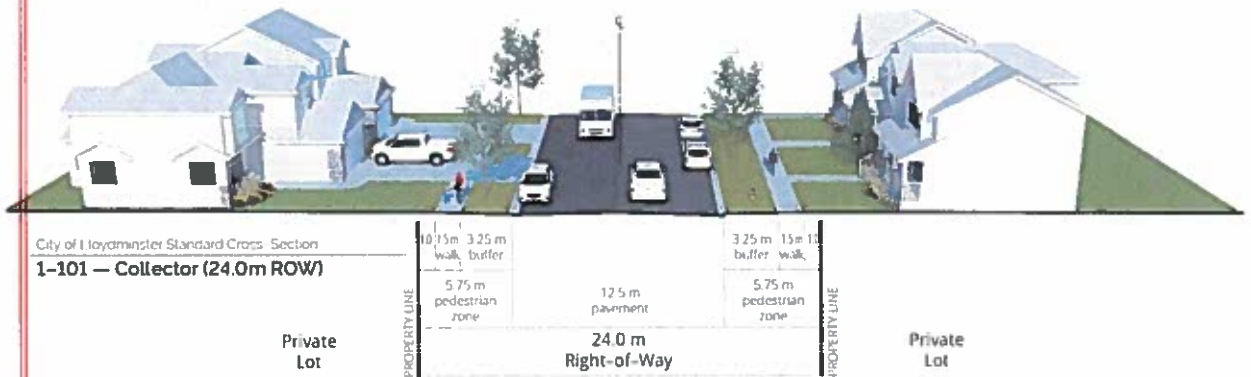


The primary collector roadway in the neighbourhood curves through the central Plan area from east to west from 50 Avenue to 40 Avenue. A large low area in the south central Plan area will be reconstructed as a stormwater management facility. The curvature of the primary collector has been shaped by the location of this low area and the desire to create some benefitting developable area north of it. The primary collector road alignment is also shaped by its tie in points at 50 and 40 Avenue. The east access aligns with an existing intersection across 40 Avenue in the County of Wilton. The west access at 50 Avenue is centred on the property line west of it.

There are also two collectors designated south from 12 Street. The exact location of these collectors will be confirmed upon completion of the Traffic Impact Assessment. Both collectors create T-intersections as they meet the primary central collector. The western collector off of 12 Street aligns with the existing 47A Avenue to the north and the east collector aligns with a future collector proposed in Wallacefield to the north.

Two collectors also extend south from the primary collector to the City boundary. These will ultimately provide links to future expansion areas. The west collector link to the north also borders the proposed school park site adjacent to 12 Street in the northwest Plan area. The primary collector borders the school/park site on the south. The west collector divides the stormwater management facility to the east and the commercial area adjacent 50 Avenue to the west.

Collector roads within the neighbourhood will utilize the City's standard collector road cross section as depicted in drawing 1-101 of the *City of Lloydminster Municipal Development Standards*.



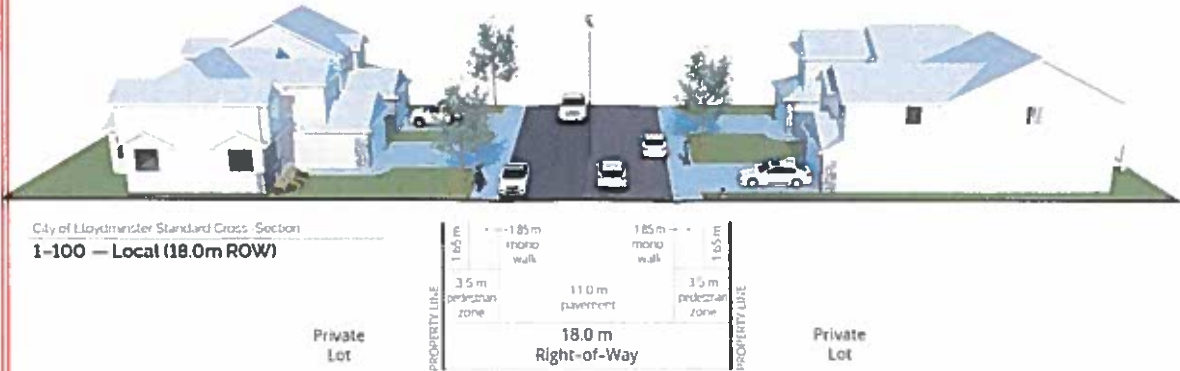
5.3 Local Road Network

The local road concept is largely designed in a grid pattern but some cul de sacs are incorporated. Lanes are also incorporated. Lanes diversify housing choices within the community and create a more activated streetscape. Lots in the design that border the school/park site are accessed by a lane to eliminate front drives and provide more on street parking. Lane is also utilized to eliminate front drives where higher traffic volumes occur generally at the entrance locations.

Two dry water wells and two oil wellheads exist in the Plan area. The local road has been designed to incorporate three of the wells into the boulevard/ carriage way of future local

roads. To ensure that engineering standards are not compromised some minor variances to standards may be required in very specific locations to accommodate these wells. Details and requirements related to these wells will be reviewed with the City of Lloydminster through the subdivision stage. The water wells may not require any setback. The other abandoned wellhead may be incorporated into the parking lots of Medium Density Residential sites provided access to the operator is still protected.

Drawing 1-100 within the *City of Lloydminster's Municipal Development Standards* illustrates the City's local road cross section that will be utilized in the design of all local roadways.



5.4 Lane Network

Lanes will be utilized throughout the Willows neighbourhood to eliminate backing issues and create a more interactive streetscape. Single family, semi-detached and townhouse units may all incorporate rear lane access. The *City of Lloydminster Municipal Development Standards* illustrates a typical lane cross section in drawing 1-104.



5.5 Pedestrians and Cyclists

On street sidewalks, dedicated greenways and stormwater management facility walkways provide a variety of pedestrian experiences within the Willows neighbourhood. (See Figure 5) Cyclists will share all multi-use trails with pedestrians and can also utilize local and collector roads for added travel flexibility. This experience will be enhanced by the inclusion of more pedestrian friendly "front porch" streetscapes by restricting front drive garages along the local and collector roads. The north south greenway in the Willows Area Structure Plan ties in with walkways proposed in the Wallacefield neighbourhood to the north.

6.0 Servicing

The Willows ASP site is included in the City of Lloydminster's Master Servicing Plans and all municipal services will be designed to meet or exceed the current City of Lloydminster *Municipal Development Standards* (MDS). Additional details can be found in the Servicing Design Brief submitted to the City under separate cover. Servicing of future developable lands west and south of the Willows is dependent on the extension of the South Trunk Main and expansion of the water distribution network along 50 Avenue.

6.1 Stormwater Management System

Currently, an existing storm sewer discharges stormwater runoff within the Willows neighbourhood lands. This runoff is collected from upstream basins north and east of the Plan area and discharged in the northwest area immediately south of 12 Street. (See Figure 7) This discharge appears to be the main source for runoff patterns in the immediate area as seen from recent aerial photographs. The proposed drainage basin for the Plan area may incorporate off-site runoff collected from future arterial roadway improvements such as 12 Street and 50 Avenue. The extent and responsibility of these off-site basins need to be confirmed with the City of Lloydminster.

The drainage pattern travels south-eastward to an existing wetland located in the central location of the Willows neighbourhood. The wetlands continue to drain naturally to the southeast, leaving the City of Lloydminster municipal boundary, entering into the neighbouring Rural Municipality of Wilton No. 472.

The entire neighbourhood within the Area Structure Plan (ASP) area will be serviced with a minor storm sewer system. This practice follows suit with the current City of Lloydminster's *Municipal Development Standards* and will allow for storm sewer servicing to all residential and commercial properties. Both the minor (piped) and major (overland) drainage systems will be directed to a centrally located wet pond stormwater management facility (SWMF).

A stormwater trunk main servicing the lands west of the Willows ASP plan area is proposed in the City's *Stormwater Master Plan 2015*. This trunk main is conceptually located south of the Willow ASP plan area. The conceptual stormwater trunk main's outfall is illustrated in the same vicinity as the proposed discharge point of the SWMF planned for the Willows. This discharge location is expected to be improved to an open ditch concept that will allow for a deeper channel which may significantly improve the site improvement requirements for the Willows development.

The current overland drainage pattern at this outfall location is considerably shallow and flows in a south east direction thru existing agricultural lands. Therefore, improvements to accommodate for an open ditch concept as per the City's *Stormwater Master Plan 2015* are favourable at the time of development. From preliminary neighbourhood designs, it is possible that the Willows neighbourhood SWMF will be lower than the current drainage path to the south. Therefore, downstream solutions as proposed in the City's *Stormwater Master Plan 2015* or other alternatives discussed in the Servicing Design Brief may be required to ensure the

feasibility of the Willows servicing design, which will be determined at the time of detailed design and subdivision.

A pre-development flow rate was evaluated for the lands currently being utilized as agricultural farmland. The topography and land mass were reviewed to calculate a pre-development flow rate of 3.78 L/s/ha. The pre-development flow rate summary is published in the Design Brief. To help ensure the protection of lands downstream from the Willows development, the maximum release rate of runoff will be controlled to meet the City's requirement of 1.5 L/s/ha. This proposed release rate will effectively provide for 2.5 times less flow rate than the current agricultural lands shed during major rainfall events.

The developer will work with the City & Water Security Agency during detailed design at the time of subdivision to ensure downstream conditions related to drainage are not negatively impacted compared to conditions prior to development of the Willows.

A draft *Biological Resources Inventory and Assessment* report was completed in October 2015 that provides detailed information relating the established wetlands and treed areas existing throughout the Willows neighbourhood. This report offers recommendations and guidelines to remediate/reconstruct wetland features within an urbanized development.

The topography of the lands within the Willows ASP does not offer the opportunity to retain any current wetland features while providing for a neighbourhood design that meets current municipal servicing standards. Therefore, the proposed stormwater management facility (SWMF) will include for the design and construction of wetland features around its perimeter. The location of the SWMF will be centrally located, very similar to the location of the existing larger sized wetland features.

The lands within the Willows ASP area are required to be in-filled with native clay to construct the land in such a manner that municipal servicing can be constructed below local frost levels. The significant amount of clay fill required to construct the neighbourhood will be generated from over-burden during the SWMF construction. The wetland features will be constructed with local organic material after the over-burden clays have been removed from the SWMF area.

6.2 Sanitary Sewer System

There are no existing sanitary sewer collection systems through or within the Willows Area Structure Plan (ASP) area. The City of Lloydminster's *Sanitary Sewer Master Plan, 2016* illustrates the requirement for the South Trunk Main, which extends from the City's future southwest development area (south of 12 Street), eastward through the Willows ASP area, and continuing northward through the future Wallacefield Neighbourhood, and connecting to the East Trunk Main at the north boundary of the Colonial Park Neighbourhood.

Ultimate servicing of the Willows ASP lands will require the South Trunk to be in place between 12 Street and 25 Street (thru the proposed Wallacefield Neighbourhood). (See Figure 8). The development timeline for the Wallacefield Neighbourhood is currently unknown and will be determined by the housing markets, development staging and off-site servicing strategies which would adhere to the *City's Sanitary Sewer Master Plan, 2016*. The serviceability design for the Willows ASP lands has been verified to meet the current MDS and generally confirms to the *City of Lloydminster's Sanitary Sewer Master Plan, 2016*.

The forecasted timeline to construct and implement the downstream South Trunk Main system downstream of the Willows is expected within 5 years. It is realistic that interim servicing alternatives are available by connecting to the nearby existing sewerage system to temporarily introduce additional sewerage volumes utilizing spare system capacity by way of gravity, pumping and/or off-peak pumping. This interim servicing scenario would take advantage of spare flow capacity in the existing piped system during off-peak flow times.

If required, a supplemental 'interim sanitary servicing design brief' will be submitted to the City of Lloydminster based on a temporary servicing scheme. This supplemental design brief would outline available connection options, flow capacity limitations, on-site (off-line) storage requirements (if required) and define the maximum interim servicing area available on a temporary basis.

6.3 Water Distribution System

Currently, no existing watermain distribution mains have been constructed through or within the Willows neighbourhood. Multiple connections to the City's existing and future watermain network will be required to adequately service the ultimate development to meet servicing criteria mandated in the City of Lloydminster's current *Municipal Development Standards (MDS)*.

The majority of land is serviceable with the existing available connections prior to future Wallacefield connections. The Willows neighbourhood will be restricted to the three water distribution main connections currently availability at or near the intersections of 12 Street / 50 Avenue and 12 Street /47A Avenue. (See Figure 9)

Detailed water modelling analysis should be verified to ensure adequate serviceability (meeting the City's MDS) at each proposed stage of development in the Plan area. This analysis is still recommended for each stage of development when the additional watermain connection(s) are made available from Wallacefield, north of the eastern portion of the Willows neighbourhood.

6.4 Shallow Utilities

Franchise utilities (including gas, power and telephone service) will be extended into the undeveloped portion of the Plan area from existing services within the developed portion. Extension of these services will be established in detail at the development stage.

7.0 Implementation and Staging

7.1 Staging

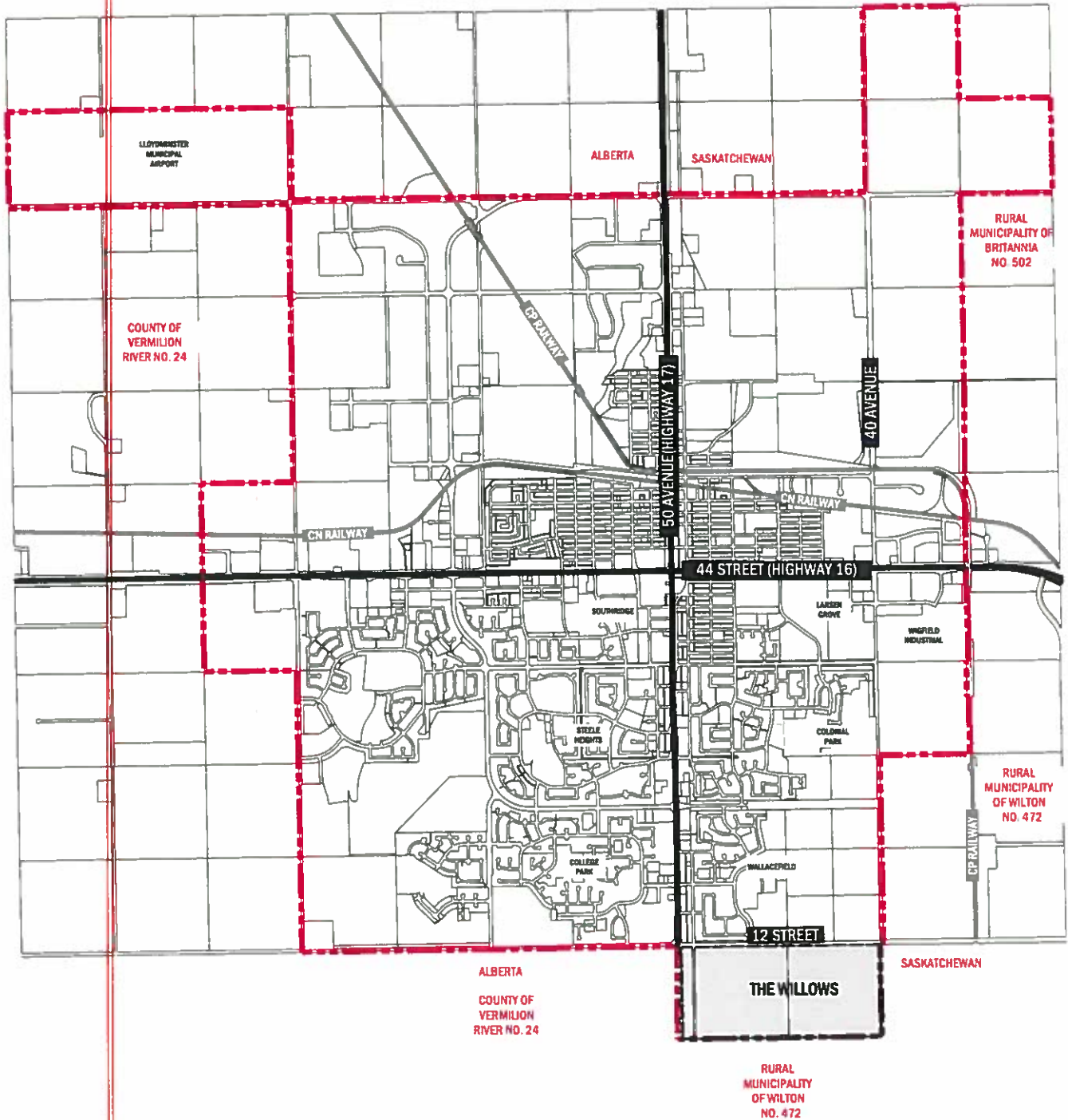
Staging of development in the Plan area will follow the logical and economic extension of roadways and services to the area as driven by market demand. Staging is subject to change and will be confirmed at the time of subdivision.

The Willows will be developed west to east commencing with the commercial areas adjacent to 50 Avenue. The extension of services from the existing development to the north in Wallacefield will also dictate the rate of development in the Willows. **(See Figure 10)**

APPENDIX A

Area Structure Plan Figures





LEGEND

- ASP AREA
- CITY BOUNDARY
- HIGHWAY
- RAILROAD



CONTEXT PLAN

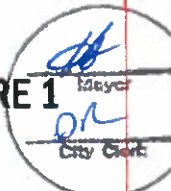


SCALE 1:50,000

THE WILLOWS
CITY OF LLOYDMINSTER

0153-14011_04_PRFD01.DWG
Jcalder May 12, 2018

FIGURE 1



AREA ST
E PLAN



12 Street

50 Avenue

40 Avenue

LLOYD LAKES LTD.
N.E. 1/4 SEC. 22-TWP. 49-RGE. 28-W. 3Mer.

LLOYD LAKES LTD.
N.W. 1/4 SEC. 23-TWP. 49-RGE. 28-W. 3Mer.

LLOYD LAKES LTD.
N.E. 1/4 SEC. 23-TWP. 49-RGE. 28-W. 3Mer.

CITY BOUNDARY

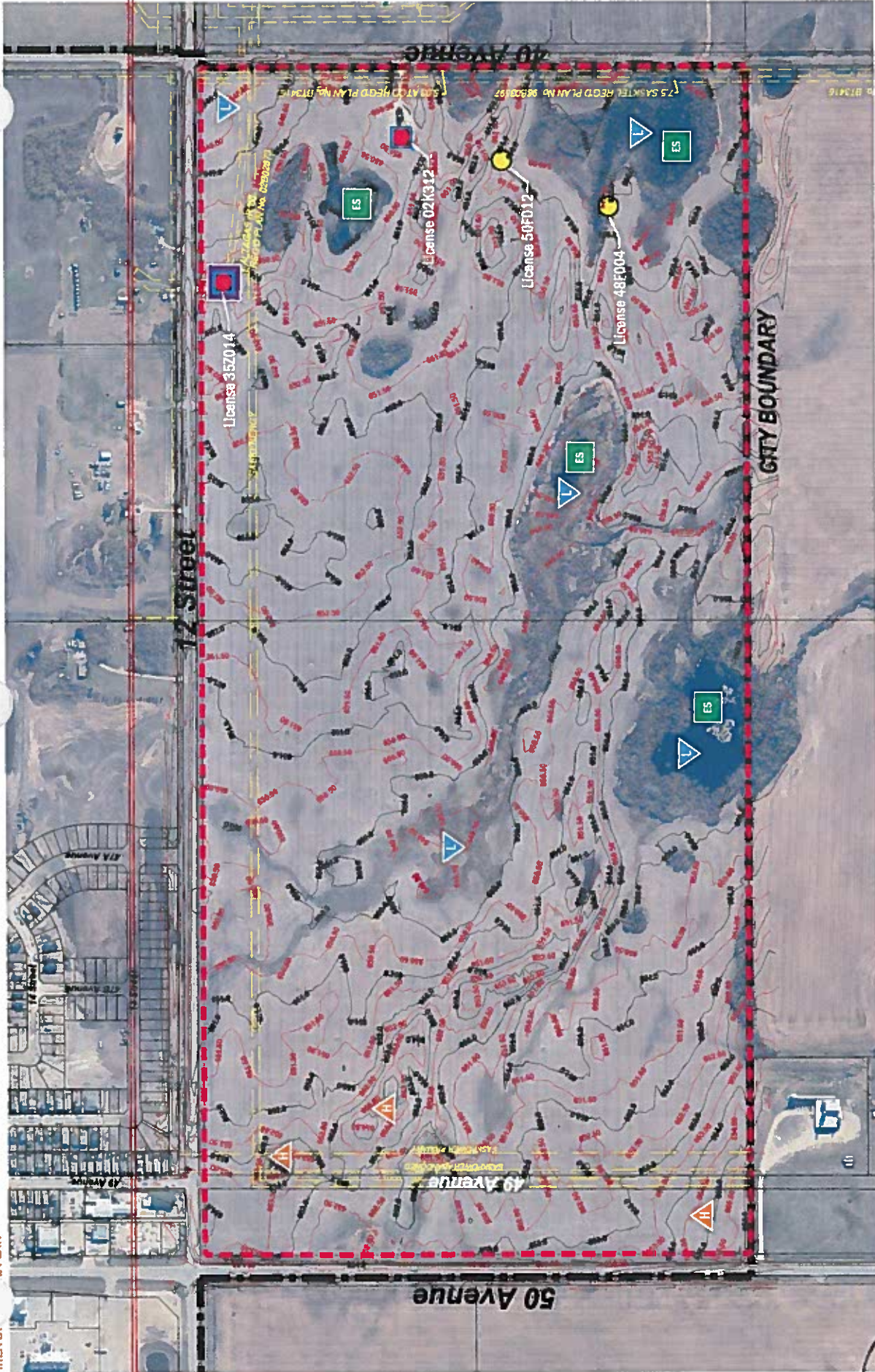
LEGEND

- OUTLINE PLAN BOUNDARY
- OWNERSHIP BOUNDARY
- CITY BOUNDARY

LAND OWNERSHIP PLAN



THE WILLOWS
CITY OF LLOYDMINSTER



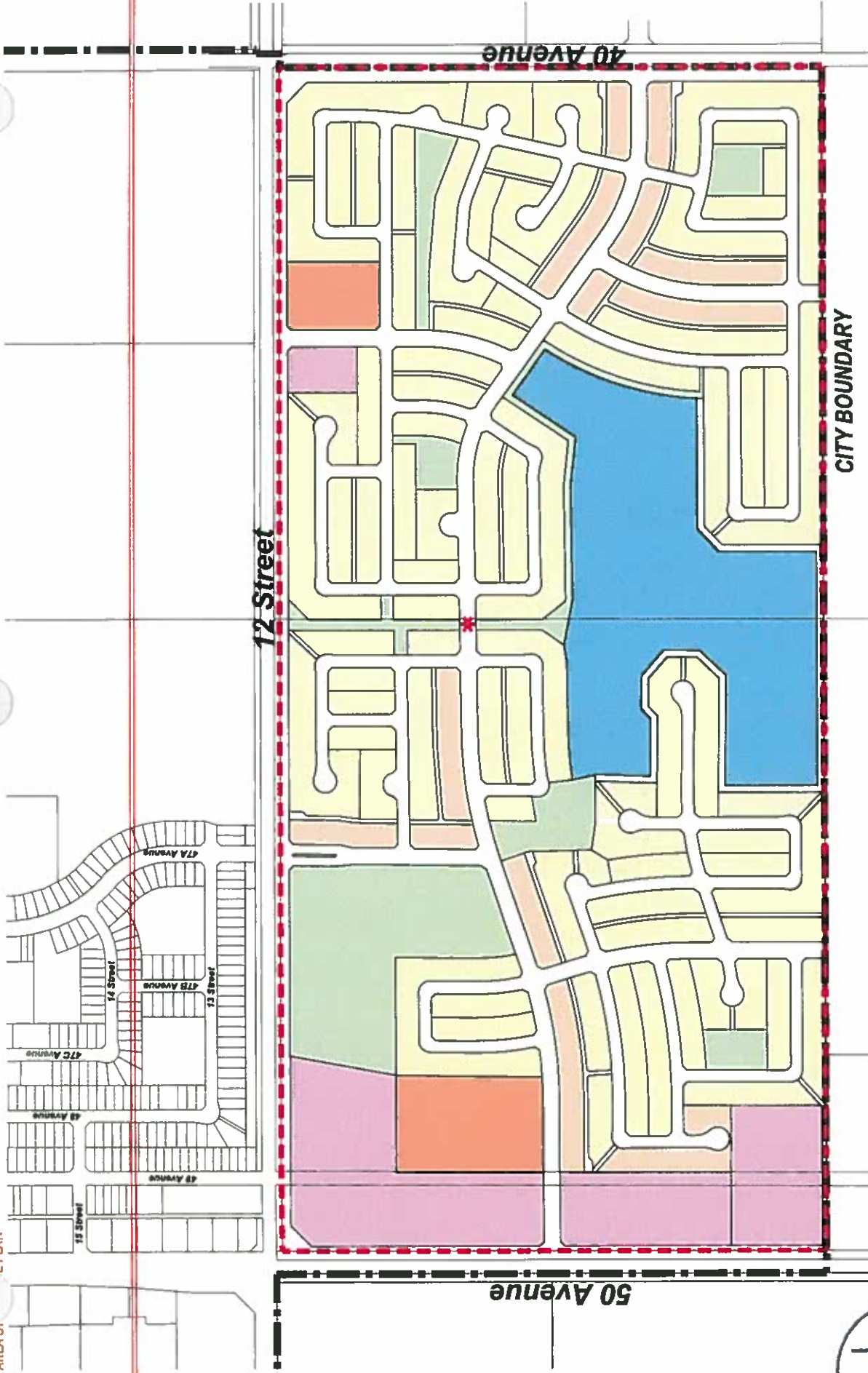
- LEGEND**
- OUTLINE PLAN BOUNDARY
 - CITY BOUNDARY
 - THE WILLOWS CITY OF LLOYDMINSTER
 - HIGH POINT
 - LOW POINT
 - ENVIRONMENTALLY SENSITIVE AREA
 - PETROLEUM STATION
 - CONTOURS
 - ABANDONED WATER WELL
 - ABANDONED OIL WELL
 - HUSKY OIL 10m X 10m SETBACK

EXISTING SITE FEATURES

SCALE 1:7500

0 75 150 225 m

Mayor
 City Clerk



NOTE: DESIGNATION OF R3 LAND USE IS SUBJECT TO CHANGE DUE TO MARKET CONDITIONS.
 NOTE: LOCAL ROAD CONFIGURATION MAY BE MODIFIED WITHOUT AN ASP AMENDMENT.

LAND USE PLAN

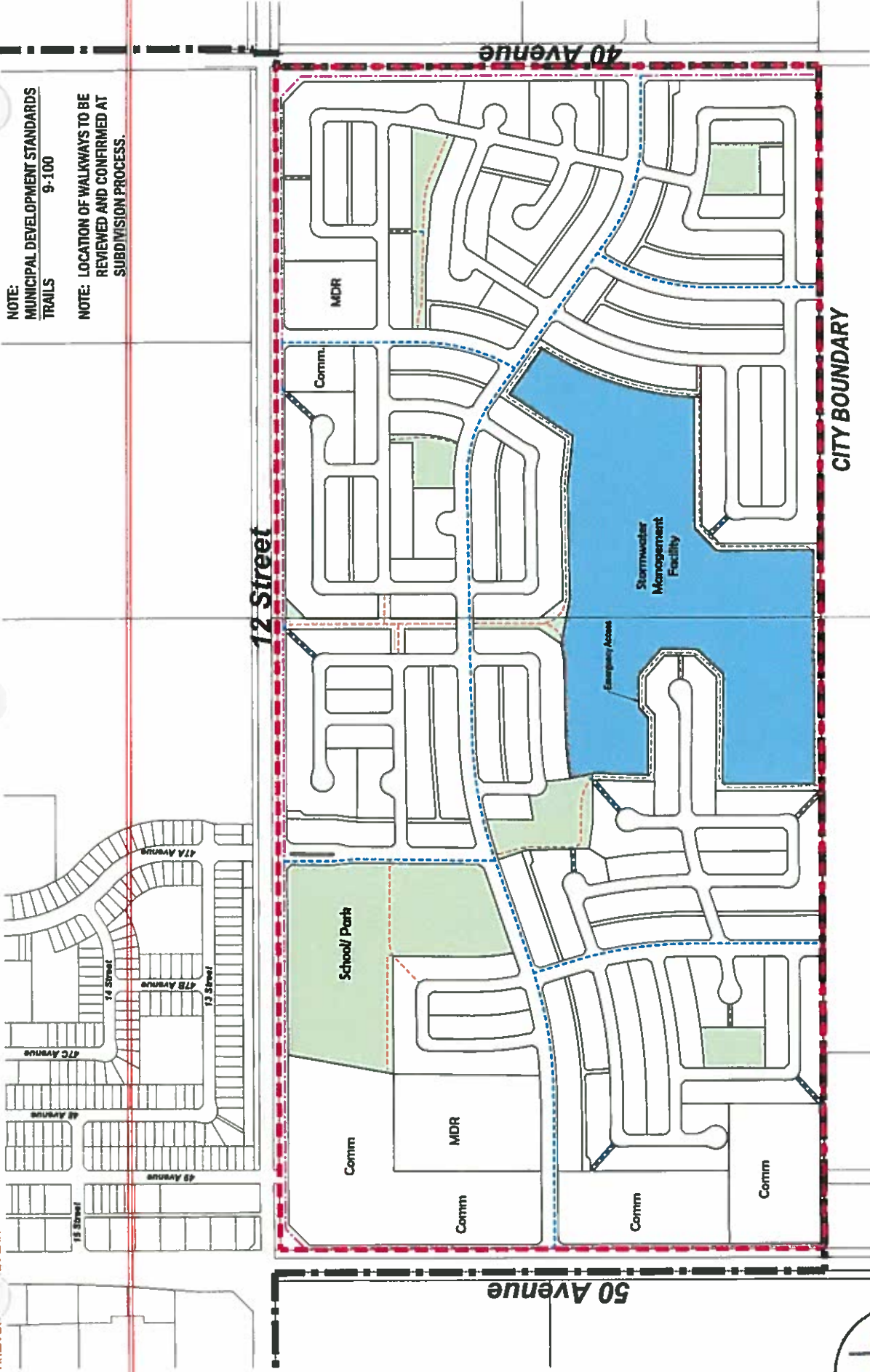


LEGEND

- OUTLINE PLAN BOUNDARY
- CITY BOUNDARY
- THE WILLOWS CITY OF LLOYDMINSTER
- LOW DENSITY RESIDENTIAL
- MEDIUM DENSITY RESIDENTIAL MULTIPLE UNIT
- MEDIUM DENSITY RESIDENTIAL TOWNHOUSE / APARTMENT
- PARK
- STORMWATER MANAGEMENT FACILITY
- MID-BLOCK CROSSWALK

NOTE: MUNICIPAL DEVELOPMENT STANDARDS TRAILS 9-100

NOTE: LOCATION OF WALKWAYS TO BE REVIEWED AND CONFIRMED AT SUBDIVISION PROCESS.

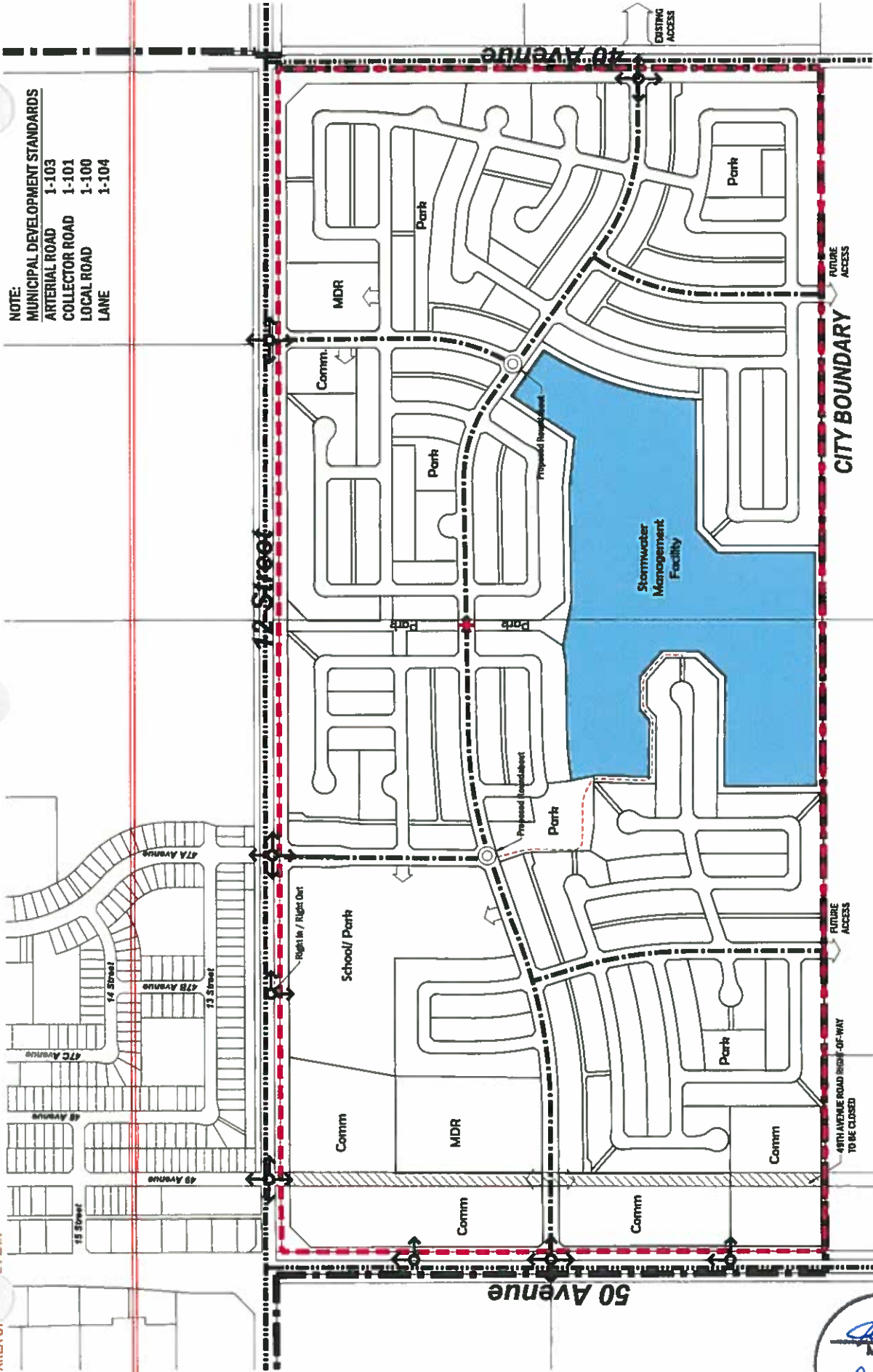


- LEGEND**
- PROPOSED 1.5m CONCRETE WALK
 - PROPOSED 3.0m ASPHALT WALK
 - 3.0m ASPHALT TRAIL
 - PARK
 - STORMWATER MANAGEMENT FACILITY
 - CITY BOUNDARY
 - OUTLINE PLAN BOUNDARY
 - CITY BOUNDARY

PARKS AND OPEN SPACE



NOTE:
 MUNICIPAL DEVELOPMENT STANDARDS
 ARTERIAL ROAD 1-103
 COLLECTOR ROAD 1-101
 LOCAL ROAD 1-100
 LANE 1-104



LEGEND

- OUTLINE PLAN BOUNDARY
- CITY BOUNDARY
- ARTERIAL ROAD
- COLLECTOR ROAD
- EMERGENCY ACCESS (3.0m ASPHALT PATH)
- FUTURE ACCESS
- MID-BLOCK CROSSWALK

TRANSPORTATION

SCALE 1:7500

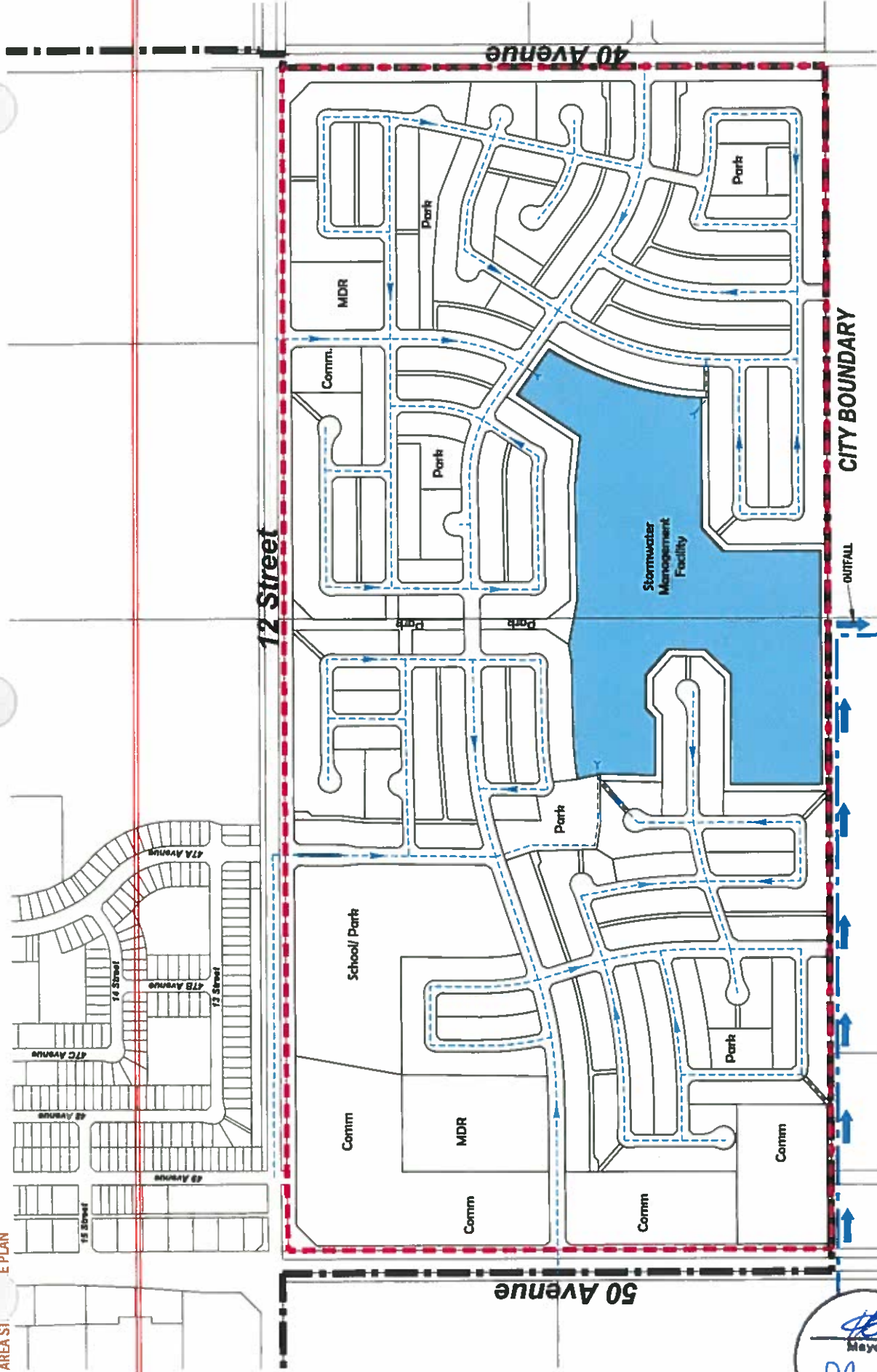
0 75 150 225 m

THE WILLOWS
 CITY OF LLOYDMINSTER

SEC

Mayer
 City Clerk

0153-14011_04_PRF008.DWG
 Rfshukh
 May 12, 2016
FIGURE 6



LEGEND

-  OUTLINE PLAN BOUNDARY
-  CITY BOUNDARY
-  STORMWATER MANAGEMENT FACILITY
-  OVERLAND DRAINAGE
-  PROPOSED STORMWATER SERVICING
-  FUTURE STORM TRUNK MAIN

THE WILLOWS
CITY OF LLOYDMINSTER

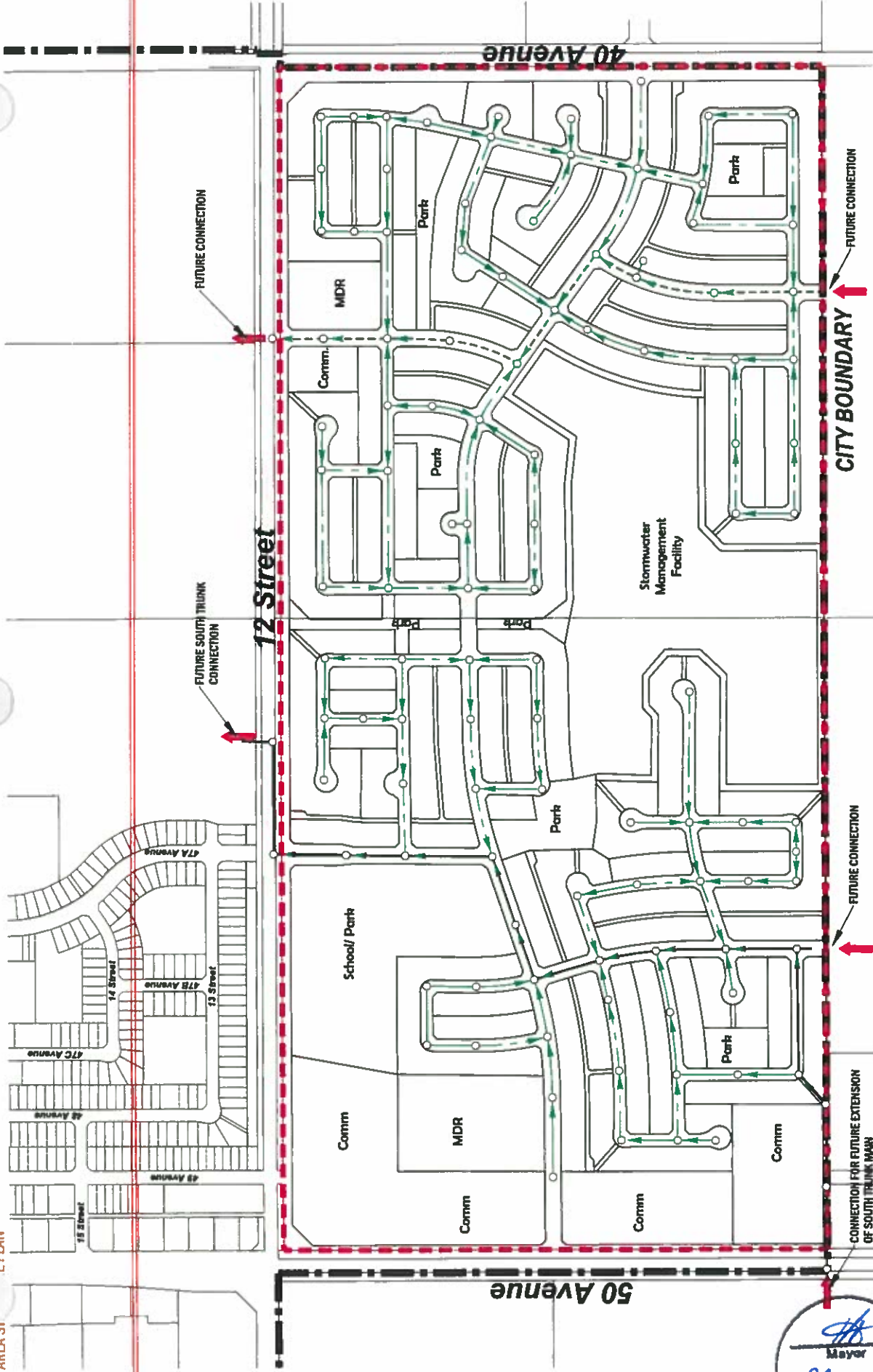
STORMWATER SERVICING




Mayor

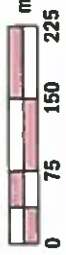

City Clerk





- LEGEND**
- OUTLINE PLAN BOUNDARY
 - SANITARY SERVING
 - SOUTH TRIBUTARY SERVICE MAIN
 - SOUTH TRUNK MAIN
 - CITY BOUNDARY

SANITARY SERVING

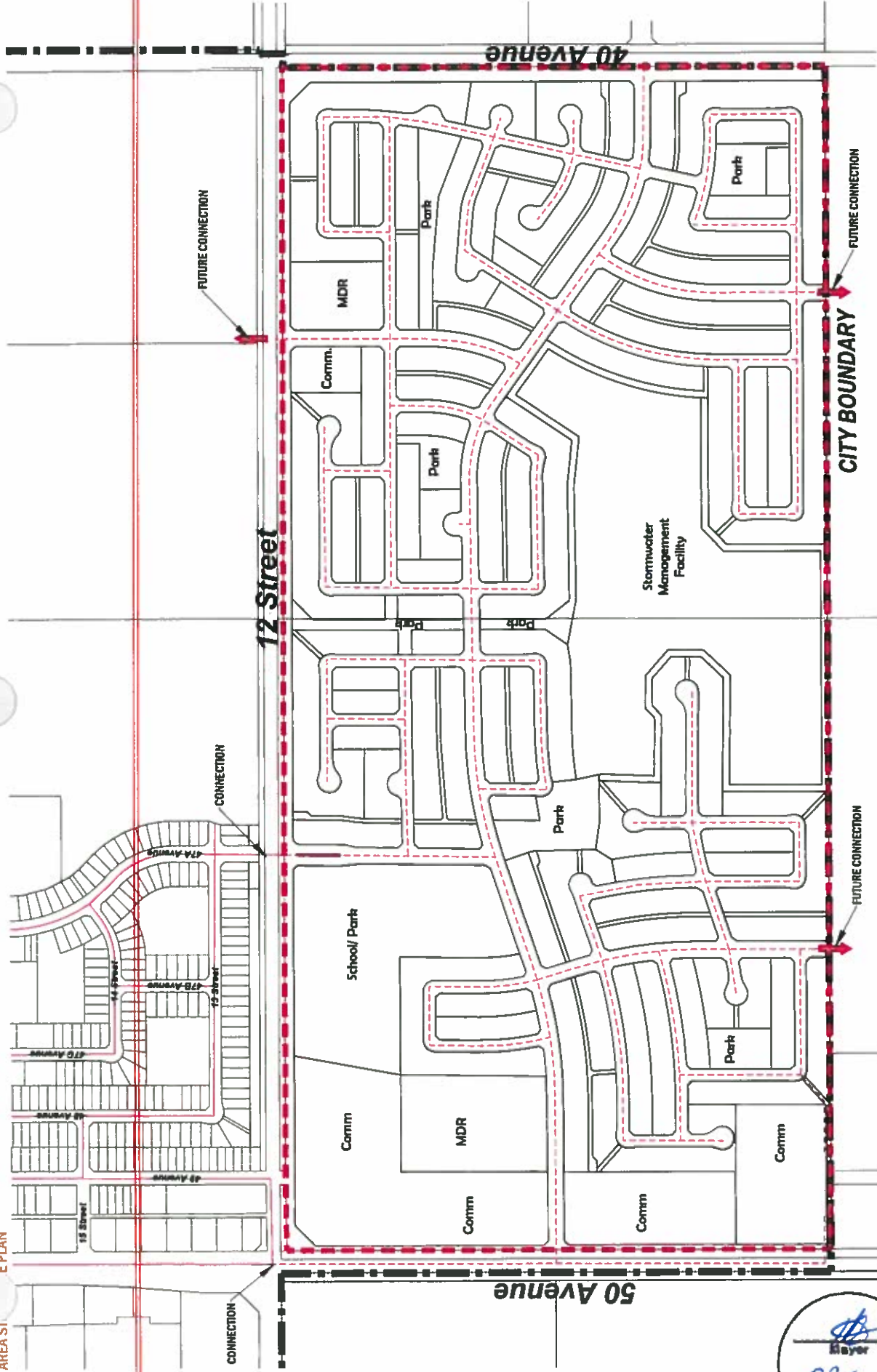


SCALE 1:7500

THE WILLOWS
CITY OF LLOYDMINSTER


 Mayor

 City Clerk

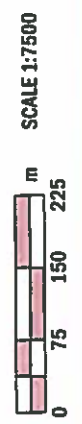


LEGEND

- OUTLINE PLAN BOUNDARY
- CITY BOUNDARY
- EXISTING WATER MAIN
- PROPOSED WATER MAIN

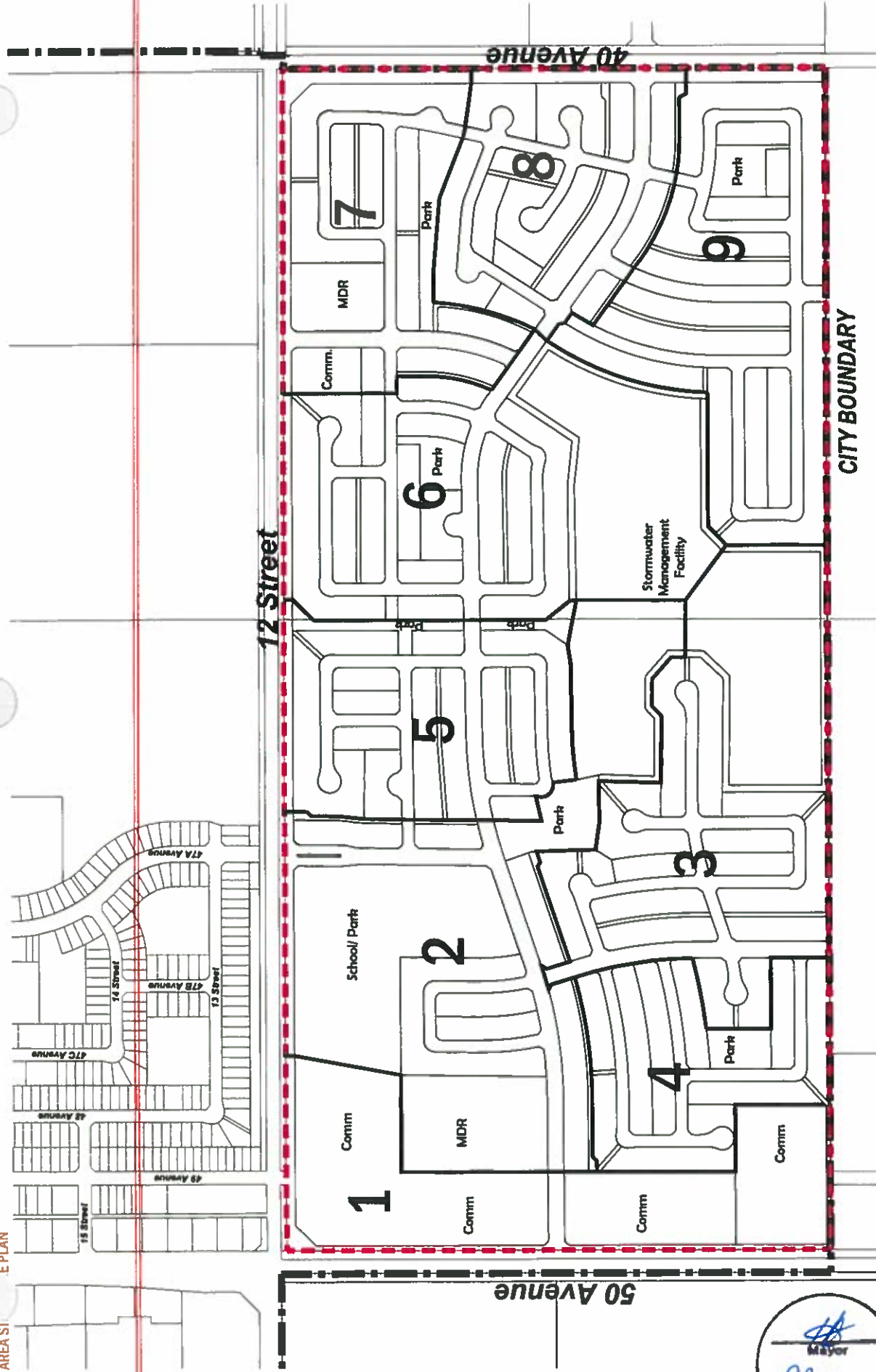
THE WILLOWS
CITY OF LLOYDMINSTER

WATER DISTRIBUTION



Mayor
 City Clerk

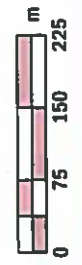




LEGEND

- OUTLINE PLAN BOUNDARY
- CITY BOUNDARY
- STAGING BOUNDARY

STAGING PLAN



SCALE 1:7500

THE WILLOWS
CITY OF LLOYDMINSTER

Mayor

 City Clerk



APPENDIX B

Illustrative Concept



DEVELOPMENT CONCEPT



12 STREET

40 AVENUE

PROPOSED SCHOOL SITE

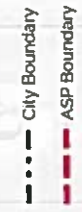
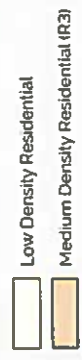
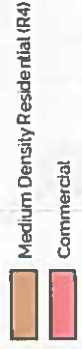
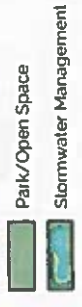
STORM POND

50 AVENUE

49 AVENUE ROAD RIGHT-OF-WAY TO BE CLOSED

49 AVENUE ROAD RIGHT-OF-WAY TO BE CLOSED

Note: This Development Concept is a conceptual plan only and is subject to change without notice. Designation of R3 land use is subject to market conditions.

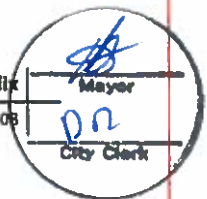


LEGEND



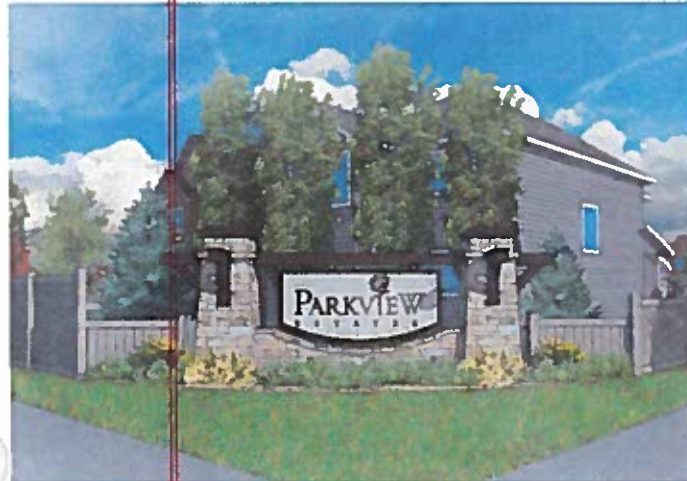
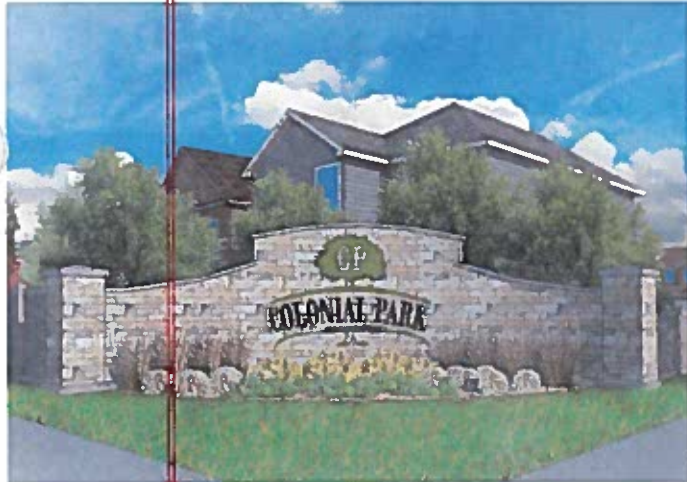
APPENDIX C

Example Entry Features and Example Pageantry & Show Home Parade



THE WILLOWS AREA STRUCTURE PLAN

Example Entry Features



[Signature]
Mayer
[Signature]
City Clerk

Example Pagentry & Show Home Parade



[Signature]
Meyer
City Clerk



APPENDIX D

Example Low and Medium Density Housing Forms



THE WILLOWS AREA STRUCTURE PLAN

Example Low Density Housing Forms

Single Family



Semi-Detached




Mayor

City Clerk

THE WILLOWS AREA STRUCTURE PLAN

Example Medium Density Housing Forms

Townhouse



Apartment

