TOWN OF MORINVILLE
PROVINCE OF ALBERTA
GRANDIN HEIGHTS AREA STRUCTURE PLAN BYLAW AMENDMENT
BYLAW 8/2016

A BYLAW OF THE TOWN OF MORINVILLE, IN THE PROVINCE OF ALBERTA, TO AMEND THE GRANDIN HEIGHTS AREA STRUCTURE PLAN BYLAW 19/2006.

WHEREAS, an application has been made to review, update and revise the as yet undeveloped lands within the Grandin Heights Area Structure Plan, being Bylaw 19/2006 and amendments thereto, to ensure continued conformity with the requirements of Sections 633 and 638 of the Municipal Government Act, and amendments thereto, as well as the provisions of the Town of Morinville Municipal Development Plan, being Bylaw 11/2012, and amendments thereto;

AND WHEREAS, the Municipal Council of the Town of Morinville deems it appropriate to review, update and revise the Grandin Heights Area Structure Plan, being Bylaw 19/2006, as it relates to the as yet undeveloped lands, in order to accommodate improvements and refinements to the Plan's concepts/land uses including the provision of a school/park site, refining the stormwater management facility, and increasing pedestrian/community connectivity; and,

AND WHEREAS, notice of a public hearing for this bylaw held on June 28th 2016 has been given in accordance with Section 692 of the Municipal Government Act, 2000 RSA, ch. M-26, as amended;

NOW THEREFORE, the Municipal Council of the Town of Morinville, Alberta, duly assembled, hereby enacts as follows:

1.0 Schedule "A", attached hereto, be adopted and constitute the Grandin Heights Area Structure Plan for the as yet undeveloped lands referred to and delineated as the "Amendment Area" in Schedule "A".

2.0 That this Bylaw shall come into full force and effect upon the Third Reading thereof.

3.0 **SEVERABILITY**

3.1 If any Section or parts of this bylaw are found in any court of law to be illegal or beyond the power of Council to enact, such Section or parts shall be deemed to be severable and all other Sections or parts of this bylaw shall be deemed to be separate and independent there from and to be enacted as such.

READ a first time the 14th day of June, 2016

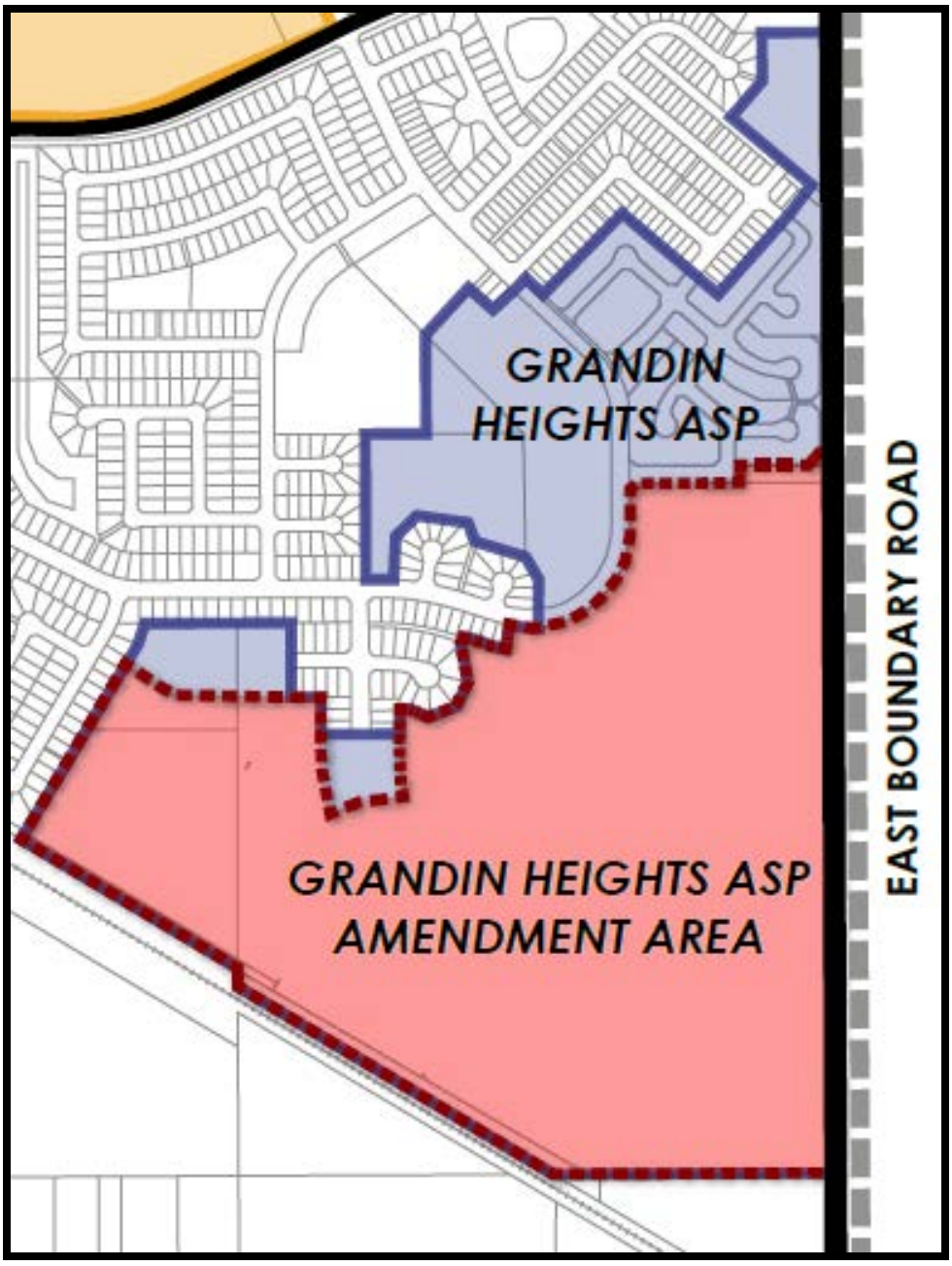
READ a second time the ____ day of _____, 2016

READ a third time and finally passed the ____ day of _____, 2016

_____
Lisa Holmes, Mayor

_____
Andy Isbister, Chief Administrative Officer

SCHEDULE "A" (attached to and forming part of this Bylaw)



GRANDIN HEIGHTS

AREA STRUCTURE PLAN

Morinville

June 2016

GRANDIN HEIGHTS

AREA STRUCTURE PLAN

DEVELOPER:

TAG DEVELOPMENTS

PREPARED BY:

EDS

SUPPORTED BY:

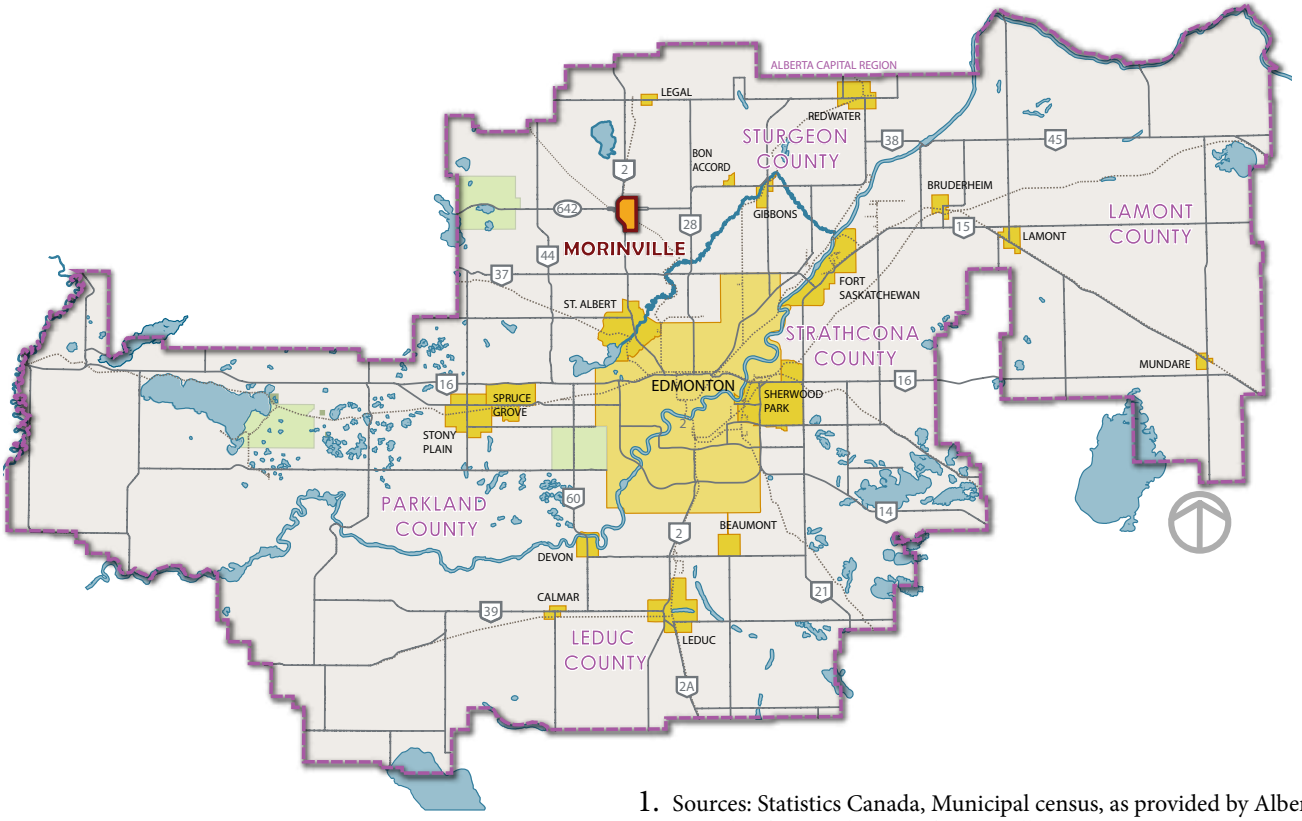
PRISM ENGINEERING INC

bunt & associates

Contents

1.1 Plan Purpose

Over the past number of years, the Town of Morinville (see Figure 1 – Regional Context Plan for general location) has experienced steady growth of population, with a number of new development areas and residential infill projects within the Municipal limits. Over the past ten years, average annual population growth of the Town has ranged between approximately 3 to 6%[1]. With concurrent growth of local and regional industries, residential populations are expected to continually increase over coming years. The Grandin Heights Area Structure Plan (ASP) forms the provision of a revised plan for lands shown in the project boundaries on Figure 2 – Local Context Plan, as an update to Bylaw 19/2006. After nearly ten years since the previous ASP was completed, numerous social and economic factors have changed which has influenced new zoning and development philosophies. As an example, current local housing market demands more attainable housing options with more compact development that suit new families; residents have a growing affinity for more walkable communities and development that better accommodates an aging population.



1. Sources: Statistics Canada, Municipal census, as provided by Alberta Municipal Affairs, and Town of Morinville 2014 Municipal Census.

Figure 1 Regional Context Plan

Bylaw 19/2006 included some areas of land that, since Council adoption in 2006, have now been developed under the existing ASP. Figure 2 – Local Context Plan identifies these developed lands in blue, with undeveloped areas of the Grandin Heights ASP in red. The current 2015 ASP only includes those areas on Figure 2 – Local Context Plan shown in red. Concurrent to adopting this updated ASP, Council will be asked to amend Bylaw 19/2006 to eliminate all lands that will be included in the current 2015 ASP.

This document is intended to establish a general land use framework for the development and servicing of the lands identified within the plan boundary, as seen on Figure 2 – Local Context Plan. Pursuant to Part 17, Division 4, Section 633(1) of the Municipal Government Act R.S.A. 2000, an Area Structure Plan must describe the proposed sequence of development, land uses, density of population and general location of major transportation routes and public utilities. This ASP exceeds this requirement by delving much deeper in describing the vision for this new development area, and how this ASP strongly aligns with other plans, policies and standards of the Municipality.

This ASP enacts many of the principles set forth in the Town of Morinville 2012 Municipal Development Plan (Bylaw 11/2012) and supports other statutory plans, policies and Municipal standards. The land use framework is demonstrated in this plan by identifying:

- non-prescriptive and flexible development typologies through a suggested zoning of residential, commercial and public open space network;
- a mobility network for both vehicles and active transportation that accommodates a very well-connected pedestrian system and an efficient network of roads;
- a high-level servicing strategy that demonstrates how basic services will be best implemented to achieve the proposed plan; and
- a comprehensive strategy to program public open space, to ensure this development area meets the needs of its future residents as well as the community as a whole.

1.2 Vision

The 2012 Municipal Development Plan (MDP) charts the course for important themes that inform the development of this ASP. The most relevant overarching themes from the MDP included:

- a self-supporting, complete community, ensuring residents are provided with the required amenities and resources to live, work, play and invest;
- an affordable, family-friendly and safe community that attracts a number of new residents every year;
- complete, connected and multi-functional space created and maintained in order to accommodate future growth;
- a desirable and healthy community that is progressing toward a more sustainable state;
- improving quality of live while lessening the ecological footprint of development; and
- valuable, usable and attractive public parks and open spaces.

1.3 Statutory Plan and Policy Context

The 2012 MDP is the primary influencing statutory document that influences this ASP. Section 8.3 of the 2012 MDP includes a number of policies that are directly applicable to the Grandin Heights ASP, some including:

- sense of place – creating a community that is inviting, innovative, dynamic and adaptable;
- urban fabric – developing a community that promotes mixture of land uses that meets the needs of a complete community; incorporating ecologically responsible approaches to development; support walkability and other modes of non-vehicular travel;

- place-making – developing the public and semi-public realm that is designed to reflect community values, and accommodates pedestrian, transit and vehicular movement;
- implementation – adhering to Municipal design standards and guidelines, and constantly scrutinizing development as it is implemented to inspire the highest standards of community fabric; ensuring development is compatible with a winter community, providing a network of comfortable pedestrian corridors and adequate areas for snow clearing, drainage, wind abatement and control of ice; and
- growth management for developing neighbourhoods and planned areas – alignment with the updated *Recreation, Parks and Open Spaces Master Plan*, and priority given to the trails system connectivity.

Section 3.1 of this ASP identifies ways in which the proposed development concept achieves the above noted policies.

The current Land Use Bylaw (Bylaw 3/2012, with updates as recent as dated April 14, 2015) prohibits or regulates and controls the use and development of land and buildings within the Town of Morinville. Land use bylaws are required as per the Municipal Government Act, R.S.A. 2000, Chapter M-26 Section 639. The LUB outlines various land use districts that may be applied to the lands within the Grandin Heights ASP. As noted earlier, this ASP does not specifically prescribe specific land uses, rather includes a plan that is resilient to selecting one of a few different development typologies to be determined at the time of subdivision and development agreement.

1.4 Summary of Notable Plan Features

The following are general characteristics of the proposed ASP, many with direct influence from various land use policies noted in the 2012 MDP:

i. incorporating and not segregating different housing types, with a mix of densities and potential housing typologies in the same plan area;

ii. potential for rental unit developments, and housing types with secondary suites;

iii. small neighbourhood commercial development areas that support convenience shopping for residents within reasonable walking distance, providing this amenity close to future residents to reduce vehicle trips and creating social gathering places;

iv. streetscapes that give consideration to safe, non-vehicular modes of travel that are separated from the main carriageway, including human-scaled design elements such as lighting and street furniture;

v. lots backing onto major transportation corridors such as rail lines and East Boundary Road have sufficient lot depths to accommodate any necessary noise attenuation berming or fencing, to be determined at the time of development agreement;

vi. using naturalized approaches in the development of both stormwater management facilities and other public open space to increase ecological value, reflect changing social values with a growing appreciation for urban nature, reduce maintenance and help improve water quality of surface runoff prior to release downstream;

vii. incorporating numerous public amenities throughout the neighbourhood such as municipal reserve (MR) to maximize the number of future lots with direct access to public open space; and

viii. providing innovative stormwater management techniques that allow stormwater management ponds to continue to be developed as infrastructure facilities and community amenity features to function as passive recreation facilities.

1.4 Conformity

Section 638 of the Municipal Government Act R.S.A. 2000 Chapter M-26 requires that all statutory plans adopted by a municipality must be consistent with each other. This ASP conforms to all statutory plans, bylaws, standards and guidelines of the Town of Morinville, as well as all applicable Provincial legislation.

2.1 Site Context

Figure 2 – Local Context Plan demonstrates that the Grandin Heights community is generally located in the east-central area of the Municipal boundary of the Town of Morinville. The ASP area is bound by existing residential development to the north and west, East Boundary Road to the east, and a railway line to the south. The total area of land within the study area is 63.01ha.

2.2 Existing Conditions

Figure 3 – Site Features identifies several site characteristics of the ASP area:

- the northwest of the boundary is Grandin Drive and an existing school / community park site;
- a pre-constructed stormwater management facility (SWMF) that has been built in conformance with the previously approved ASP, and that will form part of the future Grandin Heights infrastructure in generally its current state;
- an existing water line running north-south near the east edge of the plan area;
- an existing low point near the south edge of the plan area where surface runoff currently gathers;
- a rail line owned by Canadian National Railway, running along the southern boundary of the plan area;
- an array of underground utilities throughout the site (many to be abandoned to reflect the new plan configuration) such as sanitary lines, water lines and manholes;

The study area does not include any historically significant buildings or above-ground artifacts to be retained for cultural preservation. This parcel of land has been recently cultivated and farmed, and at the time of developing this ASP no native stands of trees or heavily vegetated areas exist. There are no known portions of the plan area that meet the criteria for environmental reserve (ER), and as such no ER has been delineated for this plan.

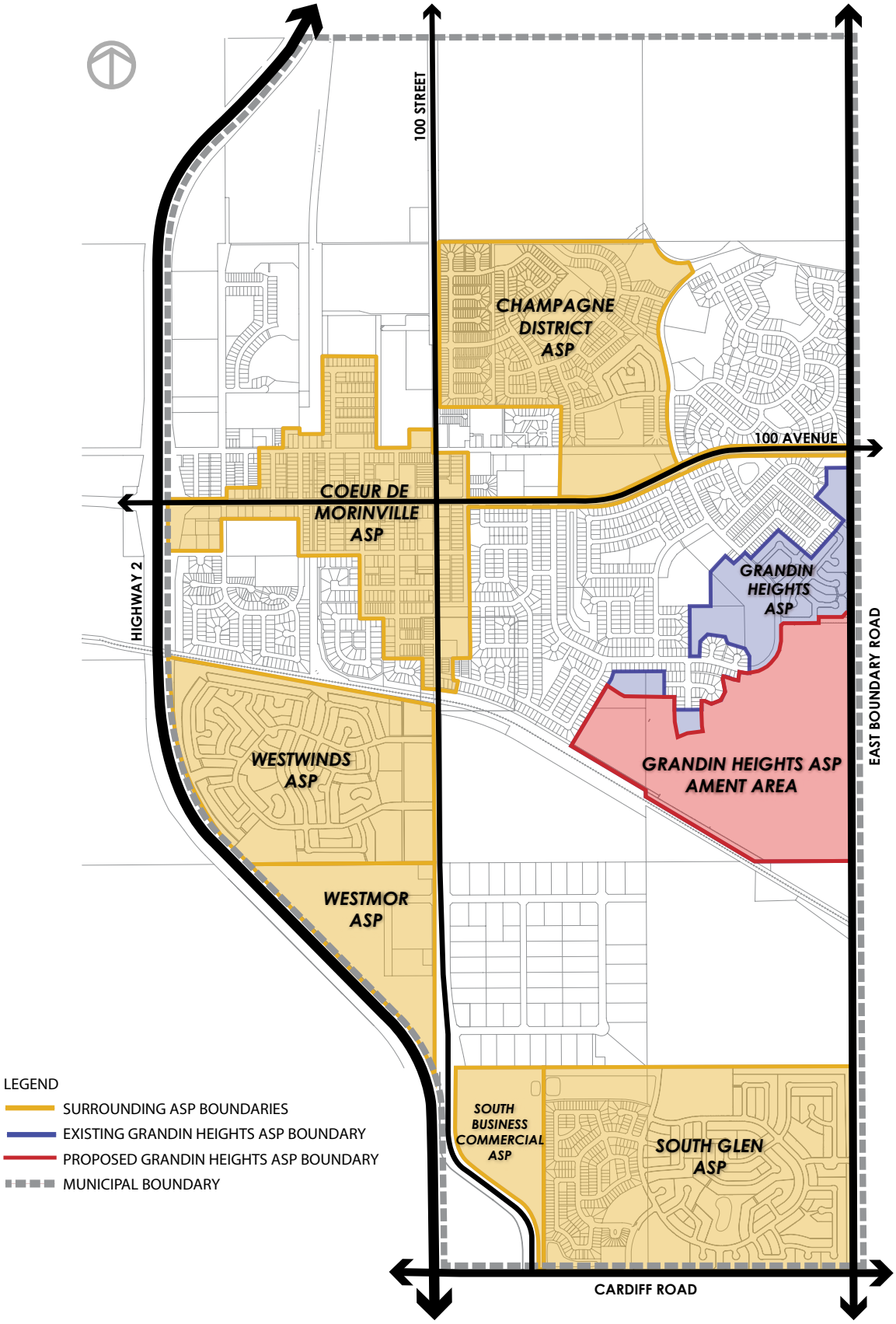
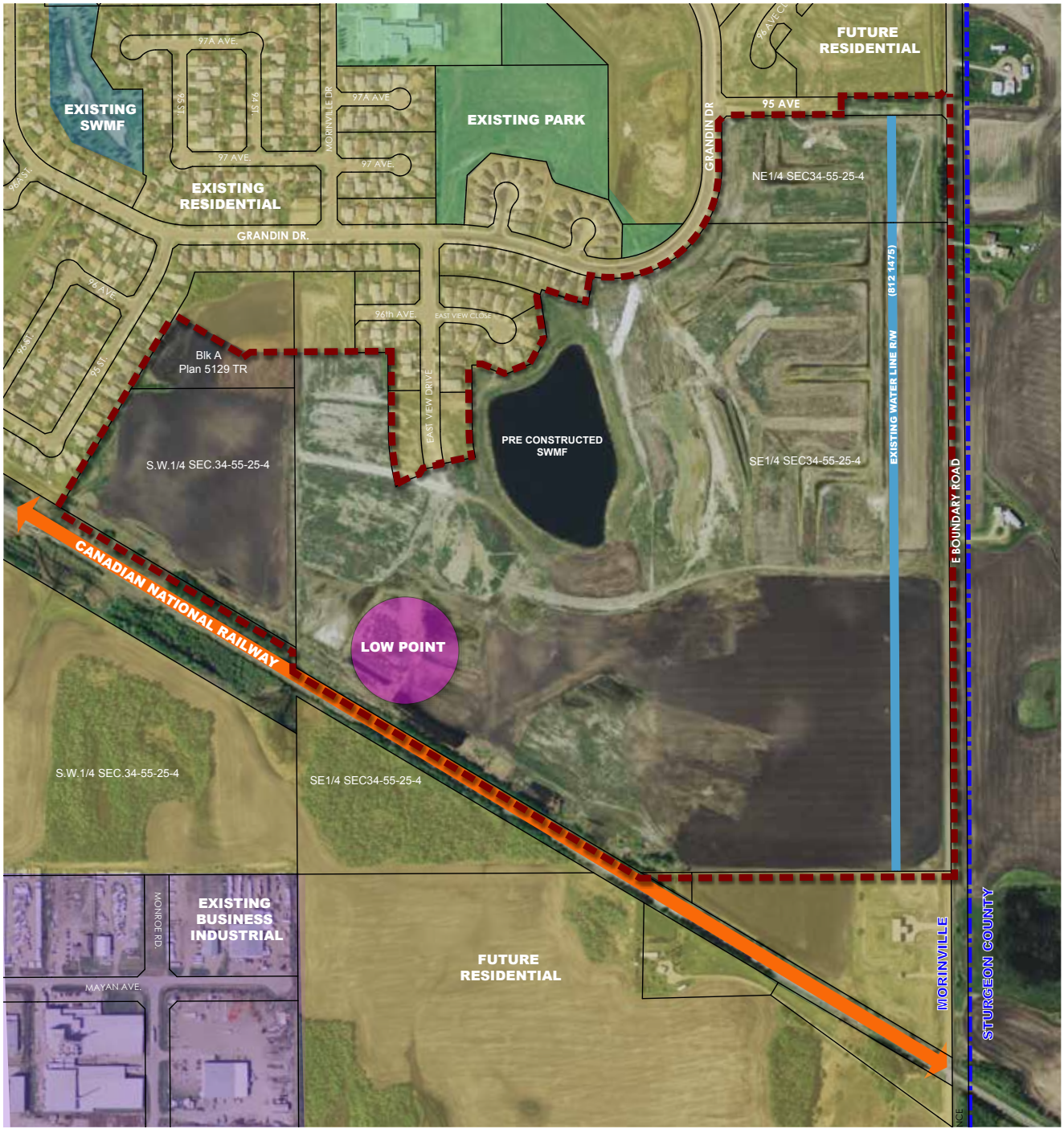


Figure 2 Local Context Plan



2.3 Legal Land Ownership and Descriptions

All land within the Amendment Area is currently owned by Grandin Heights Properties Ltd. and comprised of land, as shown on Figure 3 – Site Features, from portions of the following legal land descriptions:

- SW 1/4 Sec. 34-55-25-4;
- SE 1/4 Sec. 34-55-25-4;
- NE 1/4 Sec. 34-55-25-4; and
- Blk A Plan 5129 TR.

Figure 3 Site Features

3.1 Key Planning Principles

As noted in section 1.3 – Statutory Plan and Policy Context, several policies included in the 2012 MDP had direct influences on this ASP. The five policies noted below are achieved through the proposed development concept noted on Figure 4 – Development Concept:

- sense of place – the ASP area includes a strong theme of well-connected public open space that allows residents safe and comfortable means of moving through the community. Walkway entrances will be accentuated with attractive plantings and pedestrian furniture, making the trail network easy to navigate and comfortable for people to use. While the proposed development concept demonstrates how various zoning types can be distributed, it is not prescriptive and allows for flexibility for different zoning types should the local market demand;
- urban fabric – varying land uses for residential and commercial development have been included in the proposed development concept. A very detailed program has been included in this ASP to describe the potential design concepts for public open space. Going beyond recent trends for all public open space to be formally programmed and maintained, this ASP includes a constructed natural area that will provide innovative stormwater management, new wildlife habitat, low- to-no maintenance public open space, and learning and interpretive opportunities;
- placemaking – this plan was inspired by a pedestrian-first attitude, by ensuring connectivity of the community with a series of safe and comfortable walkways for non-motorized mobility. Current community values include more active recreation including walking trails, which is a primary feature of this ASP;
- implementation – this ASP is consistent with all Municipal design standards and guidelines, while providing some features that may become the template for future revisions to Municipal standards and guidelines. This plan is extremely well thought out, as an example road right-of-way design explores using common trenches for utilities, and that accommodate pedestrian movement while allowing for short-term storage of snow that does not impede pedestrian movement; and
- growth management for developing neighbourhoods and planned areas –this ASP aligns with many components of the updated *Recreation, Parks and Open Spaces Master Plan*. Priority has been given to the trails system connectivity, with a notably well-connected system of public open spaces.

3.2 Opportunities and Constraints

The plan area has the following characteristics that present opportunities for the proposed development alternatives:

- no historical resources that limit development or require preservation of existing features;
- direct linkage to existing infrastructure to allow for near-term development of initial phases of development without the need for off-site utilities.

Some of the development constraints that have influenced the proposed development concept for this ASP include:

- an existing CN Rail line that may require sound attenuation, safety barriers, and aesthetic mitigation to separate the movement of trains from public access and view;
- existing underground and surface utilities installed by the current land owner to conform to the previously approved plan, which under the new development concept will require abandonment;
- an existing water line currently used to service large portions of the Town which must remain in its place, due to being cost prohibitive and logistically challenging to relocate;
- set intersection locations on East Boundary Road leading into the ASP Amendment Area with consideration of Municipal standards for intersection spacing in relation to future arterial roadway; and
- current alignment and geometry of existing roads to the north and west of the plan area that force many of the intersections proposed in the development concept plan for the plan area.

3.3 Land Use

As noted earlier, this ASP is non-prescriptive, whereas specific land uses have not been assigned to each area. Figure 4 – Development Concept includes several types of land use, including:

i. Low Density Residential – individual lots that can be potentially zoned as a combination of R-1A, R-1B and other similar land use districts. These typologies include a range of front attached, rear detached, lane accessible, and public road accessible housing types. Additional land use zoning types may be developed at a later date to suit market conditions and housing demands at the time of development;

ii. Senior / Semi / Row House – individual lots with combined row housing that can potentially be zoned as R-2, R-3 or other similar land use districts including the typology provided under DC-3-7 or DC-3-8. Additional land use zoning types may be developed at a later date to suit market conditions and housing demands at the time of development;

iii. Medium Density Residential – parcels of land that can be developed as either condominium or rental units that can potentially be zoned as R-3 or R-4.

iv. Neighbourhood Commercial – located near the intersection of 95 Ave. and Grandin Drive, two adjacent parcels of neighbourhood commercial that can potentially be zoned as C-1, C-2, or C-5

v. Park / Greenway – designated as MR, with a series of different program elements as described in Sections 3.6 and 3.7 of this ASP Amendment;

vi. Stormwater Management Facility – designated as PUL (below the freeboard flood elevation) and MR (above the freeboard flood elevation), a constructed wetland that combines necessary stormwater storage with passive recreation and ecological enhancements;

vii. Road Network – while not classified on Figure 4 – Development Concept with a specific colour, these areas are understood to include all vehicular roadways, medians, boulevard areas and public sidewalks within the road right-of-way.

Note: The location and configuration of land use and road network is subject to change during subdivision and rezoning of the neighbourhood and may not be developed exactly as illustrated.

LEGEND

- LOW DENSITY RESIDENTIAL
- SENIOR/SEMI/ROW HOUSE
- MEDIUM DENSITY RESIDENTIAL
- NEIGHBOURHOOD COMMERCIAL
- FLEX SITE
- PARK/GREENWAY
- STORMWATER MANAGEMENT FACILITY
- AREA STRUCTURE PLAN BOUNDARY

Figure 4 Development Concept

3.4 Land Use Distribution

Figure 5 – Land Use Distribution demonstrates the spatial allocation of various land uses, circulation routes, and other plan features. It also includes various road widths prescribed for each road right-of-way, as well as gross areas for various MR and development parcels. The following table outlines the land use statistics for the study area:

A notable feature of this plan includes the extensive system of lineal greenways throughout the plan area. These MR lands are allocated as 10m wide greenspaces, which are further described in Sections 3.6 and 3.7.

A summary of specific land use locations is as follows:

i. SWMF – located in its current position in the core of the plan area. Some grading modifications may be required to accommodate the new layout, but in principle this amenity remains in the same location;

Figure 5 Distribution

ii. Neighbourhood Commercial/Medium Density Residential ("Flex Site") – the parcel at the intersection of 95th Ave. and Grandin Drive, canbe developmed in the near term and without requiring access from East Boundary Road which has an undefined time-line for development;

iii. MR parcels in the form of 8m wide lineal greenways spread throughout the plan area to provide an adjacent amenity to nearly all lots, as well as larger MR parcels placed at street ends and in locations highly visible from roadways. A conscious effort was made to ensure parks are not hidden from roadways and have generous openings along roadways;

iv. Medium Density Residential parcels spread throughout the ASP Amendment Area.

Table 1 Land Use Statistics

GROSS AREA (ha)		**63.01**
Part of East Boundary Rd. (Sewer Line R/W)		0.85
GROSS DEVELOPABLE AREA		**62.16**
NEIGHBOURHOOD COMMERCIAL (Flex Site)		1.06
SWMF/PUL		3.41
Below Freeboard	3.41	
MUNICIPAL RESERVE	**13%**	7.93
School	5.30	
Pocket Parks	0.52	
Park Above Freeboard	0.93	
Greenway (8m)	0.85	
Walkways	0.33	
RESIDENTIAL		
LDR (less on 20% circulation)		29.45
Semi/Row house		4.98
MDR		1.75
MDR (Flex Site)		1.15
Circulation (20% of GDA)		12.43

3.5 Population

The following chart includes an estimation of residential population that can be accommodated in this plan area:

Based on 20 units per hectare for low density residential, semi-detached and row housing as well as 50 units per hectare for medium density residential, it is estimated that 810 units and a population of approximately 2654 people can be accommodated in the plan area.

Table 2 Density and Population

RESIDENTIAL LAND USE, DWELLING UNIT COUNT AND POPULATION

	Area (ha)	Units/ha	Units	% of Total Area	People/Unit	Population
LDR/Semi/ Row House	34.43	20	757	84%	3.46	2382
MDR	2.90	50	145	16%	2.60	377
Total	**37.33**		**902**	**100%**		**2759**

3.6 Open Space Network

The parks and open space sites within the plan area have been strategically located in combination with an extensive greenways help connect the community and users to live and enjoy outdoor amenity areas. Well connected greenways promote positive health and community interaction.

The large school/park site will provide a focal point for the community creating additional public space that will support community recreational and social events. The site is positioned conveniently on collector routes for good vehicular and bus access.

The smaller pocket parks and the open space around the storm water management facility provides a different outdoor destinations and could accommodate a community garden and/or play structures which will help provide significant place-making opportunities. Actual development requirements for all open space areas will be determined at the time of subdivision and development agreement.

3.7 Mobility Network

3.7.1 Vehicular Roadway Network

A preliminary Transportation Impact Assessment (TIA) dated January 4, 2016 has been completed by Bunt & Associates Engineering Ltd. for the Study Area. This draft TIA reflects a version of the ASP layout plan dated September 10, 2015. While the TIA does not evaluate the final plan of this ASP, it does address similar patterns of major collector roads, access points onto both Grandin Drive and East Boundary Road and a similar distribution of development typologies. The TIA does not, however, include the School Park Site Municipal Reserve in its assessment. This TIA is available as a supplementary report for the Grandin Heights ASP, and has not been included within this document in whole or in part.

Figure 6 Roadway Network

3.7.2 Multi-Modal Trails Network

This plan area includes a series of separate walks within road right-of-ways. Figure 7 – Circulation Plan includes the alignment of numerous trail segments and trail heads, which can be described as follows:

- informal trails – this length of pedestrian access along the CN Rail line within a setback zone would not include a formal trail, rather sufficient space for pedestrians to travel informally. Introducing pedestrians with a formal trail along the rail line was included in the *Recreation, Parks and Open Spaces Master Plan*, however is not recommended at this time due to safety concerns;
- trail / pathway – gravel trails of 2.0m width or asphalt trails of either 2.4m or 3.0m width (to be determined at time of subdivision and development agreement), with snow cleared only on asphalt surfaces during winter months;

Figure 7 Circulation Plan

- greenway – see Figure 8 – Greenway Typologies for varying treatments for these greenways that may be used in different applications. Trails would include 3.0 paved surfacing, maintained year-round. Greenway trails may split in some areas to accommodate islands of plantings and / or pedestrian seating areas, which would be determined at the time of detailed design. Figure 8 – Greenway Typologies suggests three different approaches of configuring trails with vegetation plantings and pedestrian furniture;
- future trail by others – a segment of trail along East Boundary Road which would be implemented at a later date once the alignment of East Boundary Road is determined;
- primary access – trail heads that are accentuated with iconic elements such as signage, groups of benches or ornamental plantings that signify a trail head location; and
- secondary access – trail heads that are accentuated with minor landscape treatments such as single benches or plantings that signify a trail head location.

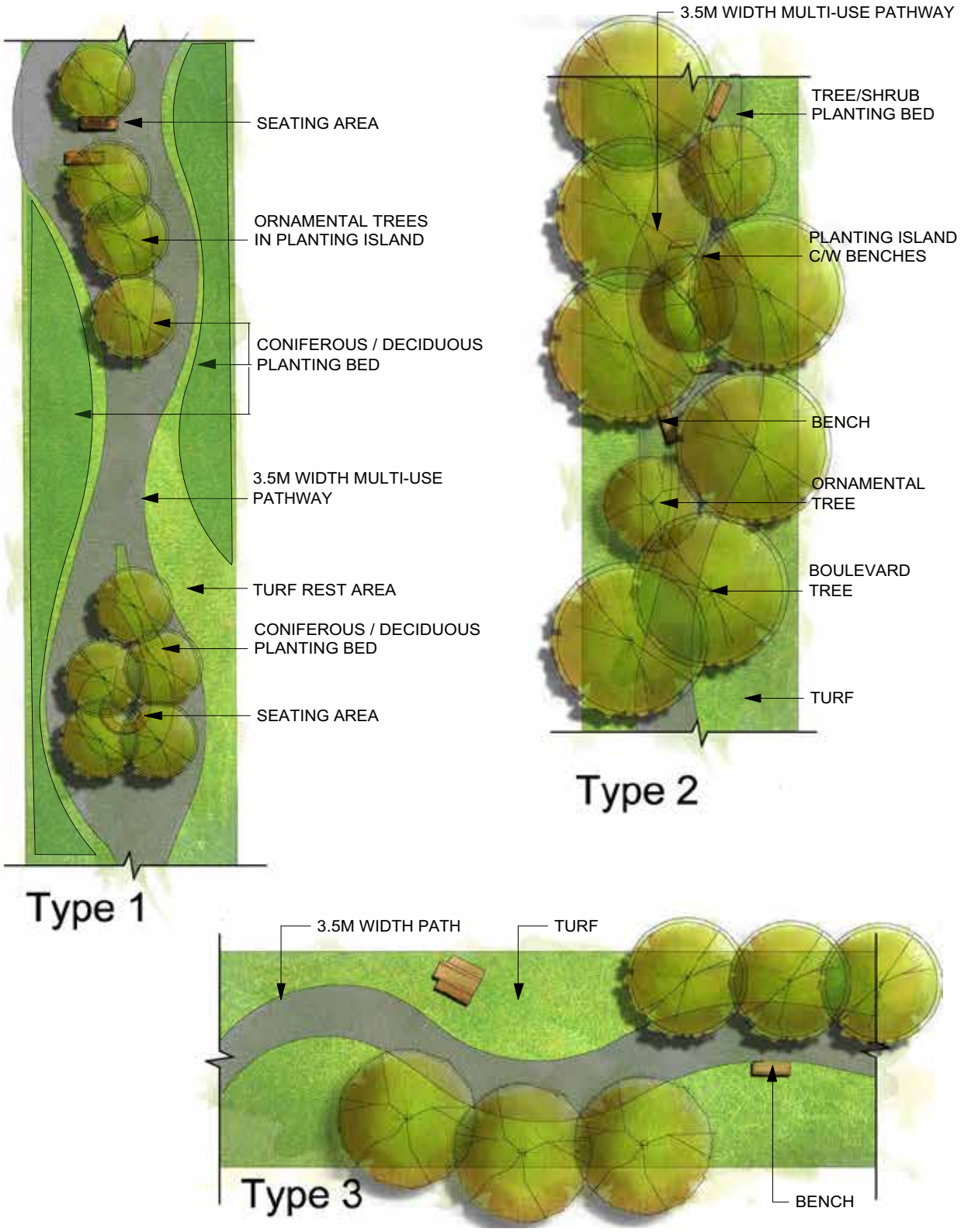


Figure 8 Greenway Typologies

3.8 Underground Utilities

3.8.1 Sanitary Design Criteria

- Per capita average flow contribution: 320 L/c/d (UMA)
- Peaking factor: 2.6(P)-0.1 (UMA)
- P equal to population in 1000s
- Sag manhole inflow: 0.4L/s/manhole (UMA & Town of Morinville Standards)
- Infiltration: 0.28L/s/ha (Town of Morinville Standards)
- Required full flow sewer capacity: Total design peak flow/0.86 (Town of Morinville Standards)
- Residential density
    - » Low density: 3.46 p/lot (Based on subdivision design densities)
    - » Medium density: 2.6 p/lot (Based on subdivision design densities)
- Commercial sewage generation rate: 22500 L/ha/d (Town of Morinville Standards)
- Infiltration : 0.28L/s/ha (UMA & Town of Morinville Standards)
- n=0.013 (Town of Morinville Standards)

The sanitary basin areas are broken down into a western basin and an eastern basin as shown on Figure 9A and B.

The western basin ties into the existing system at the manhole located at Grandin Drive and 95th Street. According to the Engineering Design Brief (Bel-MK April 2000), this tie-in point has a total capacity of 42.0 L/s. Based on the above design criteria the proposed development will result in an additional flow to the western basin of 17.42 L/s. The total flow (proposed + existing) entering the manhole at Grandin Drive & 95 Street is 29.87L/s. This total flow is well below the allowable 42.0 L/s capacity.

The eastern basin ties into a manhole located at Grandin Drive and 99th Avenue. According to the Engineering Design Brief (Bel-MK April 2000) this tie in has an available capacity of 67.91 L/s. Based on the design criteria the eastern basin will add an additional flow of 54.04 L/s. Combined with existing flows, there is a total inflow of 67.46 L/s into the manhole, which is below the 67.91 L/s capacity.

The existing and proposed sanitary system will accommodate the Area Structure Plan land uses.

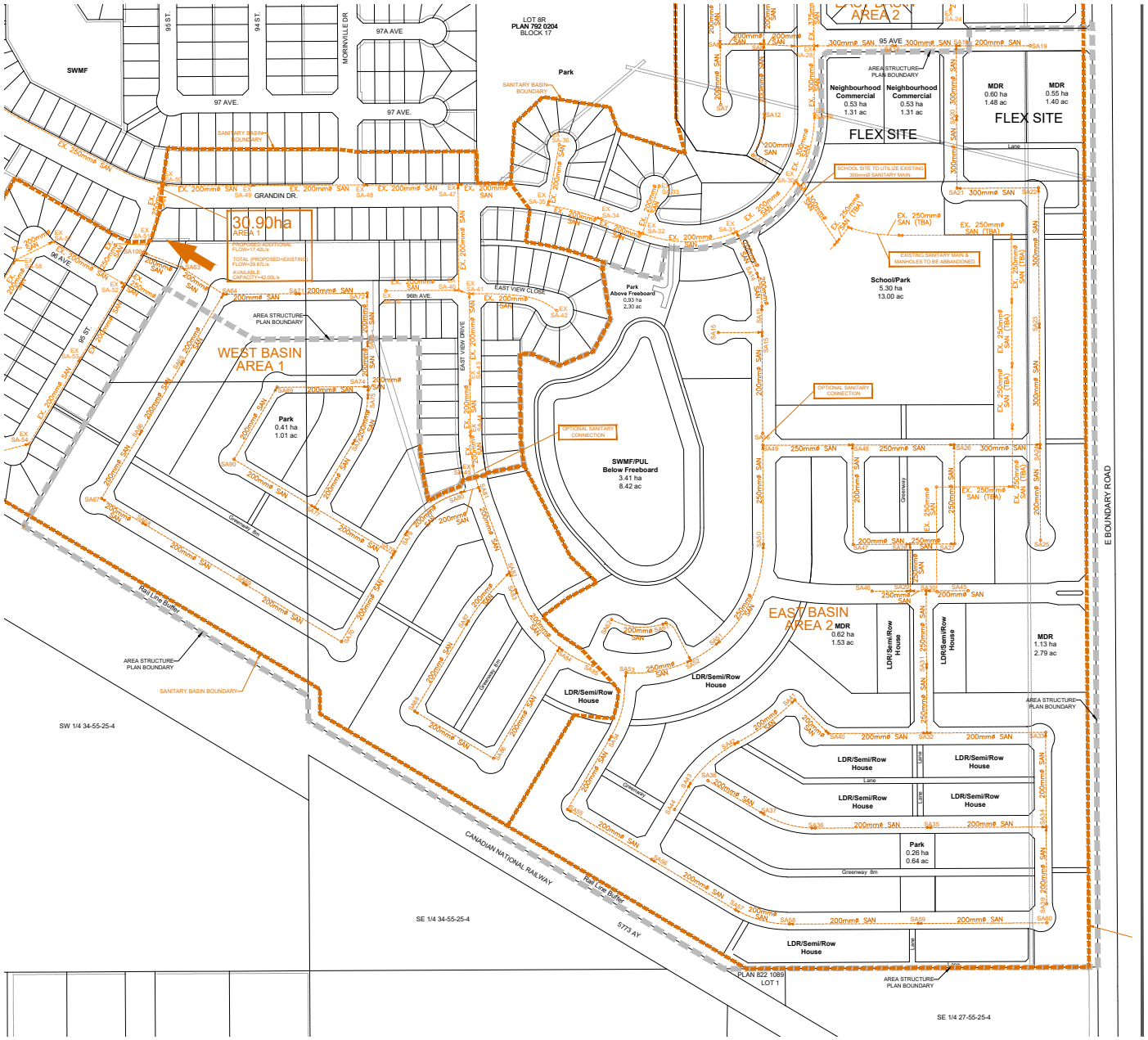


Figure 9A Sanitary Plan - South

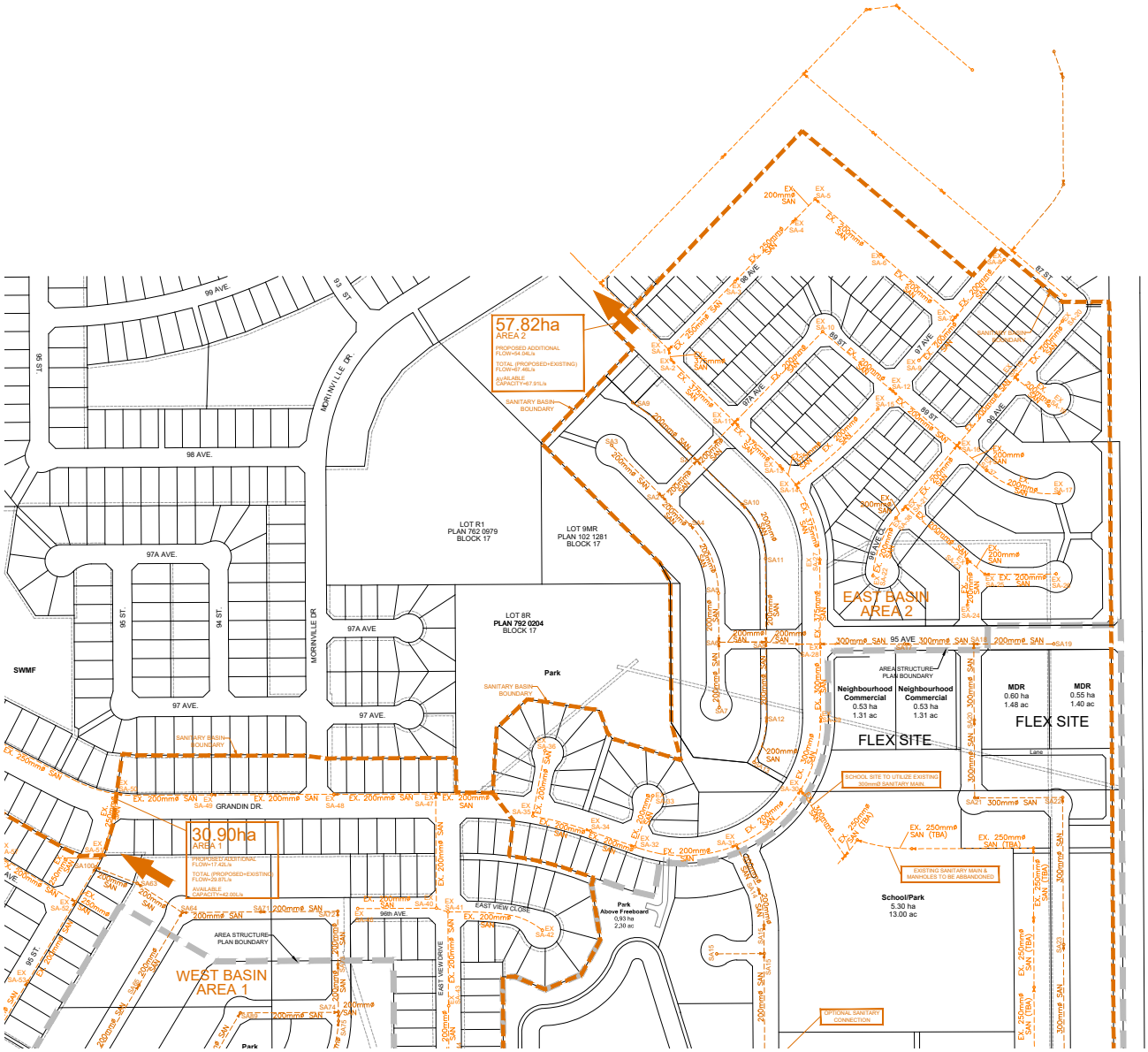


Figure 9B Sanitary Plan - North

3.8.2 Water Design

The proposed water system will connect to the existing water infrastructure at various locations throughout the development area as shown on Fig 10. There is an existing 300mm water trunk (running north/south) located +/- 70m west of East Boundary Road. This existing trunk will be utilized where possible to connect proposed services, hydrants, and mains to encourage water looping within the proposed water system. There is a proposed 300mm water main that will connect the existing 300mm water main on 95th Street to the existing 300mm water trunk along the east side of the development. A water hydraulic network analysis will be conducted to confirm proper sizing of water mains within the Area Structure Plan boundaries, as part of the next phase of detailed design..

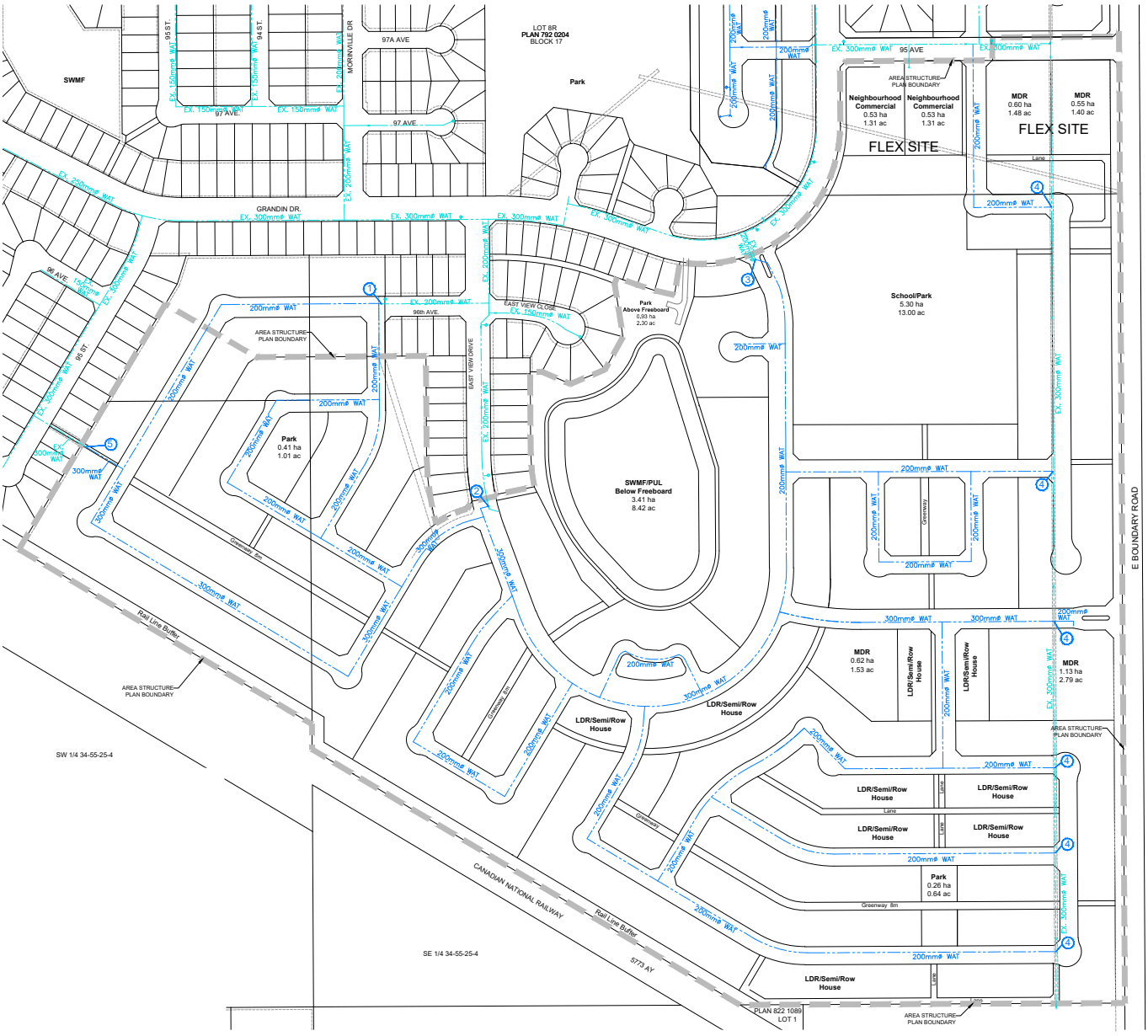


Figure 10 Water Plan

3.9 Stormwater Management

The proposed development area will be separated into two storm basins. A small portion along the west will have both the major and minor systems being directed through an existing PUL towards 95 Street. Ultimately this west basin will be directed to the existing detention pond north of Grandin Drive & west of 95th Street. The majority of the subject area will be directed toward the existing storm detention pond which is centrally located within the subject area.

Basin A

Major Drainage Areas

- Laneway : 0.9ha (c=0.82)
- Road ROW : 12.9ha (c=0.70)
- Municipal Reserve : 8.0ha (c=0.15)
- Neighbourhood Commercial : 1.1ha (c=0.95)
- Medium Density Residential : 3.5ha (c=0.65)
- Semi / Row Housing : 4.9ha (c=0.65)
- Single Family Residential : 24.0ha (c=0.40)
- SWMF : 5.8ha (c=0.46)
- **Total : 61.0 ha**

Minor Drainage Areas

- Laneway : 1.0ha (c=0.82)
- Road ROW : 15.8ha (c=0.70)
- Municipal Reserve : 9.5ha (c=0.15)
- Neighbourhood Commercial : 1.1ha (c=0.95)
- Medium Density Residential : 3.5ha (c=0.65)
- Semi / Row Housing : 6.4ha (c=0.65)
- Single Family Residential : 31.2ha (c=0.40)
- SWMF : 5.8ha (c=0.46)
- **Total : 74.3ha**

*Areas to be confirmed during detailed design.

Basin B

Major Drainage Areas

- Laneway : 0.0ha (c=0.82)
- Road ROW : 1.5ha (c=0.70)
- Municipal Reserve : 0.8ha (c=0.15)
- Neighbourhood Commercial : 0.0ha (c=0.95)
- Medium Density Residential : 0.0ha (c=0.65)
- Semi / Row Housing : 0.0ha (c=0.65)
- Single Family Residential : 6.1ha (c=0.40)
- SWMF : 0.0ha (c=0.40)
- **Total : 8.4ha**

Minor Drainage Areas

- Laneway : 0.0ha (c=0.82)
- Road ROW : 1.5ha (c=0.70)
- Municipal Reserve : 0.8ha (c=0.15)
- Neighbourhood Commercial : 0.0ha (c=0.95)
- Medium Density Residential : 0.0ha (c=0.65)
- Semi / Row Housing : 0.0ha (c=0.65)
- Single Family Residential : 6.1ha (c=0.40)
- SWMF : 0.0ha (c=0.40)
- **Total : 8.4ha**

*Areas to be confirmed during detailed design.

The basin area is expected to create a runoff peak of 10.1m³/sec, and the volume outflow is 50,960m³ (storage to be confirmed during detailed design). The storm detention pond is designed to have a normal water level elevation of 694.30. The high water level is designed to be 696.29 for a 100-Year storm event. The freeboard elevation is proposed to be 697.15.

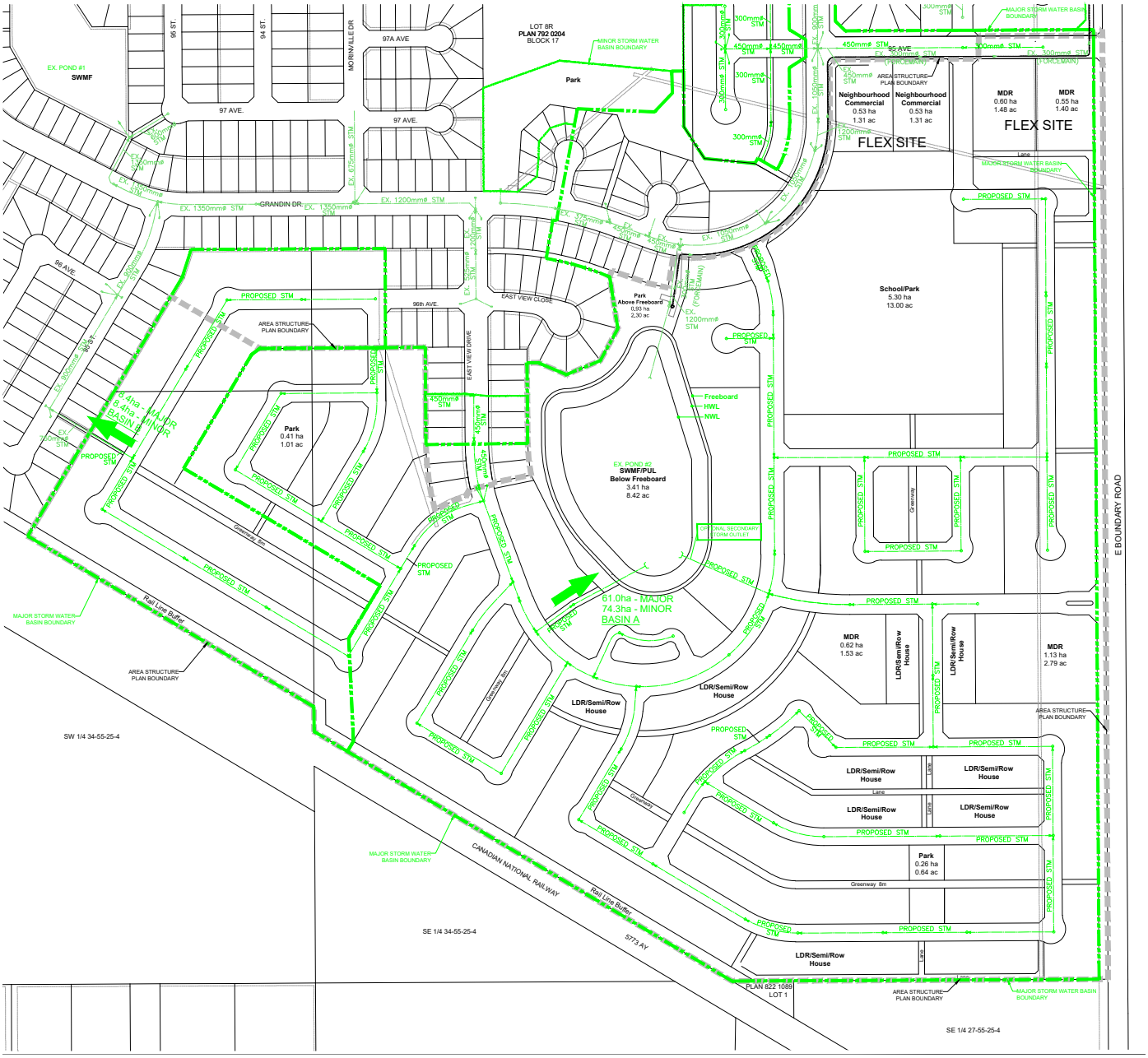


Figure 11A Storm Water Management Plan South

As per the Bel-MK Engineering Design Brief the allowable volume from the Grandin Heights development into the existing pond in a 12 hour period is 12,640m³. Originally this contribution area was calculated to have a run-off coefficient of 0.4 resulting in a contribution rate of 389m³/ha. Currently the run-off coefficient has increased from c=0.40 to c=0.43, resulting in an increased contribution rate of 418m³/ha (to be confirmed during detailed design). The contribution of this 8.4ha drainage basin would be 3,511m³ during a 1 in 100 year, 12 hour storm, which is well below the allowable 12,640m³.

The proposed storm piping within the Area Structure Plan boundaries will be sized as part of the detailed design process.

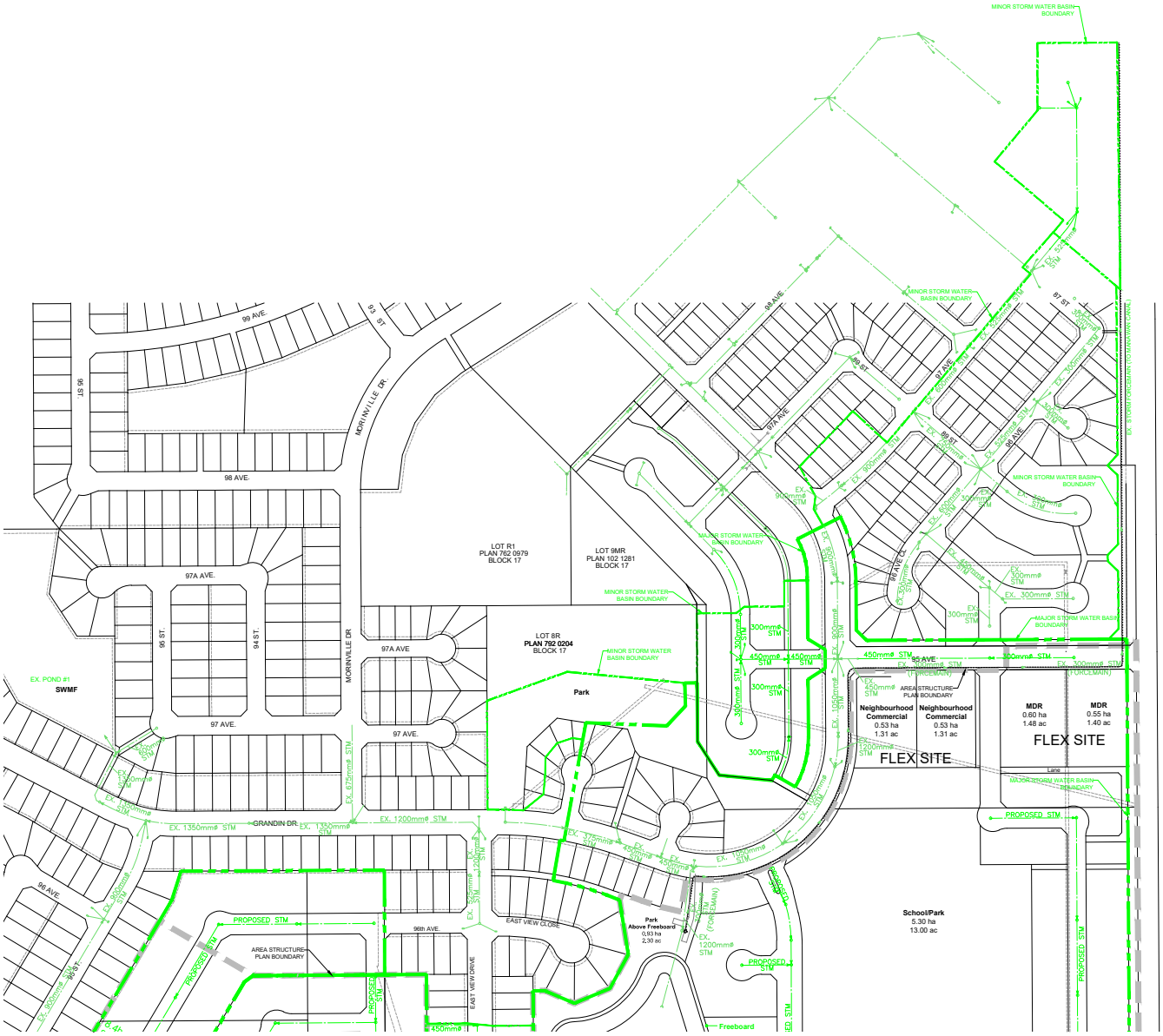


Figure 11B Storm Water Management Plan North

3.10 Development Sequence

Figure 12 - Conceptual Phasing Strategy demonstrates a generic development sequence for the Plan Area. Immediate-term development will include the School Park Site Municipal Reserve, with construction of the school in part to commence in late 2016. The first proposed phase of development is likely to build around the school park site, with direct connections to existing roadways and utilities. The proposed stormwater management facility is currently built to accept stormwater from the new plan area, and will be designated as PUL and detailed designed in the first phase of subdivision for the new Plan Area.

Subsequent phases as shown on Figure 12 will take place in generally a counter-clockwise sequence, connecting to previously developed phases. Phasing is generally influenced by access off previously developed phases, opportunities for utility looping where required, logical grading sequencing, and demands for certain development typologies in the near- versus the long-term.

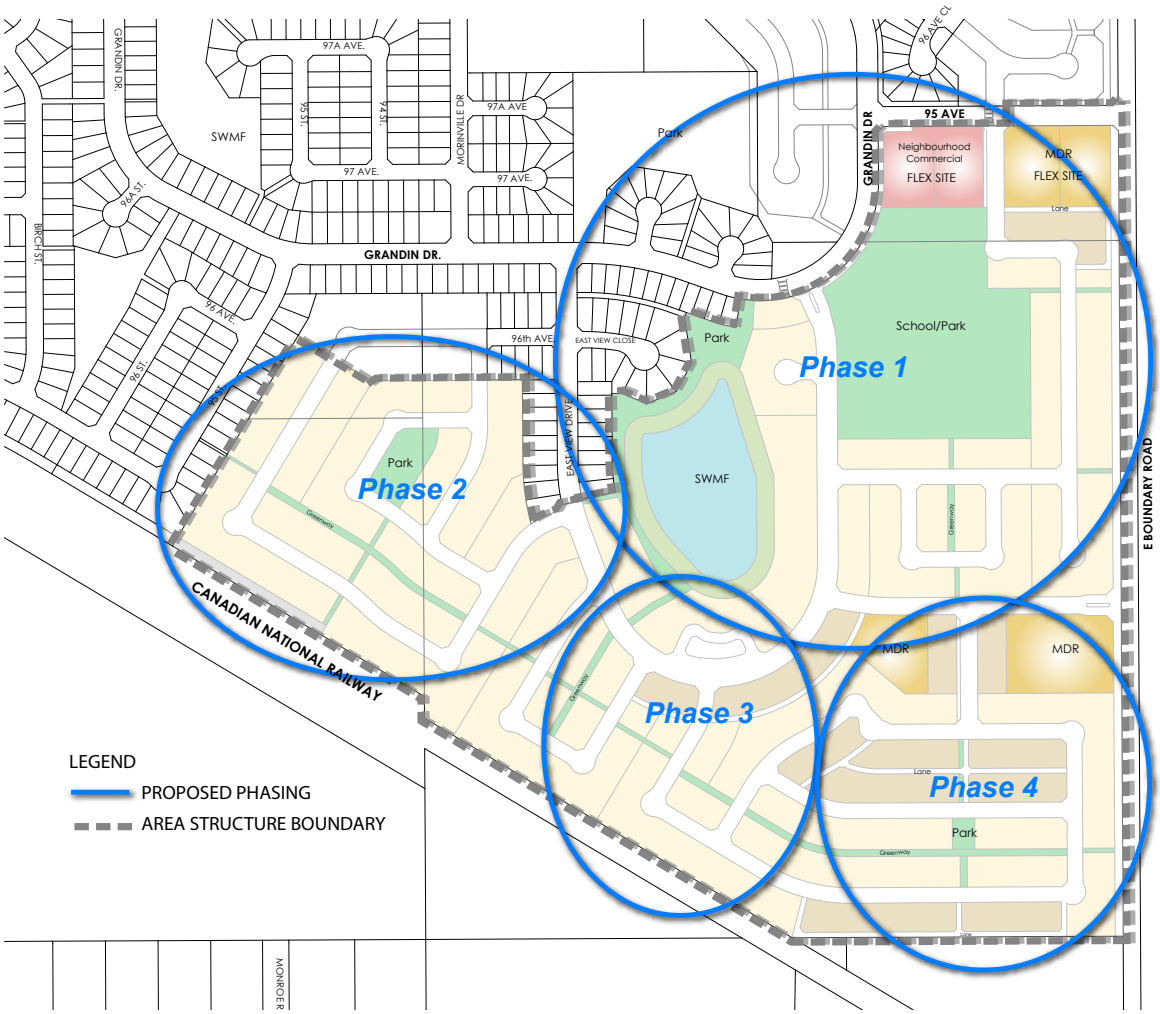


Figure 12 Conceptual Phasing Strategy

4.0 Force and Effect

The Grandin Heights ASP is intended to refine existing general policy direction assigned to these lands within the 2012 MDP, guide the subsequent assignment and implementation of land use districts to the lands within the LUB as well as establish a sound framework for future decisions on land use, subdivision, servicing and development permits. It must be noted that in making future decisions concerning the use, subdivision and development of the lands within this ASP, the Town will need to remain mindful of and monitor the capacities of both on and off-site services and make any necessary adjustments to uses, densities and lots sizes within this ASP accordingly.

The following Policies shall form part of the force and effect of this ASP:

Policy 4.1 Decisions Consistent with the Grandin Heights ASP

The Town shall ensure that all future land use, subdivision, development and servicing decisions made regarding lands within the Grandin Heights ASP shall comply with the provisions, policies, maps, figures and drawings contained within the Grandin Heights ASP.

Policy 4.2 Amendments

If any decision referred to in Policy 4.1 would constitute a major change of the provisions of this ASP, an amendment to this ASP shall be required in consideration of Policy 4.4. Decisions that would constitute a minor change to the provisions of the ASP may be considered without an amendment, in accordance with Policy 4.4, where the owner/developer can demonstrate to the satisfaction of the Town that the change does not substantively alter the intent, force or effect of the provisions of this ASP.

Amendments that may be required to this ASP shall be completed in accordance with the Municipal Government Act and all other applicable bylaws, policies and procedures.

Policy 4.3 Effect on Decision Making

This ASP, its concepts and provisions shall be used in conjunction with the relevant provision of the 2012 MDP and the current Municipal LUB, particularly in guiding the exercise of discretion in making decisions on subdivision and development permit applications. This ASP will be used to guide any required amendments to the provisions or land use designations in the 2012 MDP to ensure consistency with Section 638 of the Municipal Government Act.

Specifically tailored land use districts may be prepared and inserted in the LUB to support and facilitate the implementation of this ASP including provisions related to lot size, density, form and character, landscaping, public amenity space, and access and circulation. A specifically tailored direct control land use district may be prepared and adopted to address any unique area or development situation.

Policy 4.4 Principles for Decision Making

The exercise of discretion or variance in deciding an application or an amendment to this ASP must be both reasonable and defensible within the letter and spirit of this ASP as well as widely accepted planning principles.

If a requirement or provision of this ASP is to be deviated from or if an amendment is to be made, it is essential that those making the decision clearly understand the rationale for the requirement or provision they are being asked to vary or amend.

Discretion, variance and amendment shall only be considered if it can be demonstrated that the discretion, variance or amendment being considered will, at a minimum, not jeopardize the policies of this ASP and, at best, better serve them.

Any variance or discretion exercised or any amendment made shall be fully documented so that the reasons and rational for the variance or discretion exercised or the amendment are accurately recorded and clearly understood.

Policy 4.5 Repeated Amendment Applications

Should an owner/developer make repeated applications to amend this ASP once it is in effect, the Town may undertake or require that the owner/developer undertake an overall review of this ASP instead of continuing to make individual, isolated amendment applications so that the implications of the revision to this ASP can be considered and evaluated, at a minimum, in the context of the entire ASP area and, if warranted, beyond this ASP area.

Policy 4.6 Development Phasing

The staging or phasing of development will be determined by market forces and the cost-effective provision of infrastructure. An illustrative Phasing Sequence is shown on Figure 12– Conceptual Phasing Strategy. This phasing sequence is illustrative only and may be altered to fit changing circumstances.

Policy 4.7 Compliance With The ASP

The Town shall pursue whatever actions are deemed appropriate or necessary to secure compliance with the provision of this ASP.

Policy 4.8 Technical Information

Detailed engineering analysis and other technical information shall be required with respect to geotechnical conditions, roads and servicing (both on- and offsite) in support of decisions at the subdivision and development level. The detail shown in Figures 9A, 9B, 10, 11 and 11B is for illustrative purposes only. Servicing details will be formalized as areas develop. All site preparation, public utilities, public roads, pedestrian walkways and any other public facilities and improvements shall be professionally designed and constructed to the satisfaction of the Town in accordance with the Town's standards.

Policy 4.9 Development Agreement

The Town may require owners/developers to enter into an agreement with the Town as a condition of any subdivision or development permit application pursuant to the Municipal Development Act.

Policy 4.10 Traffic Impact Assessment

The Town may require applicant(s)/owner(s)/developer(s)/proponent(s), at their sole expense, to prepare a Traffic Impact Assessment (TIA). The timing and scope of a TIA shall be as determined by the Town and, if required, in consultation with Alberta Transportation.

Policy 4.11 Stormwater Management

Subdivision and development permit applications shall comply with the Stormwater Management Guidelines for the Province of Alberta 1999, prepared by Alberta Environment. There shall be no change between pre- and post-development off-site flows except where the application conforms to an approved stormwater management plan approved in conjunction with the Town.

With all costs passed on to the developer, the Town shall take responsibility for making all necessary arrangements and securing all required approvals regarding the disposal and management of stormwater off-site and all required documentation, permission, approvals and/or other forms of authorization from all relevant agencies having jurisdiction in relation to the application.

If an owner/applicant/proponent is prepared to undertake the required engineering, the Town may consider interim and/or on-site stormwater management until the overall stormwater management system or required components of it are in place and approved.

Policy 4.12 Power Lines, Shallow Utilities

Proposed power lines to service the ASP area and other shallow utilities such as gas and telephone shall be installed underground.

Policy 4.13 Reserve Lands

Municipal Reserve will be dedicated at the time of subdivision in accordance with this ASP as per the relevant provisions of the Municipal Government Act.

Policy 4.14 Historical Resources

In any area identified by Alberta Culture and Community Spirit (ACCS), the Town shall refer any land use, subdivision or development application to ACCS and impose any conditions necessary, should the application be approved, to ensure that the owner/developer complies with any requirements ACCS identifies pursuant to historical resources legislation and regulations.