

# **Aster Neighbourhood Structure Plan**

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*Office Consolidation April 2016*

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Bylaw 17366 was adopted by Council in January 2016. In April 2016, this document was consolidated by virtue of the incorporation of the following bylaws which were amendments to the original Bylaw 17366.

*Bylaw 17366   Approved January 26, 2016 (to adopt the Aster Neighbourhood Structure Plan)*

## **Editor's Note:**

This is an office consolidation edition of the Aster Neighbourhood Structure Plan, Bylaw 17366, as approved by City Council on January 26, 2016. This edition contains all amendments and additions to Bylaw 17366.

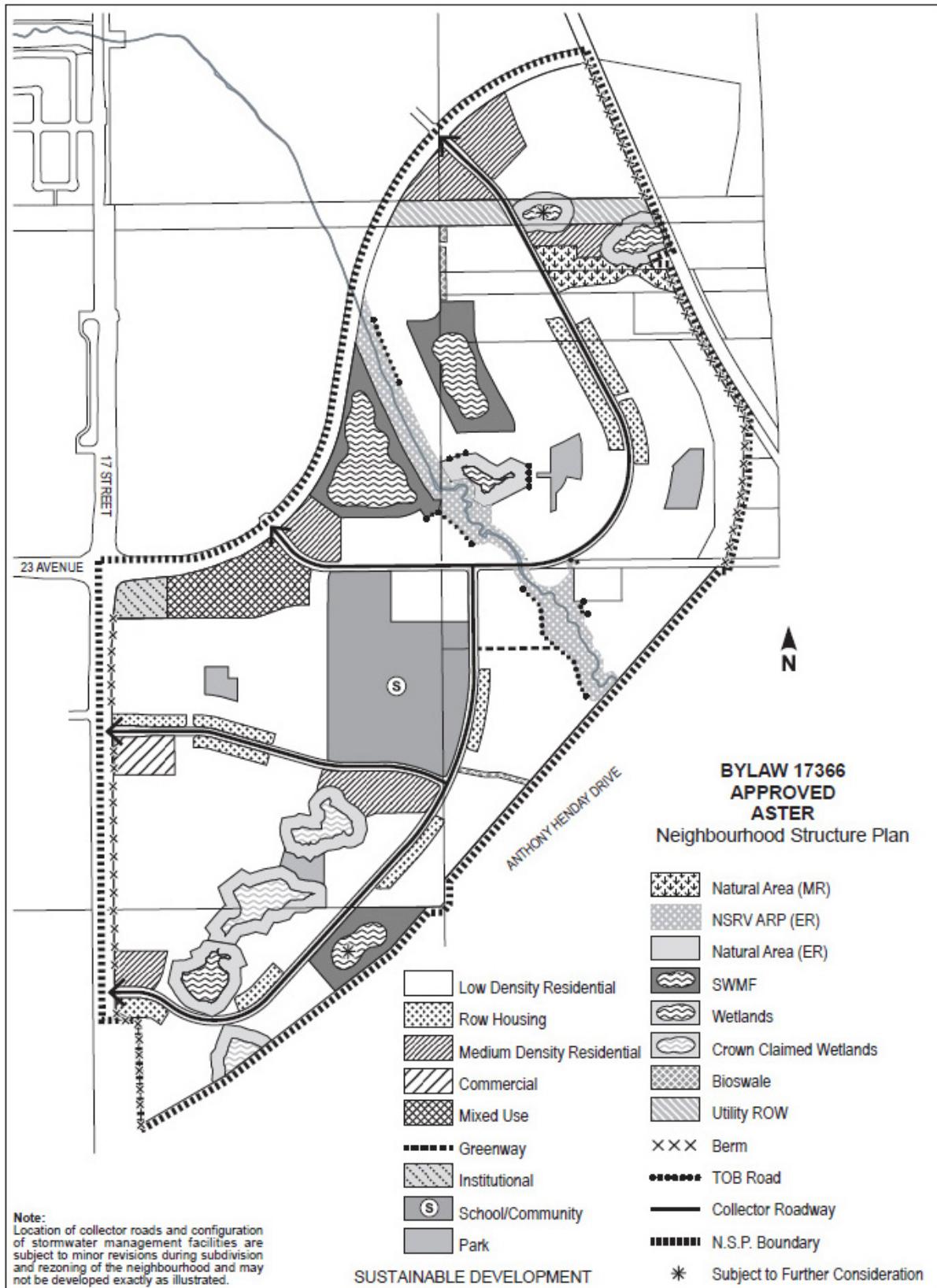
For the sake of clarity, new maps and a standardized format were utilized in this Plan. All names of City departments have been standardized to reflect their present titles. Private owners' names have been removed in accordance with the Freedom of Information and Protection of Privacy Act. Furthermore, all reasonable attempts were made to accurately reflect the original Bylaws. All text changes are noted in the right margin and are italicized where applicable.

This office consolidation is intended for convenience only. In case of uncertainty, the reader is advised to consult the original Bylaws, available at the office of the City Clerk.

City of Edmonton

Sustainable Development

# ASTER NEIGHBOURHOOD STRUCTURE PLAN





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# **1.0 ADMINISTRATION**

## **1.1 Purpose**

The Aster Neighbourhood Structure Plan (NSP) describes the land use framework and development objectives for a new neighborhood located in the southeast area of the City of Edmonton. This neighbourhood is bound by the future 23 Avenue to the north, Railway Corporation right-of-way to the east, Transportation Utility Corridor/Anthony Henday Drive to the south, and 17 Street to the west. This Plan will establish how the land will be transformed into a residential community that advances the City of Edmonton's "The Way We Grow: Municipal Development Plan", as well as "The Way We Move: Transportation Master Plan" and provides a range of housing opportunities for a diversity of family types and income levels.

This NSP conforms to the intent, spirit and guidelines as set forth in the Meadows Area Structure Plan (ASP) (Bylaw 13531 approved by Edmonton City Council in January 2004).

This NSP identifies:

- The location, configuration and area of various land uses including residential, commercial, institutional, parks and natural areas.
- The anticipated densities and configuration of residential development.
- The pattern and alignment of the arterial and collector roadways and shared use paths or pedestrian connections for active transportation.
- The required services and utilities.
- The proposed implementation and phasing of development.

## **1.2 Timeframe**

Development in Aster is expected to commence in 2016 and is estimated, at current absorption rates, to be completely built-out within 10 years.

## **1.3 Interpretation**

All symbols, locations and boundaries shown in the figures of this NSP should be interpreted as conceptual unless otherwise stated in the document, or where they coincide with clearly recognizable physical or fixed features within the Plan area.

Each subsection of the NSP provides a description of applicable land use strategies, followed by applicable objectives, policies, implementation strategy, rationale, and technical summary.

All policy statements containing “shall” are mandatory and must be implemented. Where a policy proves impractical or impossible, an applicant may apply to amend the Plan. All policy statements containing “should” are an advisory statement and indicate the preferred objective, policy and/or implementation strategy. If the “should” statement is not followed because it is impractical or impossible, the intent of the policy may be met through other agreed-upon means.

## **1.4 Monitoring**

The City of Edmonton actively tracks development statistics and results. Policies, text, and mapping information contained in this document may be amended from time to time by a Council approved Bylaw. These Bylaw Amendments will ensure the NSP responds to, and remains current with planning and development policies, and trends affecting suburban development.

## **1.5 Amendments**

Any amendments made to the Aster NSP involving policies, text, or mapping shall be completed in accordance with the *Municipal Government Act*, The Meadows Area Structure Plan (ASP), and all applicable bylaws, policies and procedures.

## **1.6 Report Format**

The Neighbourhood Structure Plan is divided into eight chapters. Chapter 1 outlines the administrative information pertaining to the Plan. Chapter 2 explains the neighbourhood context i.e., location, background and land ownership. Chapter 3 provides the existing physical constraints and human-made features within and abutting the Plan area and their effects on future development. Chapter 4 outlines the vision and objectives for the neighbourhood. Chapter 5 describes the land use concepts proposed, as well as the overall transportation network. Chapter 6 outlines how the Plan complies with the statutory planning documents in place. Chapter 7 identifies the location of the proposed major utility infrastructure components relating to storm and sanitary drainage, water servicing and shallow utilities. Lastly, Chapter 8 provides direction with respect to implementation of the Plan. It approximates the most logical and efficient method of staging the development and further provides rationale for the timing and need for development to commence in 2016.

## 2.0 ASTER CONTEXT

### 2.1 Location

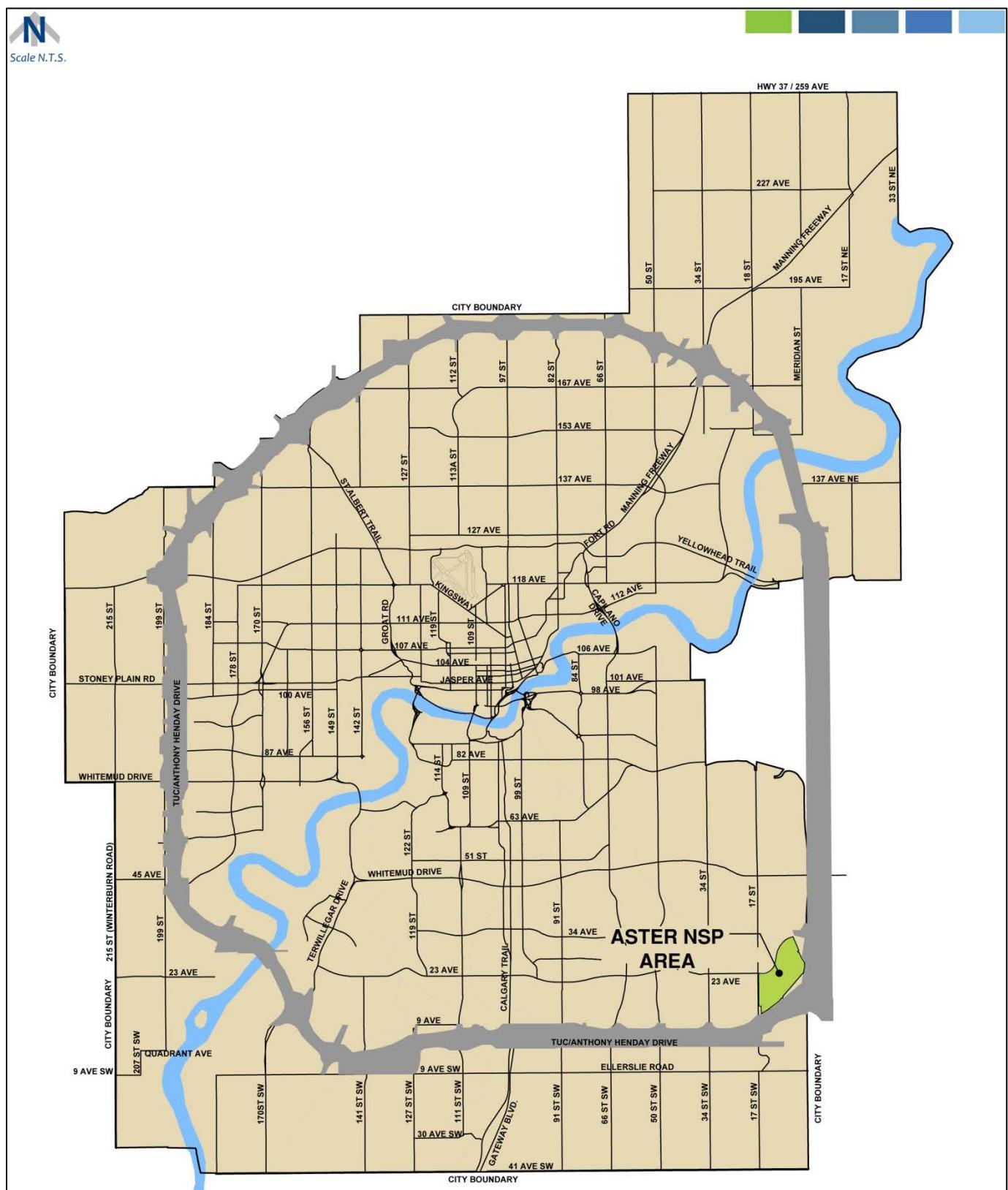
Aster occupies 204 hectares (504 acres) in the southeast sector of the City of Edmonton (**Figure 1 - Location Plan**, page 4). The Plan will provide a framework for the rezoning and subdivision of the area into a neighbourhood which will provide for a variety of housing types, educational facilities, commercial land uses and a large interconnected natural area network.

The Aster neighbourhood comprises of lands located within portions of northwest, northeast, southeast and southwest 5-52-23-4, as well as northwest, northeast and southwest 32-51-23-4. The Aster neighbourhood is situated in the southern portion of the Meadows ASP, east of the Laurel NSP, south of the Tamarack NSP, (**Figure 2 - Context Plan**, page 5) and bound by the following:

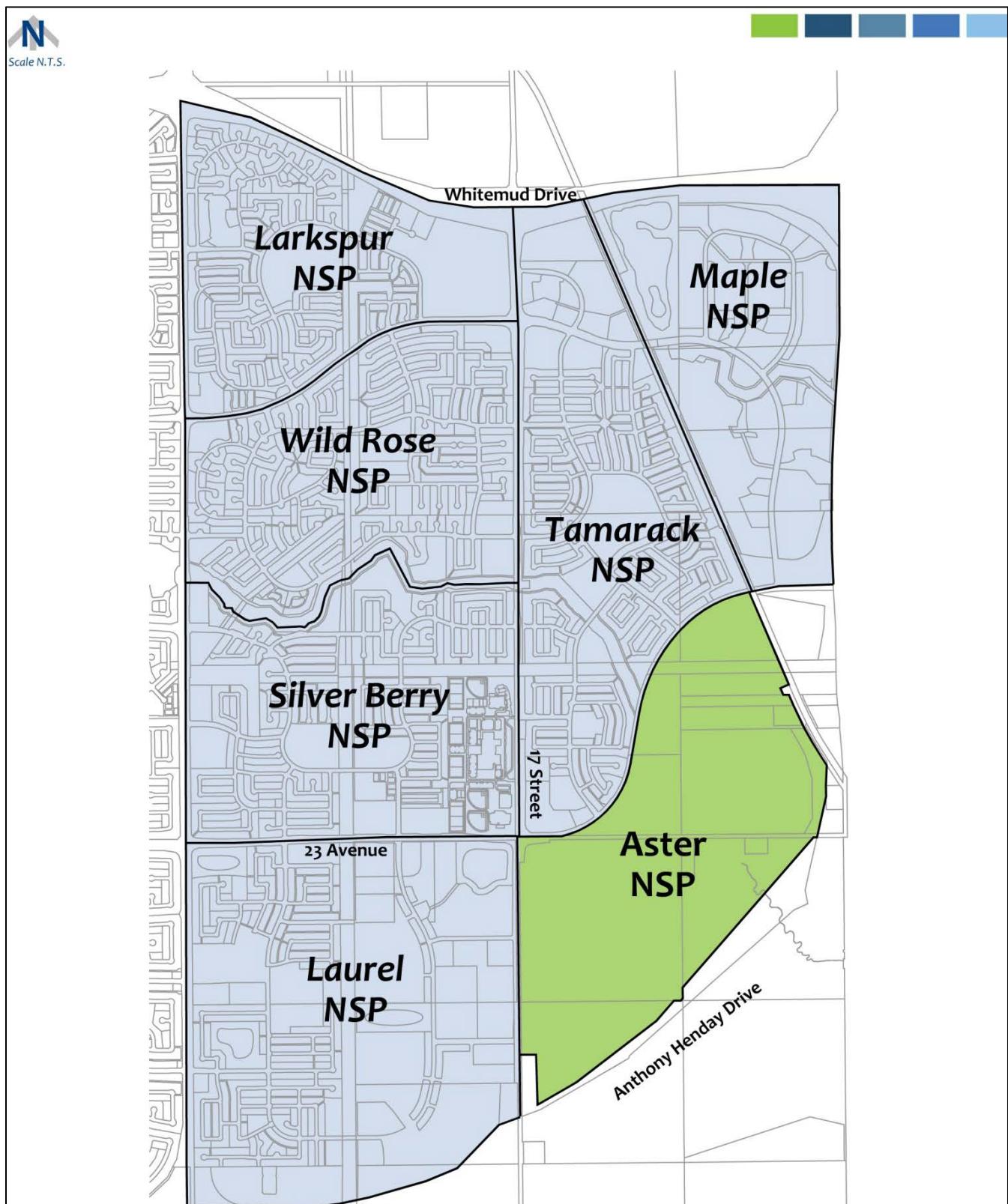
- **Northern Boundary:** Future 23 Avenue
- **Eastern Boundary:** Railway Corporation right-of-way
- **Southern Boundary:** Transportation/ Utility Corridor/Anthony Henday Drive
- **Western Boundary:** 17 Street



**Figure 1 - Location Plan**



**Figure 2 - Context Plan**



## 2.2 Background

The Aster NSP was prepared in response to current and anticipated market demands in the Edmonton region, as well as the aspirations of the landowners in the Plan area.

The preparation of this NSP has been guided by existing City of Edmonton statutory plans and policies including The Way We Grow, The Way We Move, The Way We Green, The Way We Live, The Meadows ASP, and the Urban Parks Management Plan. Conformance to these plans and policies is referenced in Section 6.0 of this NSP.

## 2.3 Land Ownership

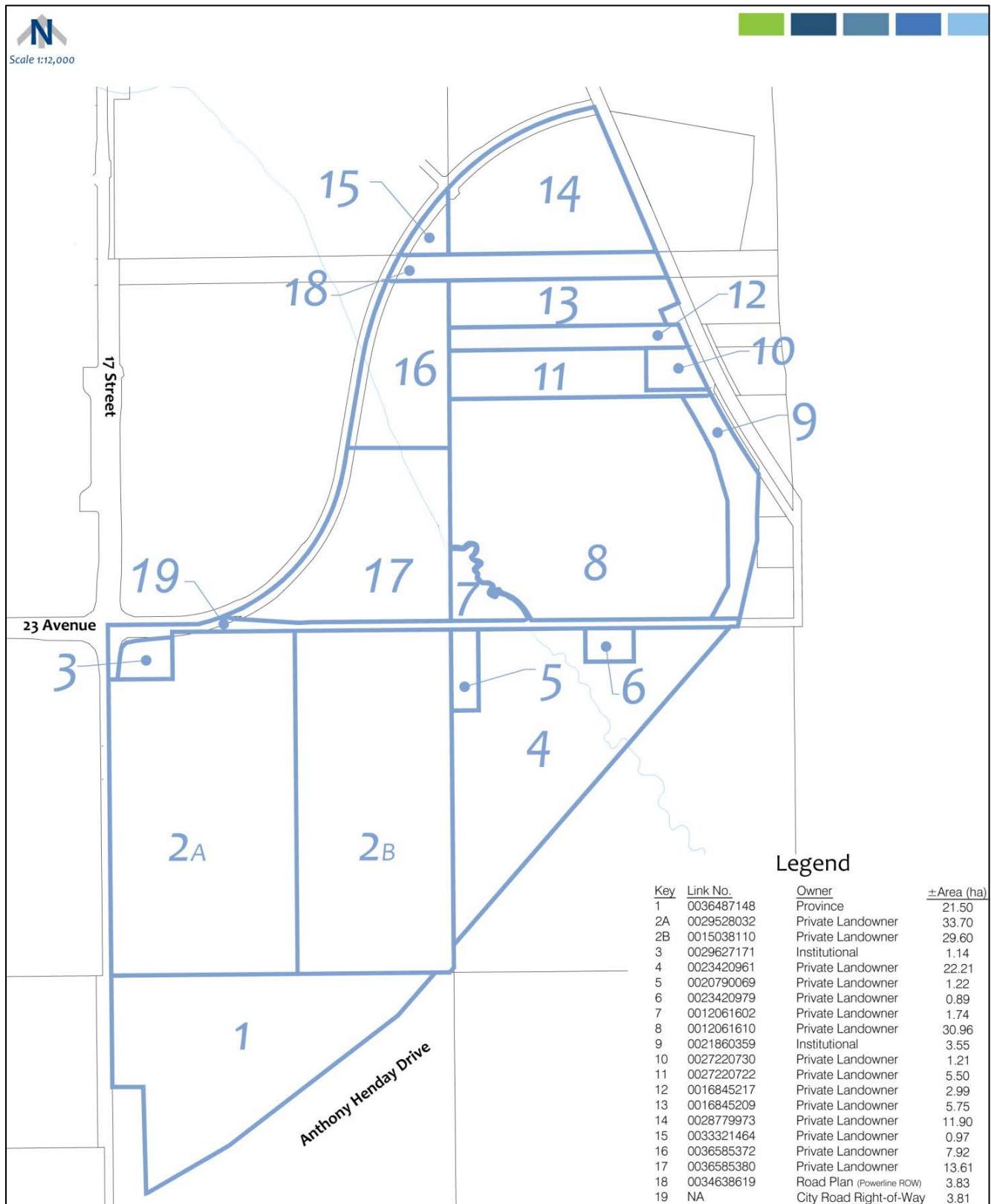
A listing of legal parcels and ownership is provided in **Table 1 - Land Ownership**. (**Figure 3 - Land Ownership Plan**, page 7) demonstrates the land ownership for the Plan area in which Qualico Communities and Dream Developments are the largest land owners.

**Table 1 - Land Ownership**

Key	Link No.	Owner	±Area (ha)
1	36487148	Province <i>Crown Claimed Wetland 4.54ha</i>	21.5
2A	29528032	Private Landowner <i>Crown Claimed Wetland 1.59ha</i>	33.7
2B	15038110	Private Landowner <i>Crown Claimed Wetland 2.76ha</i>	29.6
3	29627171	Institutional	1.14
4	23420961	Private Landowner	22.21
5	20790069	Private Landowner	1.22
6	23420979	Private Landowner	0.89
7	12061602	Private Landowner	1.74
8	12061610	Private Landowner	30.96
9	21860359	Institutional	3.55
10	27220730	Private Landowner	1.21
11	27220722	Private Landowner	5.5
12	16845217	Private Landowner	2.99
13	16845209	Private Landowner	5.75
14	28779973	Private Landowner	11.9
15	33321464	Private Landowner	0.97
16	36585372	Private Landowner	7.92
17	36585380	Private Landowner	13.61
18	34638619	Road Plan (Powerline ROW)	3.83
19	n/a	City Road ROW	3.81
<b>Total</b>			<b>204</b>

\*Note: Crown Claimed wetland areas are inclusive of ER buffers.

**Figure 3 - Land Ownership Plan**



## 2.4 Stakeholder Consultation Summary

In preparation of the Aster NSP, meetings were held between various City Departments, Agencies and stakeholders in order to identify opportunities, constraints, and facilitate the overall planning approach. The stakeholders contacted include the Ward Councillor, representatives from the City of Edmonton Sustainable Development, Transportation Services, Financial Services and Utilities, EPCOR, ATCO, Alberta Infrastructure, CN Rail, Edmonton Public and Separate School Boards, Edmonton Community Leagues, Sierra Club, and local land owners.

The following table summarized the key concerns raised by the stakeholders as well as how they were addressed or why they were not addressed in the Plan:

**Table 2 - Stakeholder Concerns**

Stakeholder Concerns	Concerns Addressed	Concerns Not Addressed
Retain existing geological features, such as wetlands, and rolling hummocky terrain.	The NSP will retain the existing geological features by incorporating them into an interconnected network of natural areas and wetlands.	
Incorporate the following features into the neighbourhood:  An interconnected ecological network  Low impact development and sustainable features (such as bioswales)  Pedestrian connectivity and paved shared use paths along Mill Creek  Signalized rail crossings	<p>The natural areas network includes Mill Creek, numerous high value wetlands, bioswales, naturalized utility corridors and park areas.</p> <p>The NSP incorporates policies which encourage low impact development (LID) techniques, such as bioswales.</p> <p>The Plan has incorporated strong pedestrian connectivity and a number of shared use paths along Mill Creek and within the neighbourhood. These shared use paths provide connectivity to city-region level active transportation networks, and to local activity nodes such as commercial sites and schools.</p>	Determining the need for signalized rail crossings will be addressed in the Transportation Impact Assessment (TIA).

Stakeholder Concerns	Concerns Addressed	Concerns Not Addressed
Incorporate community gardens		Municipal reserve land uses have been provided in the Plan area and located strategically throughout the neighbourhood. These municipal reserve lands provide numerous opportunities for the City of Edmonton, through the Food and Urban Agriculture Strategy, to designate locations for community gardens.
Create unique neighbourhood features	<p>The Plan encompasses a number of unique community features the key one being Mill Creek, a natural watercourse which provides ecological connectivity, recreation, and aesthetic value to the neighbourhood and its residents.</p> <p>Additional natural areas identified for integrated preservation include a number of high-value wetlands, utility corridors, treed areas and buffer areas.</p>	
Ensure school site (Public and Catholic) and community league integration		
Provide two access points for pick-up and drop-off on school and community league site; and	Neighbourhood features such as the community league and school site are centrally located within the neighbourhood and have at least two access points to collector roads.	
Ensure community league centrally located between school sites.		

A land owner update meeting was held on Tuesday February 3, 2015, to update all land owners on the development concept and the timing of Council public hearing. Feedback from land owners included redistributing the MR for school and amenities. To accomplish this, MR was redistributed across Aster to ensure an equitable development outcome for all.

A public open house was held on February 19, 2015, to discuss the proposed Aster NSP. The open house was attended by 29 residents and the major topics of discussion include provincial and municipal bus/LRT strategic plans, purchasing of property/lots; and residential housing mix.

## 3.0 PHYSICAL ENVIRONMENT

### 3.1 Site Features

Fourteen separate technical reports were prepared to evaluate existing site features, as per the City of Edmonton's Terms of Reference for the preparation of Neighbourhood Structure Plans (2010). The following reports were submitted with the original submission and used to prepare the land use plan presented in this NSP:

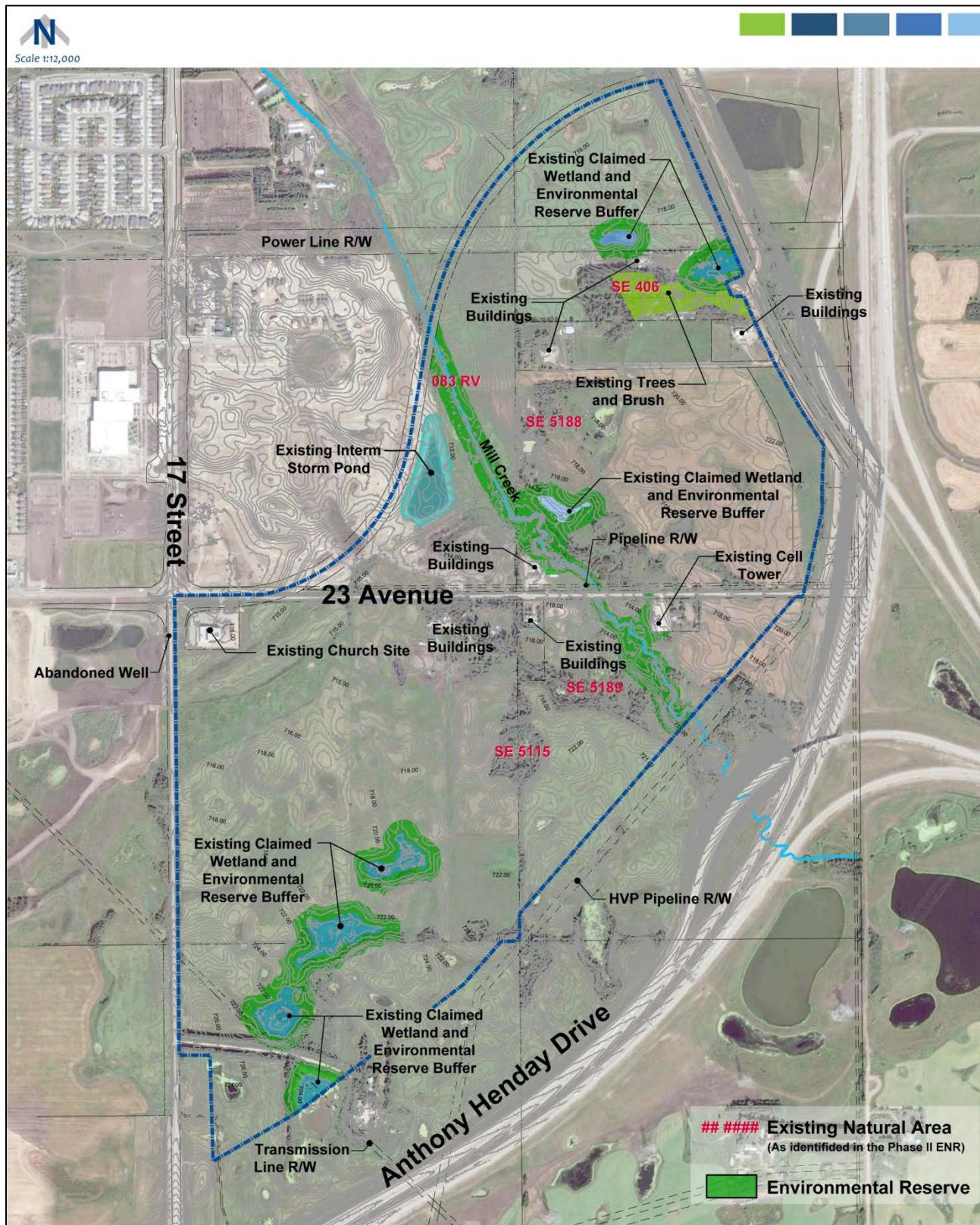
- Environmental Overview, Hoggan Engineering & Testing Ltd.
- Geotechnical Report/Slope Stability Analysis, J.R. Paine & Associates Ltd.
- Historical Resources Impact Assessment, Stantec Consulting Ltd.
- Historical Resources Overview (HRO), Stantec Consulting Ltd.
- Phase II Ecological Network Report (ENR), Fiera Biological Consulting Ltd.
- Preliminary Water Body Identification and Mapping for The Meadows 5 Area, Fiera Biological Consulting Ltd.
- Topographical survey through Lidar, Pals Geomatics Corp.
- Transportation Impact Assessment (TIA), Bunt & Associates Engineering.
- Risk Assessment, Doug McCutcheon & Associates, Consulting.
- Neighbourhood Design Report (NDR), MMM Group Limited.
- Hydraulic Network Analysis (HNA), MMM Group Limited.
- Environmental Noise and Vibration Impact Assessment, ACI Acoustical.
- Parkland Impact Assessment (PIA), MMM Group Limited.
- Community Knowledge Campus Needs Assessment (CKCNA), MMM Group Limited.

#### 3.1.1 Topography

As described by J.R. Paine & Associates, the site consists of gently undulating to rolling, hummocky terrain. The elevation of the neighbourhood ranges from 711 m above mean sea level (AMSL) to 726 m AMSL (**Figure 4 - Existing Site Features**, page 11). The lowest elevations are close to 23 Avenue, in the north, and the highest elevations are on the Crown lands in the south, along the Plan area boundary with the Transportation and Utility Corridor.



**Figure 4 - Existing Site Features**



### **3.1.2 Soil and Groundwater Conditions**

A geotechnical investigation and slope stability study was undertaken by JR Paine and Associates Ltd. Field work was undertaken between November 2012 and January 2013. The findings of the field investigation, laboratory testing and the analysis are found in their report dated August 2013. The local surficial geology of the area is classified as stagnation moraine of Pleistocene age. The soil conditions of the site consist of surface topsoil with sand, underlain by silt and/or clay, underlain by clay till with varied clay, silt and sand content. The study included a slope stability assessment and based on the engineer's perspective no concerns were noted. In particular it was noted by the geotechnical consultant that most of the creek slopes are less than 2.0m in height, with the representative areas that were surveyed being no more than 1.2m in height. This preliminary investigation of the development indicates that the soils will pose no apparent constraints to development.

J.R. Paine & Associates Ltd. also analyzed the existing groundwater conditions. In general the groundwater was high across the site, with observed levels between 0.9 and 5.3 m in depth below ground surface. Some issues to note for the development stage are as follows:

- Temporary dewatering measures will likely be required during utility installation and pumping from the trenches should be sufficient to maintain working conditions.
- Increased base thickness, subgrade preparation or cement stabilization may be required.
- Peripheral exterior weeping tile lines, at minimum, will be required for all basements or deep foundations.
- Foundation drain services or sub pump systems are recommended for this site for all lots to collect weeping tile flows.

### **3.1.3 Mill Creek**

Mill Creek is part of the North Saskatchewan River Valley Area Redevelopment Plan (NSRV ARP (Bylaw 7188). An amendment will be undertaken to Bylaw 7188 to reflect the Mill Creek ravine system as defined in this NSP.

Mill Creek is a shallow, meandering creek that flows in a northwest direction through the centre of Aster. The creek was included in a study undertaken by Associated Engineering for the City of Edmonton entitled *Mill Creek and Fulton Creek Flood Study*, dated November 1999 and the *Mill Creek, Meadows and Fulton Creek Area Master Plan (AMP)*, dated October 2001. A central feature of these studies was the need to lower and re-meander Mill Creek to restore ecological function caused by previous dredging of the creek, and to increase the development potential of the surrounding area. Building upon the recommendations of these studies, an environmental

reserve has been provided for Mill Creek from the proposed 23 Avenue alignment to the quarter section line, approximately 390m upstream (southeast) of the crossing.

### **3.1.4 Water Bodies**

Water bodies within the City of Edmonton are regulated by policies at both provincial and municipal government levels. The Province of Alberta may claim the title to naturally-occurring, permanent water bodies in the province as per the Public Lands Act. In addition, the provincial Crown owns all water in the province as per the Water Act. Alberta Environment and Sustainable Resource Development (AESRD) is responsible for determining the Crown's interests under the Public Lands Act, as well as for overseeing the implementation of the Water Act, including regulation of, and compensation for, wetlands disturbed or altered by development. Prior to development proceeding, the Crown must identify wetlands to be claimed as per the Public Lands Act. The City of Edmonton is responsible for wetland securement, management and public engagement; these responsibilities and strategies are guided by a number of policy documents, including the "Wetland Strategy" (2012), "The Way We Green" environmental strategic plan (2008), and "Natural Area Systems Policy C-531" (2007). Land use plans must consider municipal policies and strategies regarding wetland management, and all wetlands that may be removed or altered as part of development must be compensated for under the Water Act.

The following principles will be incorporated into the development concept:

- Core biodiversity areas and habitats shall be identified, and ecological connectivity between these core areas will be enhanced with semi-natural features such as stormwater management facilities, parks, greenways, and bioswales that act as ecological corridors or stepping stones between core areas.
- To the extent possible, road density in close proximity to core ecological areas will be minimized, and natural areas will be buffered from roads with appropriate development setbacks.
- Roads in close proximity to natural areas shall consider design modifications to facilitate ecological connectivity (i.e., culverts for amphibian passage under roads, curb design, etc.).
- Conservation of larger patches of natural habitat is preferred over the conservation of smaller, more dispersed habitats.

The Phase II Ecological Network Report (ENR) prepared by Fiera Biological Consulting identified several temporary, permanent, semi-permanent (seasonal), and anthropogenic water bodies within Aster. Water bodies in the study area were mapped using a combination of desktop analysis methods, including: 1) on-screen digitization of wetland boundaries using high resolution colour aerial photographs; 2) an automated derivation of depressions using a terrain

analysis; and 3) a time-series mapping of ‘open water’ (standing water not obstructed by vegetation) over a three-decade period using satellite imagery. Water bodies located on participating lands were also delineated and classified in the field using a combination of hydrological, vegetation, and soil characteristics. In addition to being delineated and classified, each water body that could be field surveyed was assigned an ecological function and condition score using a modified wetland rapid assessment method (RAM) developed for wetlands in the central parkland region of Alberta. These scores were based on a variety of metrics, including size, biodiversity, ecological and hydrologic connectivity, and condition. Using these scores, the Phase II ENR identified a number of opportunities for wetland conservation using either Municipal Reserve (MR) or Environmental Reserve (ER) as retention tools.

Three water bodies were classified as Class IV and two were classified as Class V using the Steward and Kantrud (1971) wetland classification system. Both Class V wetlands, as well as one of the Class IV wetlands, have been claimed by the Province under the Public Lands Act. In addition to the three wetlands claimed by the Province, four Class III wetlands will be retained or partially retained in the neighbourhood. Wetlands have been selected for retention based on their location in the neighbourhood’s ecological network, their ecological significance, and on other planning and development constraints. Semi-natural habitat, including park and school sites, stormwater management facilities, bioswales, and greenways have been strategically placed to contribute to the post-development ecological network (**Figure 5 - Ecological Connectivity Plan**, page 17). The hydrologic characteristics of retained features such wetlands and tree stands should be maintained in the urbanized condition. The design of the neighborhood should seek to ensure that the function of these features does not cause adverse risk to the surrounding community. Details on the preservation of these features are provided in the Phase II ENR and the NDR. Further refinement to these details will be provided at the NAMP stage.

One of the Class III wetlands is located within the Utility ROW. This wetland currently shows a buffer as per City requirements, however, a reduced buffer will be considered during the zoning and subdivision process. As such, a note has been placed on **Figure 10 - Land Use Concept Plan**, page 28.

### 3.1.5 Natural Areas

Much of the land in Aster has been cultivated for agricultural purposes, and, as such, there are a limited number of large, undisturbed tree stands in the Plan area. Nevertheless, a number of existing Natural Areas have been identified in previous City of Edmonton inventories (i.e., Golder, 2010) and in desktop assessments conducted as part of the Phase II ENR.

Natural Areas identified in the Phase II ENR for Aster include:

- Mill Creek ravine, including Mill Creek and treed areas along its banks (083 RV).

- Natural Area SE 406 in the north portion of SE 5-52-23-4, south of the power line right-of-way.
- Natural Area SE 5188 on the east bank of Mill Creek in SE 5-52-23-4.
- Natural Area SE 5189 on the west bank of Mill Creek in NE 32-51-23-4.
- Natural Area SE 5115, west of Mill Creek ravine in NW 32-51-23-4 and NE 32-51-23-4.

Portions of SE 5188, as well as the majority of SE 406 and Mill Creek Ravine (083 RV), will be retained using a combination of Municipal Reserve (uplands) and Environmental Reserve (streams/wetlands and their development setbacks) (**Figure 4 - Existing Site Features**, page 11). These areas will provide core ecological habitat in Aster and will provide ecological connectivity both within and beyond the neighbourhood. Mill Creek ravine, dominated by balsam poplar (*Populus balsamifera*), white spruce (*Picea glauca*), and trembling aspen (*Populus tremuloides*) tree stands, provides excellent nesting habitat for songbirds and other wildlife. Mill Creek will be retained as Environmental Reserve, and will form a key component of the post-development ecological network as well as will act as an important wildlife corridor through the neighbourhood. Mill Creek will be connected to other Natural Areas and water bodies in the neighbourhood, including SE 5188, SE 406, and a number of wetlands in the southwest portion of the neighbourhood, by semi-natural habitat such as park and school sites, stormwater management facilities, bioswales, and greenways.

### **3.1.6 Existing Features**

An Environmental Overview was completed by Hoggan Engineering and Testing Ltd. (November 21, 2014). This study consisted of a historical investigation; site reconnaissance; review of subsoil conditions; overview of neighbouring operations; municipal and regulatory records; and interviews with personnel familiar with site history of the site. This assessment revealed the following site features in the Aster area:

- Large soil stockpile.
- Agricultural lands.
- Cleared agricultural lands.
- Creek or seasonal drainage channel running northwest to southeast.
- Small areas of trees, bush and grassland.
- Church.
- Horse ranch (Quonset style building and barn).
- Residences with associated garages and outbuildings.
- Stored vehicles.

- Greenhouse.
- Vacant mobile home, trailer and boat.

### **3.1.7 Environmental Concerns**

The Environmental Overview of the Aster area was completed for participating lands. A full Phase 1 ESA will be required at the rezoning stage. As per the Environmental Overview the following potential environmental concerns were identified in relation to the former and current land uses in the Aster site:

- The nature of former land ownership.
- Adjoining land uses.
- Former oil well in the northwest.
- Adjacent roadways.
- Adjacent railway line.
- Anthony Henday Drive.

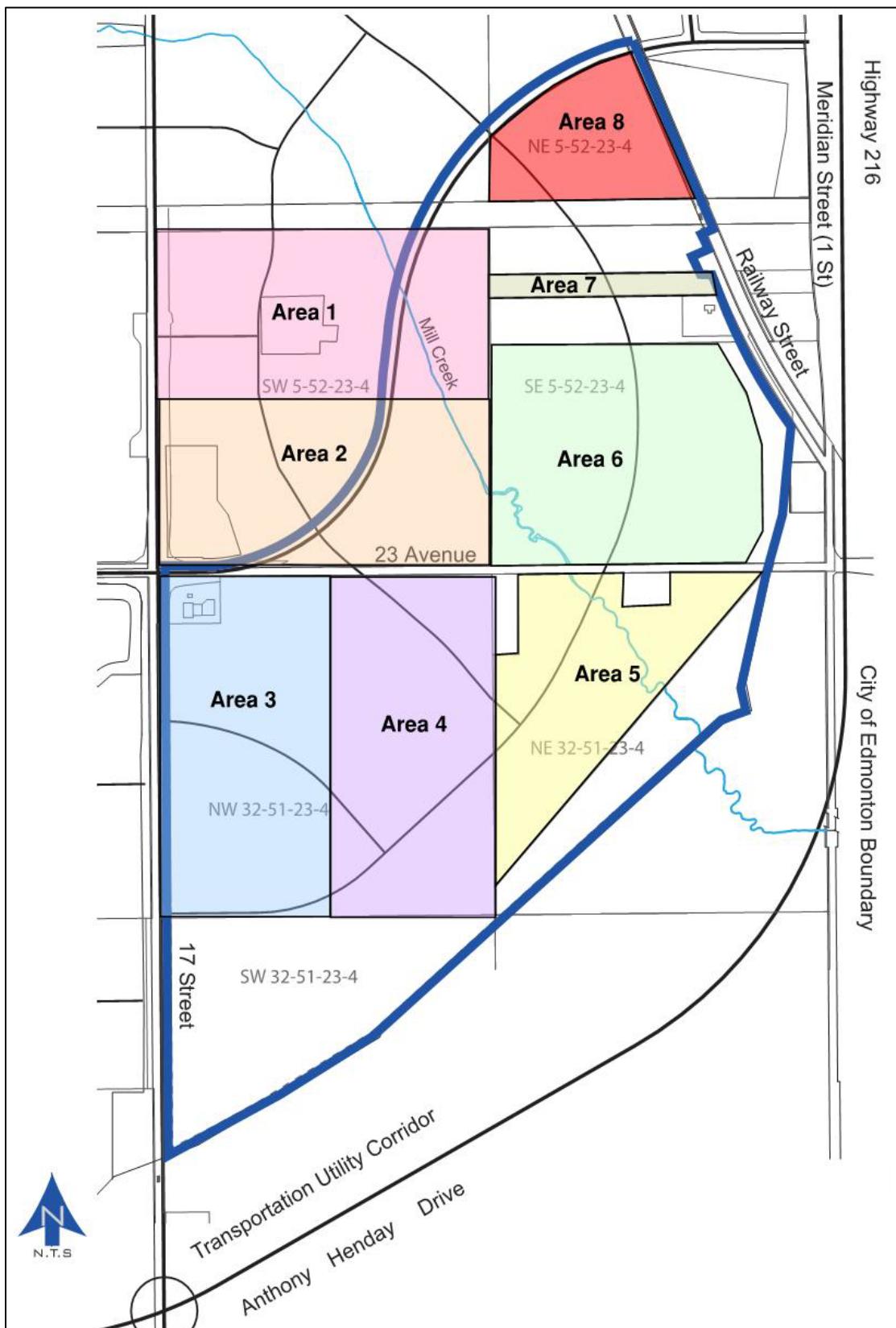
Many of the potential environmental concerns mentioned above are considered to be a low risk environmental impact, while others may be a moderate risk. The report was broken up into eight parts to encompass the number and size of properties included in Aster (**Figure 6 – Environmental Site Assessment Areas 1 – 8**, page 18): These moderate risk areas are:

- Areas 4 and 7 contain stored vehicles, and as discovered through site inspection, there were some fluid leaks. It is recommended that the areas be re-inspected upon vehicle removal to ensure the soils are not contaminated. Prior to rezoning, all MR parcels will be remediated by the land owner to ensure lands are suitable for their intended use.
- The northwest corner of area 3 (on the Church site), due to a former oil well as revealed by the Energy Resources Conservation Board (ERCB) coordinates.
- The lot adjacent to the northeast side of area 5, as it contains a cell tower and an operational trucking business. A few issues were noted, yet no information exists on soil sampling. This is a non-participating land holding and will require environmental assessment when the site is redeveloped.

**Figure 5 - Ecological Connectivity Plan**



**Figure 6 - Environmental Site Assessment Areas (1-8)**



### **3.1.8 Potential Hazards**

A Risk Assessment was carried out by Doug McCutcheon and Associates, Consulting (April 2013). This assessment focused on the existing rail line, truck traffic along Anthony Henday Drive, High Vapour Pressure (HVP) and ATCO gas pipelines. The key findings are as follows:

- The railway is used solely for industrial purposes, transporting a variety of commodities ranging from commercial goods, to construction materials, to hazardous commodities such as Liquefied Petroleum Gas (LPG), Sulphur Dioxide, Ammonia and Petroleum Condensate. Other non-hazardous substances in transport are consumer goods transported in container trains (seacans), molten sulphur, sheet metal, pipes, gravel, plastic pellets, lime, automobiles, and grain. The primary concern with this transporting is the possibility of derailment, train collisions, track failure, motor vehicle collisions at level crossings, and lack of securement of the goods carried in the train cars. The report reviewed specific consequences such as: explosions and fires, toxic releases, and Boiling Liquid Expanding Vapour Explosion (BLEVE).
- Truck traffic along Anthony Henday Drive carries dangerous goods, however the specific items are not known.
- The pipelines located in the southern boundary (323 mm/12 in HVP pipeline) and south and eastern boundary (33 mm/1.5 in high pressure natural gas pipelines). The HVP pipeline is more likely to have a large impact area due to its size and the high vapour pressure fluid.

To accomplish the risk assessment five scenarios were developed to represent the activities that could occur in the area. The study determined that the impact from each of the scenarios were at an “acceptable level of risk” which is acceptable in Canada (according to the Major Industrial Accidents Council of Canada). This means that the probability of risks were not higher than  $1.2 \times 10^{-8}$  for the CN railroad scenarios,  $4.6 \times 10^{-5}$  for the natural gas pipelines and  $7.1 \times 10^{-6}$  for the larger HVP pipelines.

The report identified two recommendations for the HVP pipeline: proper setbacks should be considered (minimum setback should be the edge of the right-of-way) and the area should be designated as an emergency planning zone in which the City of Edmonton emergency plan should be in place for the pipeline. Typically the pipeline operator will detect the leak and close isolation valves to limit the release over time.

Discussions were held with ATCO Gas with regards to the Co-op pipe. ATCO Gas indicated that the pipe would potentially be decommissioned when a new pipe is extended in the neighbourhood. This pipe is connected to a limited number of properties along 23 Avenue. ATCO gas indicated no objection to the proposed NSP.

In addition, discussions were held with Nova Chemicals and the City of Edmonton in relation to the HVP pipe. Through these discussions, a 7.5 m safety setback was identified by the City as consistent for rear yard and flanking side yard setbacks in residential zones. The setback required will be 7.5 m from the edge of the pipeline right-of-way.

In summary the outcome of the risk assessment completed for the Aster NSP clearly demonstrates there is no unacceptable risk imposed on the development. There are potentials for impacts as a result of rail traffic, truck traffic and pipelines which is normal for other parts of the City. The risk assessment meets the requirements of the City of Edmonton Bylaw 14127 January 11, 2006.

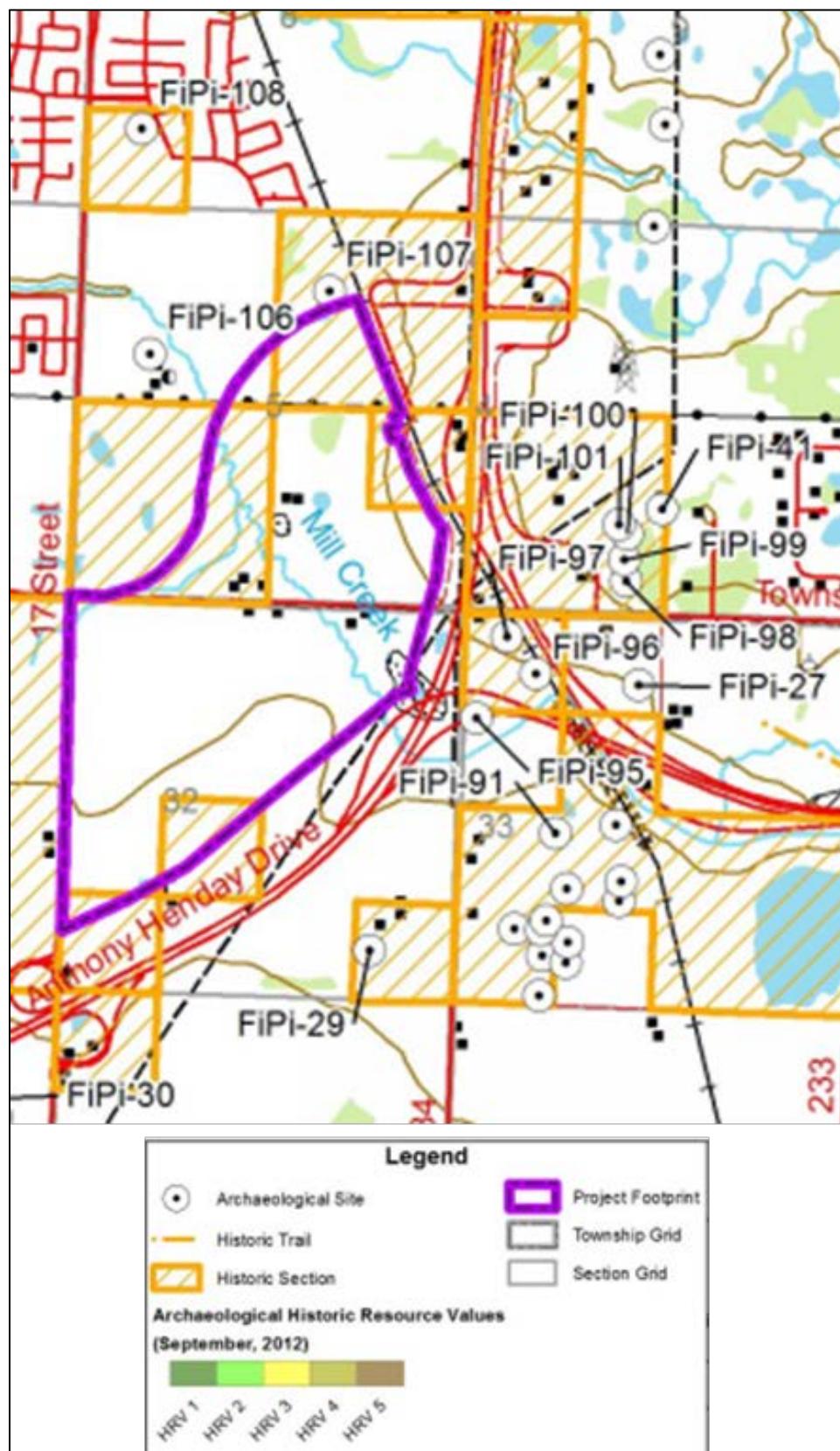
### **3.1.9 Historical Resources**

According to Alberta Culture's Statement of Justification that was filed, "there are historical structures located in LSD 4-32-51-23 W4M, LSD 6-32-51-23 W4M, NE 5-52-23 W4M, LSD 15-5-52-23 W4M, LSD 8-5-52-23 W4M and the SW 5-52-23 W4M that may be impacted by this project" (**Figure 7- Previously Recorded Sites and Historically Documents**, page 21). Conditional Clearance has been given, provided the structures on the previously mentioned lands are recorded as outlined below:

- Land Owners must comply with the requirements for recording historic structures as per Alberta Culture's guidelines entitled Requirements for Recording Historic Structures, revised February 2012.
- Historic structures must be recorded prior to any impact related to the construction of this project.
- Should a review of the submitted Heritage Survey form determine that the structure possesses significant heritage value, additional documentation may be required. If the structure is determined to be truly exceptional for its heritage value, salvage or preservation measures may be required.

A Historical Resources Impact Assessment (HRIA) was completed in September 2013 and addressed the conditional clearance outlined in the Statement of Justification. No structures within Aster have been recommended for Historical Resources Assessment (HRA) clearance in this report as they lack heritage potential.

Figure 7 - Previously Recorded Sites and Historical Documents Trails



### **3.1.10 Private Railway Corporation Right-of-Way**

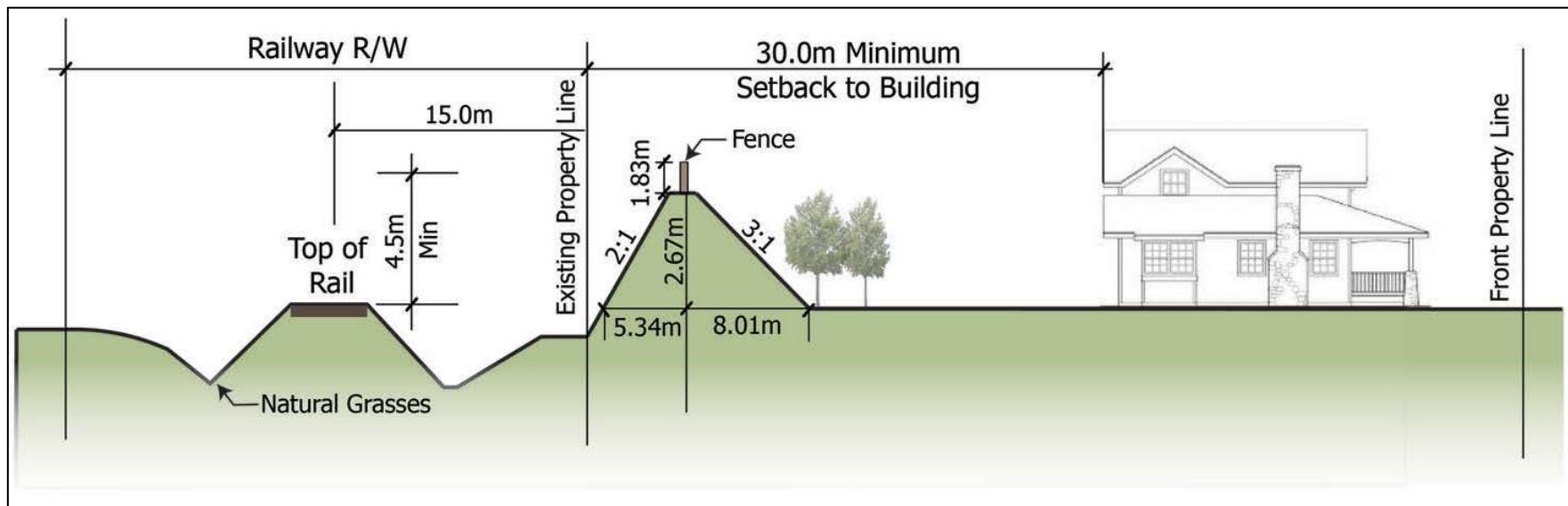
A private railway corporation operates a secondary line, which runs diagonally in a north-south orientation along the eastern boundary of the Plan area. There is one road crossing at grade planned for the realignment of 23 Avenue. A 30 m residential development setback from the railway right-of-way is needed in order to meet Transport Canada's guidelines. No building or structure will be built or encroach within the 30 m development setback. At the time of development, a berm and noise attenuation fence will be constructed by the developer on private property parallel to the railway right-of-way consistent with Transport Canada guidelines. An illustrative rendering is shown in **Figure 8 - Railway Right-of-Way Cross Section**, page 23, which shows the setbacks, berm height and spatial relationships that are required as part of the railway secondary line guidelines and that of Transport Canada.

### **3.1.11 Abandoned Well and Pipeline Site Features**

One abandoned well site exists outside the western site boundary in the 17 Street road right-of-way, west of the church site. The exact location of the abandoned well is latitude 53.453237 and longitude -113.368979 as shown in **Appendix 4: Abandoned Well and Pipeline Site Features** figure. Access and maintenance setbacks associated with the abandoned well site are within the 17 Street road right-of-way.

There are two pipelines within or outside the neighbourhood: one High Vapour Pressure pipeline outside the Plan area running north east near Anthony Henday Drive, and the second is a gas pipeline running east along 23 Avenue. The setbacks for the pipelines are included within the utility rights-of-way. The High Vapour Pressure pipeline maintains a minimum setback of 28 m from the property lines of the proposed residential lots in the area; no development is permitted within this 28m setback (see Detail 1 in **Appendix 4: Abandoned Well and Pipeline Site Features** identifies the locations of the two pipelines).

**Figure 8 - Railway Right-of-Way Cross Section**



## 3.2 Existing Land Use

### 3.2.1 Present Land Use

Pre-development land uses in Aster are comprised of predominantly agricultural lands (AG - Agricultural Zone) with a church (US - Urban Services Zone) on the southeast corner of 17 Street and 23 Avenue (**Figure 9 - Existing Land Uses & Rights-of-Way**, page 26). There are also several existing private homes and businesses throughout the area, most notably a greenhouse along 23 Avenue near Mill Creek and a garage along Railway Street.

One utility right-of-way (ROW) exists within the Plan area running east-west near the northern neighbourhood boundary (**Figure 9 - Existing Land Uses & Rights-of-Way**, page 26); the purpose of this right-of-way is to accommodate power transmission lines. In addition to the utility right-of-way, there are two pipeline rights-of-way: one High Vapour Pressure pipeline outside the Plan area running north east near Anthony Henday Drive (ROW Plan 782 0967), and the second is a gas pipeline running east along 23 Avenue (ROW Plan 471 KS). The pipelines within the ROW will be required to follow the Municipal Planning Commission Guidelines for the Integration of Transmission Pipelines with Urban Development when construction proceeds in their proximity.

### 3.2.2 Surrounding Land Uses

Farmland and rural subdivisions exist to the east and south beyond the Transportation Utility Corridor (TUC). The areas east of the TUC are part of Strathcona County, and will be subject to inter-municipal planning policies (Edmonton Municipal Development Plan, Section 8.2 & Map 21). Strathcona County has variously identified the Colchester area as a future growth node, and is currently in agricultural and country residential uses. Areas to the south of the TUC are part of the City of Edmonton, and are identified as future growth areas in “*The Way We Grow*”.

To the north, this NSP is bordered by the *Tamarack* and *Maple* Neighbourhoods (both part of the Meadows ASP). The Tamarack Neighbourhood Structure Plan identifies primarily low density, single-family residential development with some medium density, residential/commercial, and commercial development.

The area northwest, *Silver Berry* (part of the Meadows ASP) is fully developed. The majority of lands which interface with the northwest side of Aster are single-family residential, shopping centres, and urban services; there are also zones for urban reserve and public utility.

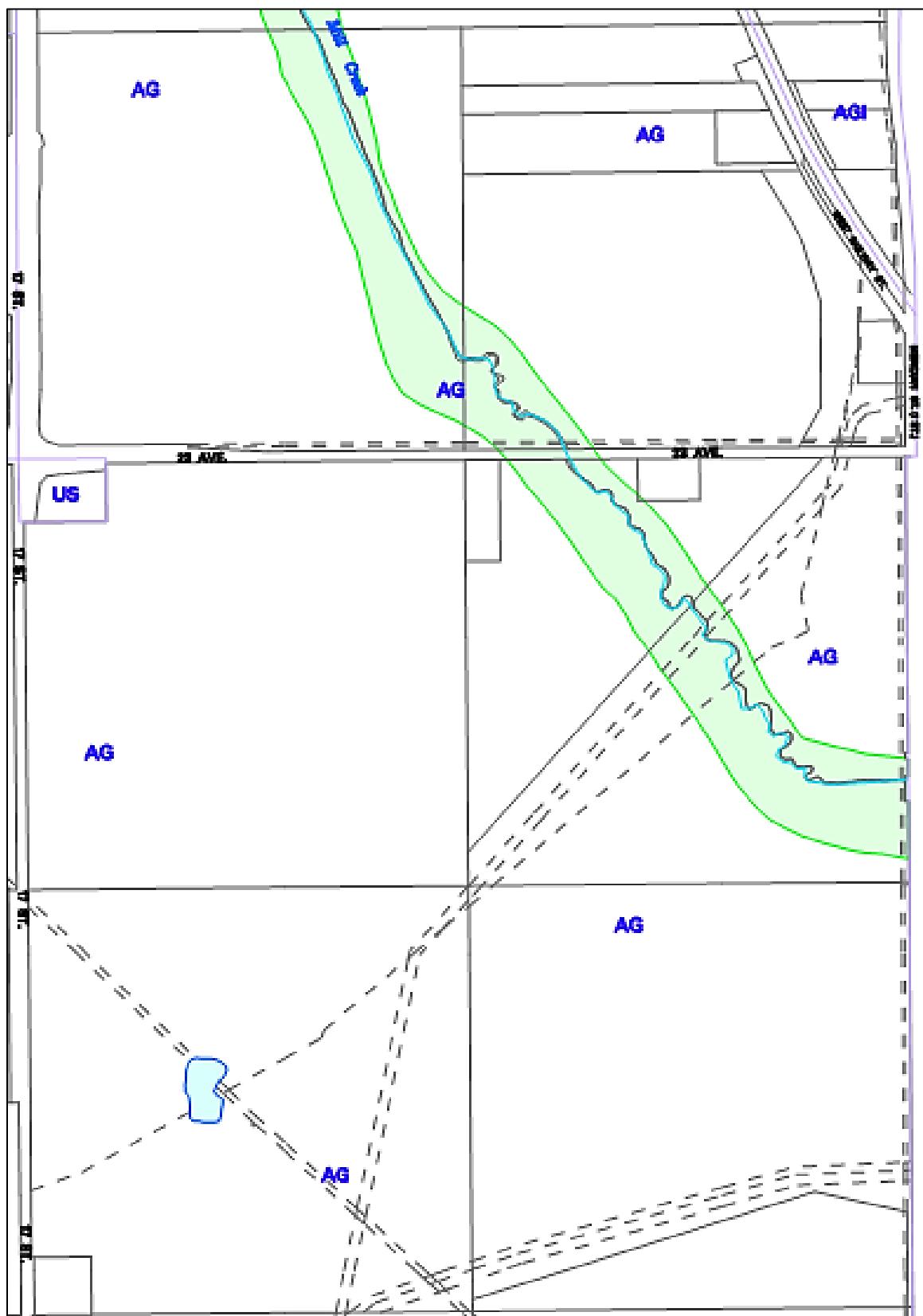
West of Aster is *Laurel* (part of the Meadows ASP). This area is currently under development and will be mainly low and medium density residential. *Laurel* will also feature two schools, four stormwater management facilities and multiple parks.

The proposed Plan is consistent with surrounding land uses, and will complement the future land use plans for the area by providing similar land uses, complete roadways, as well as extend servicing infrastructure.

### **3.2.3 Access**

Aster will be accessed by arterial roads on the east and north side: 17 Street and 23 Avenue, respectively. The only change to the current arterial road alignment will be 23 Avenue which is proposed to curve northwards towards Anthony Henday Drive. To the west, 17 Street will provide a major north-south connection to existing development within the Meadows ASP. Three collector roads will provide access for residents into the neighbourhood. Collector Road – 1 is crescent shaped and intersects 23 Avenue at two points; Collector Road – 2 connects from Collector Road - 1 to 17 Street; and Collector Road – 3 connects from Collector Road – 2 to 17 Street. The proposed collector network provides access through the neighbourhood, access to a central school and park site, and provides thorough transit coverage through the neighbourhood, with access to bus service within a 400 m walking distance.

**Figure 9 - Existing Land Uses & Rights-of-Way**



## **4.0 DEVELOPMENT GOALS, OBJECTIVES AND POLICIES**

### **4.1 Vision**

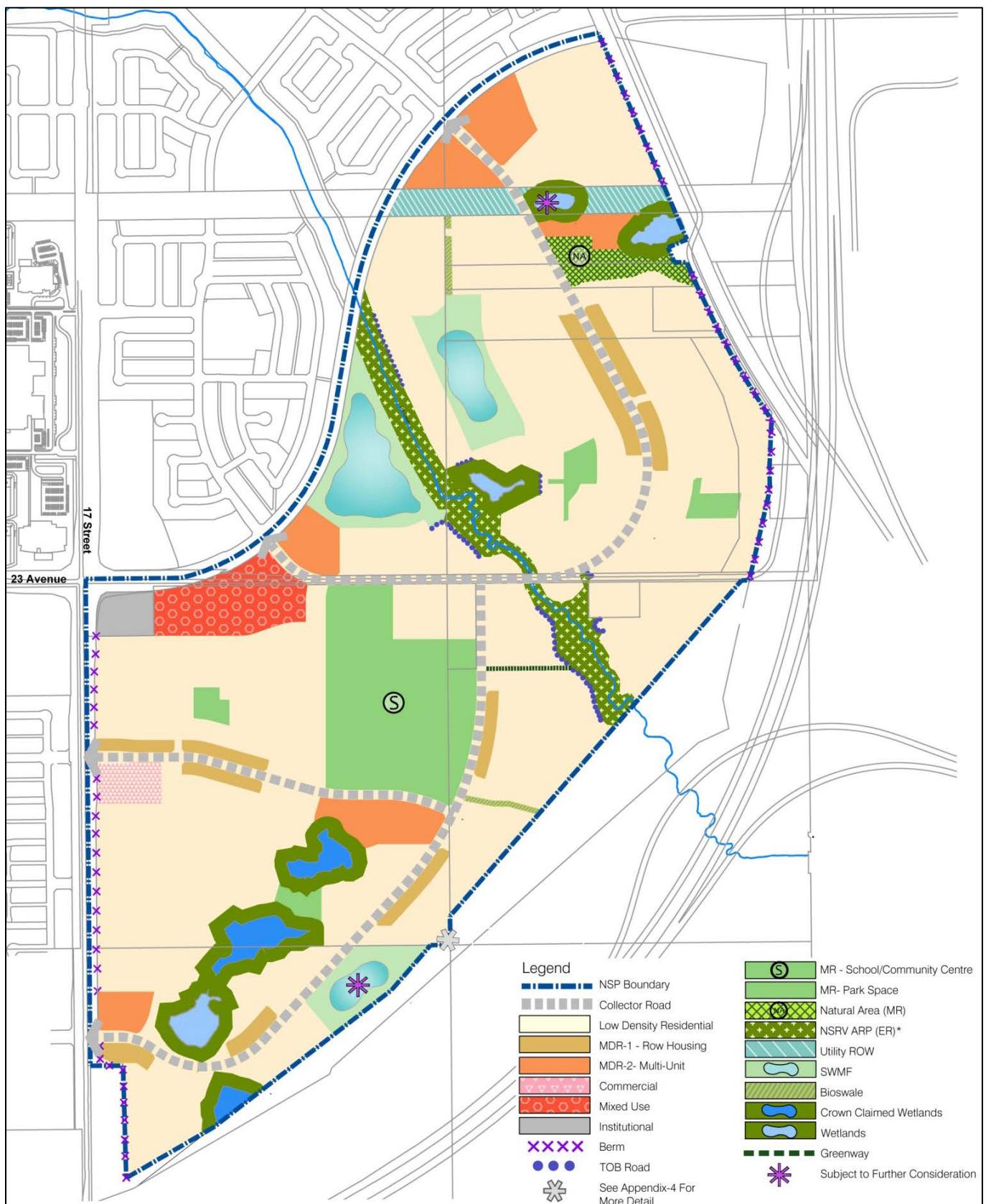
The vision for Aster is to create a predominantly residential community with a mix of supporting land uses to foster a family-oriented community that is well integrated with the high quality natural areas found in the Aster community. There will be a range of housing opportunities provided to create demographic diversity and affordability within the neighbourhood. A rich and interconnected network of natural areas provides a unique residential experience for southeast Edmonton. The development concept features a number of wetlands, pocket parks, bioswales, greenway, tree stands and connections to the Mill Creek Environmental Reserve. Residents, whether they are in single-detached, or multi-unit dwellings will be well connected to the natural and recreational features within the community as well as to commercial sites and transit services and will be linked to surrounding neighbourhoods by pedestrian trails. See **Figure 10 - Land Use Concept Plan**, page 28.

### **4.2 Goals**

Aster embraces the following key development objectives:

- 1. To promote a strong sense of community and place** by incorporating a higher emphasis on urban design and built form, as well as gateway features. The development concept features a variety of dwelling types a unique neighbourhood layout. The concept also features legible entrances to the community. Together the design and entry features are accentuated by framing the collector road entrances with land uses that help create a sense of arrival: commercial sites, multi-unit or row-housing sites, or mixed-use sites. Aster also features a centralized school park, and community league site, educational, institutional, and commercial facilities.
- 2. To connect its residents with the environment** by maintaining, enhancing and creating natural features such as Mill Creek, wetlands and natural water bodies, stormwater management facilities, parks and treed areas. Residents will have visual and pedestrian connections to these natural areas. Visual and physical connections to the natural areas, parks and stormwater ponds are provided by including pedestrian connections through medium density residential sites adjacent to these features.
- 3. To embrace a walkable, attractive and comfortable neighbourhood** by creating various shared use paths leading to the community league, natural features, educational, institutional, commercial locations, as well as to adjacent neighbourhoods. Shared use paths will connect residential development with parks and community facilities, with the commercial town centre and with nearby transportation.

**Figure 10 - Land Use Concept Plan**



## **4.3 Development Objectives**

### **Urban Design**

1. To design an integrated residential community that is pedestrian supportive, safe, and attractive by incorporating walkability features, and supporting multiple travel modes.
2. To provide natural areas, park spaces and stormwater management facilities that are accessible and aesthetically pleasing and supportive of ecological connectivity.
3. To encourage winter activities by ensuring the neighbourhood infrastructure and design elements are suited for every season by using the City of Edmonton's Winter City Design Guidelines.
4. To provide appropriate transitions between commercial and residential land uses by incorporating multi-unit housing next to commercial sites and arterial or collector roads.
5. To produce a pedestrian scale development that encourages walkability and safe streets.
6. To enhance the sense of community with place making features such as gathering places, views and landmarks.

### **Ecology**

7. Enhance Aster's ecological capacity and connectivity by incorporating high quality wetlands, bioswales and natural areas within the NSP development concept.
8. To preserve provincially claimed wetlands.
9. To incorporate constructed stormwater management facilities with naturalization techniques.
10. To support Edmonton's ecological network within the Aster NSP area.
11. To recognize Mill Creek, stormwater management facilities and environmental reserves as part of the natural area system.
12. To incorporate low impact development (LID) features using the Low Impact Development Best Management Practices Design Guide Edition 1.1.

### **Environmental**

13. To accommodate the active and passive recreational needs of the residents of Aster.
14. To maintain and preserve natural features where feasible or required such as wetlands, tree stands and the Mill Creek riparian areas.

## **Residential**

15. Incorporate a mix of dwelling types and forms to cater to a wide variety of consumers including singles, young families, multi-generational families, empty nesters, and seniors, while meeting mandated density targets.
16. To allow for flexibility in housing form based on area analysis and current market conditions provided there is appropriate integration within the neighbourhood staging plan.
17. To provide for adequate transition and compatibility between low and medium density housing by the incorporation of development guidelines to address such things as building setbacks, heights and landscaping requirements.
18. To encourage a variety of architectural housing styles to create an attractive neighbourhood.
19. Ensure public safety near oil and gas facilities through the use of appropriate risk mitigation measures.

## **Commercial**

20. To provide neighbourhood level commercial sites in the neighbourhood to meet the needs of the immediate residents.
21. To locate commercial areas in a manner that will best serve and connect the residents of Aster and adjacent neighbourhoods.
22. To provide the opportunity for mixed-use development in Aster.

## **Parkland, Recreation Facilities and Schools**

23. To provide a centrally located school and park site within the boundary of the neighbourhood, along with smaller local parks dispersed throughout the neighbourhood.
24. To provide direct physical access and visual connections to park and natural areas to encourage use of these spaces and provide natural surveillance.
25. To connect parkland, recreational facilities and school sites using shared use paths, sidewalks, and transit where possible.
26. To locate parkland, recreational facilities and schools sites in close proximity to multi-unit sites.
27. To promote passive and active recreation within parkland and school sites.
28. To enhance ecological connectivity within the neighbourhood.

## **Transportation**

29. To design multi-use streets utilizing the City of Edmonton's Complete Street Guidelines.
30. To provide a safe circulation system for pedestrians, bicycles, public transit and vehicles within the Plan area.
31. To provide safe and convenient access for pedestrians and cyclists to all amenities within the neighbourhood, including access to transit.
32. To provide connections to internal and external destinations.

## **Infrastructure and Servicing**

33. To integrate existing utility rights-of-way with natural features where possible.
34. To respect the existing topography where possible.
35. To provide a servicing system and phasing sequence based on the extension of City services and utilities which are both economical and efficient.

## 4.4 Policies and Implementation

### 4.4.1 Urban Design

The principles and policies established for urban design are intended to enhance the arrangement, function and appearance of urban space. In general they encompass streets, park spaces and stormwater management facilities, winter activities, transitions between land uses, pedestrian scale and place making.

Objective	NSP Policy	Implementation
1		
To design an integrated residential community that is pedestrian supportive, safe and attractive by incorporating walkability features, and supporting multiple travel modes.	(a) Streetscape design should consider symmetry, landscaping, walkability, and a variety of street widths to implement the City's Complete Streets Guidelines and Requirements and optimize snow storage and removal.  (b) Walkability considerations and CPTED principles shall be used to ensure pedestrian safety. All streets in Aster shall feature sidewalks to ensure walking routes provide pedestrian access through the neighbourhood.	(a) Street width shall be determined at the subdivision stage and shall support active travel modes.  (b) The design of streets including landscaping and sidewalks shall be implemented at the subdivision and detailed design stages of development. Streets shall be designed in general accordance with City design standards, including Complete Streets Guidelines and Requirements, to the satisfaction of City of Edmonton Transportation Services.
	(c) The Aster streets shall be illuminated using 'dark sky' compliant or equivalent lighting to minimize light spillover and to reduce impact on wildlife.	(c) Proposed lighting along the streets shall take into consideration 'dark-sky' approaches, wildlife concerns and the potential for light pollution and in accordance with the City of Edmonton Land Use Bylaw.
<b>Rationale</b>	<p>The design of residential streetscapes which considers aesthetics and safety shall provide a pedestrian environment which facilitates walking to transit service, school sites, commercial sites, natural areas and other neighbourhood destinations. Shared use paths shall support walking, and wheeled transportation such as cycling. Accommodating multiple travel modes shall provide options for residents, and allow sustainable lifestyles. Dark sky lighting shall minimize light spillover effects and reduce impacts on birds and wildlife, while ensuring safe night time travel for automobiles and pedestrians.</p>	
<b>MDP Policies</b>	<p>5.5.1 Ensure developing and planned neighbourhoods include well designed and connected streets, sidewalks, parks, buildings and other community facilities and gathering spaces.</p> <p>7.5.3.3 Integrate indigenous vegetation, specifically low-maintenance drought tolerant species, and where feasible include edible plant species into City and private landscaping.</p>	

Objective	NSP Policy	Implementation
2		
	(a) All required parks and natural areas should be implemented as identified in the NSP Development Concept.	(a) MR shall be identified at the rezoning stage, and dedication shall be provided at the subdivision stage.  Rezoning and/or subdivision applications in proximity to retained natural areas shall require a NAMP.
	(b) All parks and stormwater management facilities shall be accessible from every part of the neighbourhood through the use of shared use paths, sidewalks and roadways, and provide for active and passive recreation.	(b) The location and configuration of the stormwater management facilities and park spaces are conceptually illustrated in <b>Figure 10 - Land Use Concept Plan</b> , page 28 and may be refined with zoning and subdivision.  Ecological networks take maximum advantage of natural areas to provide shared use paths through and across the neighbourhood. These shared use paths connect to adjacent natural areas or corridors such as creeks, power line rights of way, pipeline rights of way, and wetlands.  Opportunities for additional connections to these areas will be explored at the time of rezoning and/or subdivision. Such connections include walkways, and Low Impact Development measures.
	(c) All parks and stormwater management facilities should include naturalized shoreline planting (such as native species) intended to provide habitat for wildlife and improve water quality.	(c) Landscaping should include the use of native species where feasible.
	(d) All stormwater management facilities shall be adequately landscaped and CPTED principles shall be used. Landscaping should include shared use paths, benches and other features to support passive recreation, where appropriate.	(d) Design of the stormwater management facilities shall consider the safety of residents, opportunities for passive recreation and development of pedestrian connections. The design will be confirmed at the detail design stage.  The location of the emergency access for the stormwater management facilities shall be determined at the subdivision approval stage.
<b>Rationale</b> The location, configuration and design of parks and stormwater management facilities have been deliberately selected to provide enhanced habitat and wildlife connectivity. Natural areas are connected to the neighbourhood pedestrian network in order to promote a walkable neighbourhood and higher quality of life. The parks and stormwater management facilities will be designed to serve as a destination for pedestrian and cyclists and to provide passive and active recreational opportunities. Natural areas that have been identified for preservation were selected on the basis of providing continuous network connections to maximize habitat opportunities compared to conventional development patterns.		

Objective	NSP Policy	Implementation
3		
To encourage winter activities by ensuring the neighbourhood infrastructure and design elements are suited for every season by using the City of Edmonton's Winter City Design Guidelines.	(a) The neighbourhood shall be designed to accommodate infrastructure programming requirements such as snow clearing and landscape maintenance.	(a) Detailed design of neighbourhood features and elements shall incorporate approaches from the Winter City Strategy.  Boulevards shall be used to accommodate snow removal and encompass a mix of vegetation for all season.
	(b) Shared use paths and parks shall be designed to accommodate year around activities, including winter sports such as walking, hiking, skiing, and snowshoeing.	(b) The central school and park site provides an opportunity for centralized sport activities in both a summer and winter context.  The location and design of outdoor spaces shall consider the incorporation of design elements that respond to all seasons, through measures as the creative use of light, colour, and ways to provide break from wind and extreme temperatures.
	(c) Low impact winter sports can be accommodated in the Aster neighbourhood on the many park sites, and around the various stormwater management facilities and along the banks of Mill Creek.	(c) The design of parks and landscaped buffers around stormwater management facilities should provide the opportunity for all-season outdoor physical fitness activities.
<b>Rationale</b>  Winter is a dominant season in Edmonton and paying close attention to winter design issues will help alleviate the negative attitudes towards the cold climate. Effective landscaping and wind control measures in parks and public spaces can invigorate public spaces on colder days. Planning public parks, and stormwater management facilities to facilitate passive winter and summer fitness options expands resident's access to fitness options in their community. Shared use paths and parks can provide space for self-directed winter sport such as cross-country skiing, snowshoeing, winter biking, and winter jogging, as well as more traditional fair-weather walking and wheeled sport opportunities.		
<b>MDP Policy</b>		
5.6.1.16 Design new public spaces, including private spaces accessible to the public, to consider requirements for snow clearing and drainage, opportunities for year round use and the protection of citizens from icy walking conditions and the dangers of falling ice and snow.		

Objective	NSP Policy	Implementation
4		
To provide appropriate transitions between commercial and residential land uses by incorporating multi-unit housing next to commercial sites and arterial or collector roads.	Multi-family housing should be located next to commercial sites and located on collector or arterials roads to minimize travel distance to shopping and support the viability of transit service. Multi-family housing provides a transition from commercial uses on arterials to lower density residential uses on local roads.	<b>Figure 10 - Land Use Concept Plan</b> , page 28 establishes the conceptual location of the commercial and multi-unit sites. The precise location of multi-unit and commercial sites will be determined at the rezoning and subdivision stage.
<b>Rationale</b>		
In a predominantly residential neighbourhood it is important to create a smooth transition between commercial and residential land uses. Locating multi-unit housing near the commercial sites places higher residential density in close proximity to neighbourhood commercial services. Locating multi-unit housing on arterial and collector roads ensures short walking distance to transit services, located on arterial and collector routes. These placement considerations can provide housing options that are not reliant on automobiles, thereby providing walkable housing alternatives, options that often appeal to younger adults, seniors, and persons not interested in driving.		
<b>MDP Policy</b>		
6.2.1.3 Design commercial centres based on a main streets concept to better accommodate pedestrians.		

Objective	NSP Policy	Implementation
5		
To produce a pedestrian scale development that encourages walkability and safe streets.	(a) Buildings should be developed to a pedestrian scale to ensure natural surveillance and visibility of the community.  (b) Streets and shared use paths shall have appropriate lighting which meets CPTED principles.  (c) A network of shared use paths and sidewalks shall ensure a highly walkable neighbourhood.	(a) The Building setbacks, heights and orientation to streets will be determined during rezoning, subdivision and development permit stages of the development.  (b) Street lighting and CPTED requirements will be determined at the subdivision and detailed design stages.  (c) Continuous sidewalks and access points will be incorporated at the detail design stage of the development.  Landscaping will be determined by the developer and the City Administration at the time of landscaping plan review – in conjunction with engineering drawing review.
<b>Rationale</b>		
When buildings are oriented towards public streets it creates a safer pedestrian environment because there are more "eyes on the street". Incorporating appropriate lighting also aids in the development of safer streets. CPTED design principles can eliminate opportunities for blind-spots and hiding spots, this will contribute to community security by eliminating problems before they can occur.		

Objective	NSP Policy	Implementation
6		
To enhance the sense of community with place making features such as gathering places, views and landmarks.	(a) The development concept for Aster shall feature legible, identifiable entrances to the community.	(a) Entrances are accentuated by framing the collector road through land uses, built form, massing, and architectural features that help create a sense of arrival: commercial sites, multi-unit or row-housing sites, or mixed-use sites. Aster also features a centralized school park, and community league site, educational, institutional, and commercial facilities. The place making features will be determined during the design and subdivision stages of development.
	(b) Development should consider the inclusion of community and neighbourhood entrances, unique views and landmarks within Aster.	(b) Details regarding the provision of architectural elements and landmark (place making) features shall be determined at detailed design stage of development.
	(c) Development in Aster should ensure uniformity and transition in architectural styles and expression.	(c) The developer shall ensure the complementary design by implementing specific architectural controls in the development of the neighbourhood.
<b>Rationale</b>		Entrances, views and landmarks help create community destinations within the neighbourhood. Through careful design and site planning, these place making features can promote a sense of place for all residents. Proposed views and landmarks within the conceptual design of the neighbourhood include the community league, school sites, stormwater management facilities, and Mill Creek. Commercial sites and multi-unit sites are located at community entrances, and as such the architecture and design should be of a high quality to set a strong sense of place and provide a legible and memorable landscape.

## 4.4.2 Ecology

Ecological principles and policies will serve to preserve, conserve, and mitigate the loss of ecological resources in the Aster area (where necessary). Maintaining interconnected natural area corridors, such as the Mill Creek riparian areas and the connected wetlands in the southeast portion of the Plan area, is a conservation strategy to enhance species movement across the Aster landscape. For example, habitat patches, such as pocket parks and bioswales, located between connected or linear natural features, may be viewed as “stepping stones” for movement for some species, particularly birds. The development concept has strived to provide habitat connectivity to Mill Creek, stormwater management facilities, wetlands and natural areas. This section of the NSP will cover principles and policies for the natural area, wetlands, the ecological network, open space and low impact development (LID).

Objective	NSP Policy	Implementation
7		
Enhance Aster's ecological capacity and connectivity by incorporating high quality wetlands, bioswales and natural areas within the NSP development concept.	(a) The wetlands and natural features illustrated in <b>Figure 10 - Land Use Concept Plan</b> , page 28 shall be conserved.	(a) Lands that meet the criteria for Environmental Reserve (ER) under section 664(1) of the Municipal Government Act shall be dedicated to the City of Edmonton at the time of subdivision.
	(b) Public access shall be provided to the natural areas, where required, and where appropriate.	(b) The top of bank shared use path shall be provided along the entire length of Mill Creek.
	(c) The Crown Claimed wetlands illustrated in <b>Figure 10 - Land Use Concept Plan</b> , page 28 shall be protected.	(c) Three (3) Crown Claimed wetlands in the southern portion of the Plan provide an excellent environmental basis for wildlife, and numerous bioswales connect greens spaces, parks and Mill Creek to one another. The applicable environmental regulations of the City and Province shall be followed.
	(d) Mill Creek, although a part of the North Saskatchewan River Valley ARP bisects the middle of the Plan area and is a major habitat and wildlife corridor. Where feasible, a number of natural and constructed green spaces, green infrastructure, and bioswale corridors shall be maintained or enhanced to ensure a high level of biological and wild life connectivity.	(d) Development shall comply with the policies and directives under the North Saskatchewan River Valley ARP and Top-of-Bank Policy C542.  City of Edmonton Natural Areas Systems Policy C531 will be followed.

Objective	NSP Policy	Implementation
	(e) Enhanced planting of native species at stormwater facilities shall be provided to assist with the integration of these features into the ecological network and will assist with improving water quality.	(e) Design of the stormwater management facilities shall utilize native species. The design will be confirmed at the detail design stage, and be to the satisfaction of Parks + Biodiversity.
	(f) The Urban Development Line (UDL) will separate developable from non-developable area to preserve and protect Mill Creek and ensure development is safe from environmental hazard any potential slope risk factors.  Lands below the UDL shall be protected from development to ensure habitat integrity and protect Mill Creek and the North Saskatchewan River.	(f) A Geotechnical report and Slope Stability analysis have been submitted for the Plan area establishing the UDL.  A shared use path shall be provided along the entire length of the Mill Creek, within the top of bank setback – as shown in the <b>Figure 12 - Walkway/Bicycle Network Plan</b> , page 69.
	(g) Rezoning and/or subdivision applications in proximity to retained natural areas will require a NAMP.	(g) A Natural Areas Management Plan (NAMP) will be completed and approved by the City of Edmonton at the rezoning and/or subdivision stage, prior to the rezoning of lands within 250 m of the natural areas. The NAMP will describe the maintenance regime for the natural areas in Aster.
<b>Rationale</b>		
<p>The natural area defined by Mill Creek is the neighbourhood's largest and most significant ecological feature and shall be enhanced and made accessible to all residents. The City's Development Setbacks from River Valley/Ravine Crest (Top of Bank Policy C542) ensures public access to the North Saskatchewan river valley and ravine system. Policy C542 also ensures access is maintained through the development process and establishes the plan boundary between the upland developable area from the North Saskatchewan River Valley ARP environmental reserve.</p>		
<p>The variety of wetlands, stormwater management facilities, greenways, ravine, and bioswales identified for retention in Aster are intended to ensure these spaces connect to each other creating an interconnected network, suitable for a broad range of amphibian, avian and terrestrial wildlife. Providing the interconnectivity described in the Aster development concept assists the City in maintaining biodiversity and wildlife communities in the post-development state, as described in City Policy C531 Natural Areas Systems and the Phase II ENR.</p>		
<b>MDP Policy</b>		
<p>5.6.1.7 Identify and preserve public views and vistas of the North Saskatchewan River Valley and Ravine System as new development occurs and require public access in accordance with the Top of Bank Policy (C542).</p>		
<p>7.3.3 Mitigate the impact of development upon the natural functions and character of the North Saskatchewan River Valley and Ravine System.</p>		
<p>7.3.3.2 Maintain adequate separation between new urban developments and the North Saskatchewan River Valley and Ravine System through the City's Top of Bank Policy, with viewscapes and public access to the River Valley preserved.</p>		
<p>7.4.1 Utilize parks and open spaces to complement and enhance biodiversity, linkages, habitat and the overall health of Edmonton's ecological network.</p>		
<b>City Policy</b>		
<p>Development Setbacks from River Valley/Ravine Crest C542 and Natural Areas Systems C531.</p>		

Objective	NSP Policy	Implementation
8		
To preserve provincially claimed wetlands.	(a) Provincially claimed wetlands shall be protected from development and incorporate appropriate buffers around wetlands.	(a) There will be a buffer around all Crown Claimed and ER wetlands. The buffers will be secured at the zoning and subdivision stage.
	(b) Establish the bed and shore area around wetlands through a detailed survey.	(b) A detailed survey will be completed to establish the bed and shore of each wetland at the rezoning and/or subdivision stage.
	(c) Protect Crown claimed wetlands that are identified in the neighbourhood design.	(c) The three Crown claimed wetlands plus one non-crown claimed wetland form a cluster of wetlands in the SW portion of the Plan area, and are integrated with the Aster development concept.  A Natural Area Management Plan (NAMP) shall be completed for the crown claimed wetlands and approved by the City of Edmonton at the rezoning stage. This NAMP will detail an approach to maintaining pre-development storm flows into the wetlands.
<b>Rationale</b>		
The retention of Crown Claimed wetlands is of ecological importance, and represents a core portion of the ecological network being retained. Pre-development storm flows are critical to maintain the wetland habitats, and the retention of the wetlands adds to diversity and vitality of the environment per City Policy C531 – Natural Areas, Way We Green, and subject to Water Act Regulations.		
<b>MDP Policy</b>		
7.2.1 Protect, manage and integrate natural wetlands into new and existing developments as key assets in Edmonton's ecological network.		
7.4.1 Utilize parks and open spaces to complement and enhance biodiversity, linkages, habitat and the overall health of Edmonton's ecological network.		

Objective	NSP Policy	Implementation
9		
Incorporate stormwater management facilities with naturalization techniques.	(a) All stormwater management facilities should be designed and landscaped to enhance the ecological integrity of the neighbourhood.	(a) <b>Figure 10 - Land Use Concept Plan</b> , page 28 establishes the conceptual location of the stormwater management facilities. The design and landscaping of these shall be determined at the design and development stages.
	(b) Planting of native species at stormwater facilities will assist with the integration of these facilities into the ecological network and improve water quality.  Planting of native species shall be investigated, where feasible, and complimentary with stormwater management objectives, to support the creation of naturalized habitats in conjunction with stormwater management functions.	(b) Design of the stormwater management facilities should consider native species. The design will be confirmed at the detailed design stage.
	(c) Where feasible, live soils shall be retained for use in naturalized stormwater management facilities, in order to facilitate an enhanced ecological condition supportive of biodiversity.	(c) Landscape plans shall be required to illustrate planting approaches, species, and shared use path locations and design details.
	(d) Compensation for the loss of Wetland 42 shall be provided. Opportunities for this compensation to be provided within the Aster NSP area will be explored.	(d) Opportunities to provide this compensation within the plan area will be explored with cooperation between all involved parties.
<b>Rationale</b>  The Aster area featured a number of high quality water bodies in its pre-development state. Due to a range of soil conditions and development considerations not all of the water bodies could be retained. By incorporating additional stormwater management facilities and integrating live soils and native plants into them, the overall ecological integrity will be enhanced beyond that which would be present in a non-enhanced stormwater facility.		

Objective	NSP Policy	Implementation
10		
To support Edmonton's ecological network within the Aster Plan area.	<p>(a) Mill Creek shall be designed to integrate and connect Aster's environmental uses to provide habitat and encourage ecological connectivity.</p> <p>The Crown Claimed Wetlands in the south portion of the Plan areas provide important bird habitat that is linked to additional wetlands in the TUC.</p> <p>Connectivity across the entire Plan area is achieved by clustering wetlands with natural areas, parks and providing bioswale linkages between these clusters.</p>	<p>(a) The Ecological Connectivity Concept illustrates the ecological connectivity of the NSP. A Wetland Assessment has been submitted for the entire NSP area. Any disruption to the existing water bodies will need to be approved under the Water Act. Discussion with a consultant or Qualified Wetland Aquatic Environment Specialist (QWAES) and City must occur prior to the subdivision and rezoning stage.</p>
	(b) Developments within Aster shall integrate and link land use components (i.e. Mill Creek, stormwater management facilities, wetlands, bioswales, and utility and pipeline rights-of-way) to provide habitat and encourage connectivity.	<p>(b) Wildlife passages will be considered in accordance with the Wildlife Passage Guidelines and specific structure types are detailed in the ENR (section 8.2 Habitat Connectivity and Wildlife Passage). <b>Figure 11 - Road Network Plan</b>, page 68 shows potential wildlife passage locations.</p>
	(c) Low Impact Development measures shall be used where feasible to provide connectivity between MR, ER, SWMFs, and other open spaces and natural areas.	<p>(c) Low Impact Development measures which provide connectivity, such as bioswales, greenways, and walkways shall be considered during rezoning and/or subdivision, for the locations shown generally on <b>Figure 5 - Ecological Connectivity Plan</b>.</p>
<b>Rationale</b>		
Edmonton has a very large ecological network and it is important that the Aster NSP support this. Mill Creek is tributary to the North Saskatchewan River and a key feature within the ecological network of the Aster neighbourhood. Retaining the undisturbed portions of Mill Creek, and re-meandering the disturbed portions of Mill Creek will help retain and restore its pre-development habitat functions, as well as provide a unique central greenway across the Aster neighbourhood.		
<b>MDP Policy</b>		
7.1.1.1 Support the implementation of the City of Edmonton's Natural Connections Strategic Plan.		
7.1.1.2 Acquire and manage the most ecologically sensitive areas in Edmonton.		
7.1.1.4 Determine appropriate buffer areas around the periphery of natural areas identified for protection.		
7.1.1.5 Acquire critical natural linkages and buffer zones to ensure natural areas of ecological value remain sustainable within an urban context.		
7.1.1.7 Public projects, new neighbourhoods and developments will protect and integrate ecological networks, as identified in the Natural Connections Strategic Plan, by adopting an ecological network approach to land use planning and design.		
7.4.1 Utilize parks and open spaces to complement and enhance biodiversity, linkages, habitat and the overall health of Edmonton's ecological network.		

Objective	NSP Policy	Implementation
11		
<p>To recognize Mill Creek, stormwater management facilities, and environmental reserves as part of the natural area system.</p>	<p>All stormwater management facilities and Environmental Reserves (ER) shall be natural area sites.</p> <p>A shared use path shall be provided around a minimum of 50% of each storm water management facility.</p>	<p>The Land Use Concept outlines the conceptual locations of all stormwater management facilities and ERs. The specific design and connection of these will be established at the subdivision stage.</p>

**Rationale**

Mill Creek is one of the main focal points of the neighbourhood and also provides the largest natural areas in combination with the stormwater management facilities, bioswales, and environmental reserves. **Figure 10 - Land Use Concept Plan** (page 28) illustrates the natural areas that will be retained within the NSP, as directed by City policy and the MGA. Exceptions to this requirement must be approved by the Urban Ecology Unit. Water body buffers will be based on the guidelines provided in City of Edmonton Policy C531 regarding Environmental Reserve dedication. Upland buffers are set to 10 m unless otherwise indicated as per the Phase II ENR. Details on conservation and specific setbacks are provided in the ENR.

**MDP Policy**

7.3.1 Protect, preserve and enhance the North Saskatchewan River Valley and Ravine System as Edmonton's greatest natural asset.

7.3.2 Protect, preserve, promote and improve the North Saskatchewan River Valley and Ravine System as an accessible year round place for recreation and activity for people of all ages.

7.3.2.1 Ensure that the North Saskatchewan River Valley and Ravine System remains primarily an area of unstructured, low intensity and passive recreation, while accommodating appropriate balance of recreation activity within park nodes as described in the Urban Parks Management Plan and the Ribbon of Green.

7.3.2.2 Ensure that the North Saskatchewan River Valley and Ravine System remains integrated and connected with other natural areas across the city.

7.3.2.3 Ensure that the lands within the North Saskatchewan River Valley and Ravine System Area Redevelopment Plan boundary will be acquired for parks purposes and natural areas protection.

7.3.2.4 Make selected areas of the North Saskatchewan River Valley and Ravine System accessible to all citizens regardless of age or mobility, where feasible.

7.3.2.5 Provide pedestrian and bicycle connections to increase movement and accessibility.

7.3.2.6 Provide and maintain space for multi-seasonal uses.

Objective	NSP Policy	Implementation
12		
To incorporate low impact development (LID) features using the Low Impact Development Best Management Practices Design Guide Edition 1.1 .	LID features such as bioswales, absorbent landscaping, and rain gardens should be considered when developing the neighbourhood.	<p>Figure 10 - Land Use Concept Plan, page 28 outlines the conceptual locations for bioswales. Sufficient technical detail will need to be provided on proposed LID at zoning and subdivision to the satisfaction of Drainage Services.</p> <p>Detailed landscaping will be determined at the detail design stage.</p>

**Rationale**

Due to the significant growth in Edmonton and the existing water cycle in Aster, it is important to incorporate LID features into the Plan to ensure the local hydrology and ecology is preserved. Such features to consider are bioswales, floating islands (in stormwater management facilities), rain gardens, permeable pavement, naturalized drainage ways and rainwater harvesting.

**MDP Policy**

5.5.1.2 Incorporate sustainable neighbourhood design principles, low impact development and ecological design approaches when planning and building new neighbourhoods.

7.1.2.1 Work in cooperation with developers, land owners and conservation organizations to encourage the reintegration of native and / or semi-native vegetation into Edmonton's ecological network.

### 4.4.3 Environment

Environmental principles and policies have been established for the Aster NSP to ensure future development within the neighbourhood encompasses parkland, recreational spaces and natural features. These spaces will help sponsor a healthy living environment for the residents and surrounding communities.

Objective	NSP Policy	Implementation
13		
To accommodate the active and passive recreational needs of the residents of Aster.	(a) All pedestrian linkages and open space shall be aesthetically pleasing and easily accessible through a combination of pedestrian linkages and road frontage to minimum City standard.  (b) Adequate road frontage shall be required to ensure visibility and public access to storm facilities and pocket parks.	(a) Landscaping and design of the linkages and open space shall be determined at the design and development stages to the satisfaction of Parks + Biodiversity.  (b) A minimum of 30% road frontage will be provided for storm facilities. Road frontage will be provided for all neighbourhood parks to meet the minimum standards as outlined in the Urban Parks Management Plan or successor plan.
<b>Rationale</b>		
Active and passive recreation promotes a healthy lifestyle and also connects residents within the community to their surrounding environment.		
<b>MDP Policy</b>		
7.3.2 Protect, preserve, promote and improve the North Saskatchewan River Valley and Ravine System as an accessible year-round place for recreation and activity for people of all ages.		

Objective	NSP Policy	Implementation
14		
To maintain and preserve natural features where feasible, such as wetlands, tree stands, and the Mill Creek riparian area.	Natural features illustrated in <b>Figure 10 - Land Use Concept Plan</b> , page 28 shall be maintained and preserved.	The identified natural features have been maintained and preserved through environmental reserve. The areas will serve as passive and active recreational opportunities for the community.
<b>Rationale</b>		
As identified in the Phase II ENR, there are existing natural features in the neighbourhood. It is important to maintain and preserve these features wherever possible.		
<b>MDP Policy</b>		
7.1.1 Protect, preserve and enhance a system of conserved natural areas within a functioning and interconnected ecological network.  7.3.2 Protect, preserve, promote and improve the North Saskatchewan River Valley and Ravine System as an accessible year round place for recreation and activity for people of all ages.  7.5.1.3 Use environmental reserve to protect water bodies that meet the definition of environmental reserve but are not claimed by the Province.		

#### 4.4.4 Residential

The Aster NSP provides a residential development concept that is in alignment with the density targets of the Capital Region Growth Plan. The development concept further identifies a number of dwelling types throughout the neighbourhood. To ensure the success in these developments, a number of principles and policies have been assigned. These principles and policies will cover the different types of dwelling units, the creation of sub-neighbourhoods that promote flexible development, development guidelines and architectural style. Low density residential may be developed in areas using conventional or Direct Control (DC1) zones. The zones may be used to provide for either shallow lot single detached housing or to allow intensive forms of row housing.

Objective	NSP Policy	Implementation
15		
Incorporate a mix of dwelling types to cater to a wide variety of consumers including singles, young families, multi-generational families, empty nesters, and seniors, while meeting density targets.	(a) A mix of low/medium density residential types shall be provided, in the form of row housing and single/semi-detached dwellings, allowing choice and a range of affordability options.  (b) The Aster NSP shall meet or exceed the density targets (30-45 dwelling units per net residential hectare) of the Capital Region Growth Plan in force at the time of NSP preparation.  (c) Along collector roads not more than 30% of the frontage shall include driveway access to the collector road.	(a) <b>Figure 10 - Land Use Concept Plan</b> , page 28 generally demonstrates the locations of the residential designations. The City of Edmonton Zoning Bylaw (12800) provides a range of densities and housing forms that will be applied at the rezoning stage.  (b) The Aster NSP density is approximately 33.3 units per net residential hectare.  (c) At the rezoning and subdivision stages, the percentage of lots fronting the collector road shall be no more than 30%.

#### Rationale

Providing a variety of housing options encourages the creation of a diverse neighbourhood which accommodates a range of income groups, family types, and market segments. Aster is located in the CRB Priority Growth Area 'B' which has a density target of 30-45 dwelling units per net residential hectare. Achieving the density targets of the CRB Growth Plan will ensure a sustainable approach to residential development, as densities support transit and provide a user-base for City services. Higher residential densities may eventually be achieved as non-participating land holdings are redeveloped.

#### MDP Policies

4.4.1 Ensure neighbourhoods have a range of housing choice to meet the needs of all demographic and income groups and create more socially sustainable communities.

4.4.1.1 Provide a broad and varied housing choice, incorporating housing for various demographic and income groups in all neighbourhoods.

8.1.7 Plan for growth that meets or exceeds the Capital Region Plan's density targets in conjunction with an integrated transit and land use approach.

Objective	NSP Policy	Implementation
16		
To allow for flexibility in housing form based on area analysis and current market conditions provided there is appropriate integration within the neighbourhood staging plan.	(a) The staging of development may change based on an area analysis and current market conditions.	(a) <b>Figure 16 - Staging Plan</b> , page 88, outlines the proposed staging sequence for Aster. Changes to this plan may occur at the design stage prior to submission of rezoning and subdivision applications.
	(b) DC1 or new conventional zones may be used to allow for a unique single-detached housing form that is of a shallow and wide orientation.	(b) DC1 or new conventional zones may be used at the rezoning stage to provide for shallow and wide single-detached housing forms.
	(c) DC1 or new conventional zones may be used to allow for more intensive forms of row housing.	(c) DC1 or new conventional zones may be used at the zoning stage to provide for an intensive form of row housing that maximizes the opportunity for additional density in a traditional residential setting.
<b>Rationale</b>		
<p>With a market that is subject to change, it is important for development in the neighbourhood to be flexible and adaptable. There are opportunities for Direct Control zones or new conventional zones to be created for the Aster neighbourhood. The first option would be for single detached housing and the second for row housing. The potential DC1 or new conventional zones for single detached housing forms may feature a varied streetscape, provide for a range of housing affordability, and allow a fine grained mix of housing dimensions which contributes architectural variety to the overall character of the neighbourhood.</p> <p>The potential DC1 or new conventional zones for row housing districts provide an opportunity to maximize the density in a traditional residential setting, makes efficient use of infrastructure, provides density supportive of transit, and offers a diversity of housing forms to support affordability.</p>		

Objective	NSP Policy	Implementation
17		
To provide for adequate transition between low and medium density housing by the incorporation of development guidelines to address changes in building and site design as building setback, height and landscaping requirements.	The development shall provide an appropriate land use and built form transition between low and medium density housing which shall be established through the preparation of development guidelines.	These development guidelines shall be set at the rezoning stage to ensure setbacks, height and landscaping requirements are met.
<b>Rationale</b>		
Design guidelines will help establish a smooth transition between residential land uses. Key design requirements to consider are setbacks, heights and landscaping.		

Objective	NSP Policy	Implementation
18		
To encourage a variety of architectural housing styles to create an attractive neighbourhood.	Residential development should adopt different architectural styles to create a unique and attractive neighbourhood.	The architectural style of housing will be determined at the rezoning and subdivision stages of development. Additional architectural details, setbacks, and articulation, may be described in DC1 or new conventional zones to ensure a varied streetscape, provide for a range of housing styles and affordability, and allow a fine grained mix of housing dimensions which adds to the overall character of the neighbourhood. Restrictive covenants for architectural controls may also be used.
<b>Rationale</b>  In order to create an attractive and unique neighbourhood it is important for homebuilders to incorporate a complementary mix of architectural styles within different stages of Aster.		

Objective	NSP Policy	Implementation
19		
Ensure public safety near oil and gas facilities through the use of appropriate risk mitigation measures.	New development shall ensure public safety near oil and gas facilities, including high-pressure pipelines, through the use of appropriate Provincial and Municipal risk mitigation measures.	The method of risk mitigation may include, but is not limited to: sensible land use allocation around risk sources, provision of appropriate setback distances, and the use of appropriate zoning.
<b>Rationale</b>  Policies relating to existing and abandoned oil and gas uses will ensure conscientious development around oil and gas well sites and pipelines at all stages of the plan implementation and construction process while minimizing potential disturbances to the area's future residents and visitors. Urban development in the vicinity of all resource well sites will be planned in accordance with the Alberta Energy Regulator (AER), City of Edmonton Policy C515 – Oil and Gas Facilities, Abandoned Well Sites, Policy Guidelines for the Integration of Resource Operations and Urban Development" (1985), and the Subdivision and Development Regulation.		

#### **4.4.5 Commercial**

Commercial principles and policies will help guide the development of commercial and mixed-use land uses and ensure the needs of the community will be met with the development of these lands. These will encompass neighbourhood commercial development, connectivity between commercial lands and residents, and promoting mixed-use development. The commercial uses in the area are intended to service the local population and promote walkability.

Objective	NSP Policy	Implementation
20		
To provide neighbourhood level commercial sites in the neighbourhood to meet the needs of the immediate residents.	Neighbourhood level commercial sites shall be provided to serve the needs of residents located within the immediate neighbourhood.	The specific location of neighbourhood level commercial sites will be determined at the rezoning stage, and general locations are shown on the Land Use Concept.
<b>Rationale</b>		
Providing commercial sites within the neighbourhood promotes a more complete neighbourhood in which residents can access all necessary amenities, in turn reducing their individual ecological footprint by walking to nearby commercial sites, or taking short trips to these destinations.		
<b>MDP Policy</b>		
5.6.1.4 Design density, land uses and buildings to benefit from local transit service by minimizing walking distances to transit service and by providing safe and comfortable pedestrian streetscapes and high quality transit amenities.		
6.2.1 Develop sustainable, accessible and walkable retail and mixed-use centres demonstrating high quality architecture and design.		
6.2.1.4 Plan for retail centres that meet the daily needs of residents in Area and Neighbourhood Structure Plans.		

Objective	NSP Policy	Implementation
21		
To locate commercial areas in a manner that will best serve and connect the residents of Aster and adjacent neighbourhoods.	Commercial and mixed-use sites shall be located along arterial and/or collector roadways, major entrances, transit routes, and along major pedestrian corridors to ensure high visibility and accessibility.	The general locations of commercial and mixed-use sites are illustrated in the Land Use Concept. The orientation of the commercial and mixed-use sites will be confirmed upon application for a Development Permit.
<b>Rationale</b>		
Placing the commercial sites near the major collector and arterial roads allows all residents within the neighbourhood to access these sites using a variety of travel modes. Locating commercial sites at neighbourhood entrances brings a sense of place and definition to the neighbourhood.		
<b>MDP Policy</b>		
5.6.1.4 Design density, land uses and buildings to benefit from local transit service by minimizing walking distances to transit service and by providing safe and comfortable pedestrian streetscapes and high quality transit amenities.		
6.2.1.4 Plan for retail centres that meet the daily needs of residents in Area and Neighbourhood Structure Plans.		

Objective	NSP Policy	Implementation
22		
To provide the opportunity for mixed-use development in Aster.	(a) Mixed-use development shall be incorporated into the Aster neighbourhood at the SE corner of the 23 Avenue and 17 Street intersection.	(a) Conceptual location of the Mixed-use site is identified on the Land Use Concept.
	(b) The mixed-use development may include commercial and residential development in a variety of possible configurations. The mixed-use area may provide an opportunity to develop a range of residential densities.	(b) The type of mixed-use site will be determined at the rezoning stage. This could include applying a conventional zone or a custom zone such as a Direct Control provision, dependent on market conditions at the time of development.
	(c) The mixed-use site and church site shall have provision for shared access.	(c) Cross lot easement shall be registered on the mixed-use site and church site for the shared use of all directional access to 23 Avenue at the time of rezoning or subdivision of this parcel or the adjacent parcels.
<b>Rationale</b>		
Mixed-use development helps promote walkable, attractive and safe neighbourhoods. This type of development also aids in creating a smooth transition between commercial and residential land uses. Mixed-use development may provide live-work opportunities, and may provide an opportunity to incrementally increase the overall density of the Aster community depending on market conditions.		
<b>MDP Policy</b>		
5.6.1.4 Design density, land uses and buildings to benefit from local transit service by minimizing walking distances to transit service and by providing safe and comfortable pedestrian streetscapes and high quality transit amenities.		
6.2.1 Develop sustainable, accessible and walkable retail and mixed-use centres demonstrating high quality architecture and design.		
6.2.1.4 Plan for retail centres that meet the daily needs of residents in area and Neighbourhood Structure Plans.		

#### 4.4.6 Parkland, Recreational Facilities and Schools

The principles and policies outlined below for parkland, recreational facilities and schools have been established to specify their location, accessibility, connectivity, proximity and purpose. These principles and policies will help promote and foster a healthy living environment for the residents.

Objective	NSP Policy	Implementation
23		
To provide a centrally located school and park site within the boundary of the neighbourhood, along with smaller local parks at the periphery of the neighbourhood.	(a) The school and park site (including community league) shall be centrally located to ensure it is easily accessible by all residents in Aster.  (b) MR shall be acquired as described in Figure 10 - Land Use Concept Plan, page 28.	(a) The community league and school sites have been centrally located as shown in the Land Use Concept. The central school and park site will be implemented through the rezoning process.  (b) MR will be identified at the rezoning stage and dedicated at the subdivision stage. The Subdivision Authority will determine MR owning and areas dedicated as MR will be confirmed by legal survey at the subdivision stage.  At the time of acquisition the MR parcel will be unencumbered, suitable for development and free of any utilities other than those approved by Parks Planning.
	(c) Open space on the school sites shall be accessible to all residents through pedestrian connections.	(c) The final layout and design will be determined at the subdivision and zoning stage. Consideration shall be given to ensure appropriate on-site circulation and drop off facilities and ensure safe and optimal operations to alleviate traffic concerns associated with school development.
	(d) The school sites should be landscaped to ensure accessibility and safety using CPTED principles.	(d) The school and pedestrian connections will be landscaped at the design and development stages.
<b>Rationale</b>		
The centralized school and park site provide a central focal point for the neighbourhood. This area will serve as parkland for the entire community. The central location places the schools within walking distance of the residential areas, and provides a centrally located green space in the centre of the neighbourhood. This location provides maximum physical and visual connectivity to the school site, and enhances the overall safety of the site. The consolidated site is rectangular to provide maximum flexibility in terms of school siting and allowing adequate frontage to locate drop off and pick up zones, driveways and parking lots, as well as allowing visual access to the site from many directions. The purpose of consolidating the schools and parks spaces is to allow for the common use of facilities and recreational space.		

The Urban Parks Management Plan (UPMP) provides strategic direction as to the provision and hierarchy of parks spaces in the preparation of NSPs. The Aster NSP provides a number of park spaces to meet the 10% municipal reserve requirement, as well as to ensure a well distributed park allocation and park access for all parts of the Aster neighbourhood.

#### MDP Policy

4.3.1.1 The City of Edmonton will take municipal reserve, school reserve or municipal and school reserve, or cash-in-lieu in accordance with the Municipal Government Act and will use the land or money for purposes as defined by the Municipal Government Act.

4.3.1.11 Use the Community Knowledge Campus program in new neighbourhoods as a means of creating a focal point, improving educational related partnership opportunities at school sites and encouraging lifelong learning facilities.

7.1.2.1 Work in cooperation with developers, land owners and conservation organizations to encourage the reintegration of native and / or semi-native vegetation into Edmonton's ecological network.

Objective	NSP Policy	Implementation
24		
To provide direct physical access and visual connections to park and natural areas to encourage use of these spaces and provide natural surveillance.	(a) Parks and natural areas should be easily accessible from all areas within the neighbourhood.	(a) Pedestrian connectivity and road frontages, to meet the minimum City of Edmonton standards, will be determined at the subdivision and rezoning stage.
	(b) Public frontage to open spaces should be provided to ensure the open spaces are inviting to users.	(b) Top of bank roadways have been identified in <b>Figure 10 - Land Use Concept Plan</b> , page 28. A minimum of 40% public frontage will be provided to parks and open spaces and/or as outlined in the UPMP.
	(c) Natural surveillance of parks and natural areas shall make these spaces safer for a range of parks users.	(c) CPTED principles will be used at the subdivision stage to ensure the design of parks and natural areas encourages visual access.
<b>Rationale</b>		
Providing direct physical and visual access to parks, public spaces and natural areas (including access from multiple directions) can help ensure adequate natural surveillance to deter criminal activities. This also creates welcoming and visible recreation areas which foster participation in outdoor activities, as well as providing creative learning environments for students and teachers, the young and old.		

Objective	NSP Policy	Implementation
25		
To connect parkland, recreational facilities and school sites using shared use paths, sidewalks, and transit where possible.	(a) Shared use paths, sidewalks or transit routes shall be provided between parkland, recreational facilities and school sites.	(a) The design of the Aster neighbourhood has placed the central school and park site in the middle of the community to enhance the ability to provide connections to the school site from all areas of Aster.  Transit services in Aster will consist of bus services running along the collector roads to link major activity centres such as the school and park site, the mixed-use site, and the multi-unit housing with the rest of Aster and to neighbouring communities.
	(b) Shared use paths shall link significant natural areas, stormwater facilities, the central school and park site and the neighbourhood commercial and mixed-use sites.	(b) The locations of shared use paths, pedestrian connections, and top of bank shared use paths are illustrated in <b>Figure 12 - Walkway/Bicycle Network Plan</b> , page 69.
	(c) Top of bank roadways shall provide access along Mill Creek and shall provide a linear connection to the intersecting shared use paths.	(c) The top of bank roadways, as illustrated on the Land Use Concept will be assembled as per City of Edmonton policy C542.
	(d) Access to MR, ER, SWMFs and other areas as required shall be provided per the City UPMP, or its successor plan, at the zoning and subdivision stage.	(d) Public access to these areas will be provided for per the UPMP, or its successor plan, at the zoning and subdivision stage.
<b>Rationale</b>  Connectivity between parkland, recreational facilities and school sites are important to ensure they are easily accessible by all residents within the neighbourhood. Trail and pathway connections provide travel options for children to safely access school and park sites. Connectivity provided by shared use paths and trails enables residents to choose active travel modes for physical fitness, day to day travel, or daily commuting. Active travel modes provide health benefits, and environmental benefits, which contribute to overall quality of life. Connections to Mill Creek link Aster to the rest of the Mill Creek basin, and may eventually provide seamless travel to the North Saskatchewan River Valley. Transit services in the neighbourhood provide the opportunity for families to access the rest of Edmonton without the need and expense of automobile ownership.		

Objective	NSP Policy	Implementation
26		
To locate parkland, recreational facilities and schools sites in close proximity to multi-unit sites.	Parkland, recreational facilities and school sites shall be located near multi-unit sites.	The <b>Figure 10 - Land Use Concept Plan</b> , page 28 illustrates the locations of multi-unit sites. The configuration and size of these sites may be slightly altered at the rezoning and subdivision stages.

**Rationale**

Locating parkland and recreational sites near multi-unit sites is encouraged to allow the residents of the multi-unit sites easy access to open space where they can participate in various outdoor activities. Multi-family housing also provides an alternative housing form that places inhabitants in a setting that is close to amenities and transit connections. Locating multi-unit housing adjacent to parks and school sites provides an enhanced view for the inhabitants of buildings on these sites.

Objective	NSP Policy	Implementation
27		
To promote passive and active recreation within parkland and school sites.	The development of parkland and schools sites shall be designed to incorporate passive and active recreational space.	The design of parkland and school sites will be determined at the subdivision stage and in conjunction with detailed park planning and design processes.

**Rationale**

To aid in a healthy lifestyle for residents of Aster, it is important to plan and develop park spaces with active and passive recreation opportunities. Active and passive recreation opportunities such as walking trails, sports fields, and playgrounds can contribute to resident health associated with active lifestyles.

Objective	NSP Policy	Implementation
28		
To enhance ecological connectivity within the neighbourhood.	(a) Ecological connectivity shall be provided for through linkages to the retained wetlands and natural areas.	(a) High-value habitats such as wetlands, tree stands and Mill Creek are identified for retention in <b>Figure 10 - Land Use Concept Plan</b> , page 28.  Park sites, greenways, and bioswales have been located to serve as links between natural areas, and will be secured at the rezoning and subdivision stage.
	(b) Human-made ecological connections, such as wildlife passages, will be provided, where necessary, to link adjacent but separate natural areas.	(c) Stormwater management facility landscaping, bioswale design, and greenway designs will be confirmed at the detailed design stage. Wildlife passages are identified in the Ecological Network Report.
	(c) Consideration should be given to the retention or preservation of 'prairie donut' landforms adjacent to the Crown-claimed wetlands.	(c) Natural Area Management Plans shall consider the importance of 'prairie donut' landforms to sustaining wetlands in the vicinity and/or adjacent, and opportunities to preserve them. If preserved, provide interpretation for the public.
<b>Rationale</b>  Retaining natural areas within the design of neighbourhoods enhances the City's environmental position in terms of natural infiltration and management of stormwater; it also enhances biodiversity in Edmonton by providing habitat for a range of insects, amphibians, animals and plant species. Linking natural areas and enhancing ecological connectivity provides corridors for species to navigate and inhabit the urbanized landscape.		

#### **4.4.7 Transportation**

The transportation principles and policies are generally provided to guide neighbourhood circulation, accessibility and connectivity. These principles and policies will help residents move within the neighbourhood and connect safely and efficiently to other neighbourhoods. The transportation network is shown conceptually in (**Figure 11 - Road Network Plan**, page 68 and **Figure 12 - Walkway/Bicycle Network Plan**, page 69).

Objective	NSP Policy	Implementation
29		
Design multi-use streets utilizing City of Edmonton Complete Street Guidelines.	Roads in the Aster neighbourhood shall make use of complete streets guidelines and design principles.	The design of complete streets, including landscaping and sidewalks, shall be implemented at the subdivision stage of development, in general accordance with City design standards, including complete streets principles, to the satisfaction of City of Edmonton Transportation Services.
<b>Rationale</b>  The City of Edmonton implemented the Complete Street Guidelines in May 2013. Key roadways within <b>Figure 12 - Walkway/Bicycle Network Plan</b> , page 69 have been identified for the extension of the City of Edmonton's Conceptual Bike Network into the Plan area. Shared use paths (SUPs) have been constructed by the City of Edmonton on both sides of 17 Street and the north side of 23 Avenue (west of 17 Street). The Tamarack NSP proposes the continuation of this SUP along the north side of 23 Avenue. Secondary Bike Network includes the incorporation of bike lanes, buffered bike lanes, and/or SUPs along collector and local roadways. Tertiary Bike Network includes the incorporation of shared lanes (in-line or side-by-side), bike lanes, and/or SUPs along local roadways, enhanced local roadways, or low volume collectors. Additionally, SUP's and the TOB shared use paths are connected throughout the neighbourhood.		

Objective	NSP Policy	Implementation
30		
To provide a safe circulation system for pedestrians, bicycles, public transit and vehicles within the Plan area.	(a) All development shall provide an efficient, safe and logical transportation system within the Plan area, addressing pedestrian, bicycle, public transit and vehicular transportation needs of residents moving to, from and within the neighbourhood.	(a) The general location of shared use paths, top of bank shared use paths and pedestrian connections are outlined in <b>Figure 12 - Walkway/Bicycle Network Plan</b> , page 69.  Road right-of-way and arterial road widening shall be dedicated to the City of Edmonton in accordance with the NSP at the subdivision stage of development.
	(b) Roads are provided throughout the Aster neighbourhood. Consideration shall be given to a complete streets cross section for all roads in the neighbourhood.	(b) The design of streets including landscaping and sidewalks shall be implemented at the subdivision stage of development, in general accordance with City design standards, including complete streets principles, to the satisfaction of City of Edmonton Transportation Services.
<b>Rationale</b>		
The circulation system will help promote access to a variety of transportation options; it also allows connectivity within the neighbourhood.		
<b>MDP Policy</b>		
5.7.1.1 Design streets, sidewalks and boulevards to provide safe, accessible, attractive, interesting and comfortable spaces for pedestrians, cyclists, automobiles and transit, and to accommodate utilities, landscaping and access requirements for emergency response services.		
5.7.1.2 Support the design of street systems to be easily navigated by pedestrians, cyclists and vehicles and to provide clear and direct connections between major activity areas in the community.		

Objective	NSP Policy	Implementation
31		
To provide safe and convenient access for pedestrians and cyclists to all amenities within the neighbourhood, including access to transit.	(a) A network of hard-surfaced sidewalks and shared use paths shall be provided to promote walkability and access throughout the neighbourhood.	(a) <b>Figure 12 - Walkway/Bicycle Network Plan</b> , page 69 shall guide the future development of pedestrian connections, sidewalks and shared use paths.
	(b) Access to transit services shall be provided by ensuring a collector and local road concept that places 100% of the neighbourhood within 400m walking distance to transit (bus services located on the collector roads).	(b) Local road configurations and shared use paths demonstrating 400 m walking distance to transit will be required at rezoning and subdivision stage (see <b>Appendix 5 – Walking Distance from Bus Route</b> ).
	(c) Minor pedestrian connections shall also be provided to promote walkability and access to all neighbourhood amenities.	(c) The Subdivision Authority should have regard for the dedication of pedestrian connections to promote walkability and access to all neighbourhood amenities at the subdivision stage of development.
	(d) Bump outs and other traffic calming measures should be considered where possible, and conducive to transit operations, to help reduce the speed of vehicular traffic and ensure safety for pedestrians and cyclists.	(d) The location and design of shared-use paths along roadways, through the stormwater management facilities and parks shall be reviewed by the City of Edmonton at the zoning and subdivision stages. Additional road right-of-way will be required to accommodate shared use paths along select collector roads.
<b>Rationale</b>  Providing a variety of networks for pedestrians promotes a compact and integrated community where residents can walk to local amenities, reduces the number of trips made by vehicles and promotes a healthier lifestyle. Maximizing the provision of transit in a community is accomplished when users are within relatively easy walking distance to the service, in accordance with City of Edmonton Transit System Guidelines.  <b>MDP Policies</b>  4.6.1 Support the provision of a variety of transportation modes for Edmontonians. 4.6.1.2 Ensure active transportation opportunities are included in plans and development proposals. 4.6.1.3 Support the design of accessible and safe active transportation networks in accordance with best practices in universal design.		

Objective	NSP Policy	Implementation
32		
To provide connections to internal and external destinations.	The shared use paths and pedestrian connections in the neighbourhood should be connected to internal and external destinations so that residents and visitors have access to neighbourhood commercial sites, parks, schools, and the mixed-use site.	<p>The trails and connections are outlined in <b>Figure 12 - Walkway/Bicycle Network Plan</b>, page 69 and will be further determined at the zoning and subdivision stages, and through the parks planning and development process.</p> <p>Cross walks and connections to adjacent neighbourhoods will be provided pursuant to the City of Edmonton Transportation Services standards, generally at collector road and arterial road intersections as shown on the <b>Pedestrian Circulation Plan Figure 12 - Walkway/Bicycle Network Plan</b>, page 69.</p>
<b>Rationale</b>		
<p>Providing connections to various internal and external focal points will promote walkability and efficient movement within Aster and to surrounding neighbourhoods.</p> <p>A hierarchy of roadways will provide the necessary capacity and access to the arterial roads that border on the north and west side of Aster. The arterial roads carry traffic away from Aster to other destinations in the City, and to the region. Internal local roads will support the movement of traffic to and from the collector road network. Collector roads provide access across the neighbourhood and to the arterial roads on the edge of Aster. The collector roads provide four entrances/exits for Aster.</p> <p>City and regional level access to and from Aster is provided by 17 Street. 17 Street is the primary access to Anthony Henday Drive and Whitemud Drive and is also a 24 hour truck route. Connections to the regional highways mean that 17 Street will be upgraded to a six-lane divided arterial, with additional turning lanes.</p> <p>The western portion of 23 Avenue provides connections to major commercial areas, employment and other residential communities. The eastern portion of 23 Avenue extends towards Anthony Henday Drive with a limited access flyover. Due to the limited connection to Anthony Henday Drive, 23 Avenue will feature a reduced four lane arterial cross-section reflecting its limited travel demand, and it will require a signalized grade crossing where it crosses the CN secondary mainline.</p>		

#### 4.4.8 Infrastructure and Servicing

Infrastructure, servicing and staging principles and policies have been identified for utility rights-of-way, topography, and servicing for sanitary, stormwater, water, and shallow utilities. These principles and policies will help guide the phasing of future development.

Objective	NSP Policy	Implementation
33		
To integrate existing utility rights-of-way with natural features where possible.	Integrate within the Plan area, where possible, existing utility rights-of-way as open space or a laneway.	The existing utility rights-of-way have been incorporated into the Plan area as per <b>Figure 10 - Land Use Concept Plan</b> , page 28. Any further integration of the utility rights-of-way should be determined at the detailed design stage, as well as through the subdivision and rezoning stages.
<b>Rationale</b>		
Integrating the existing utility rights-of-way will help avoid damage during the construction process and will allow these rights-of-way to serve a dual purpose as semi-natural areas that providing ecological connectivity between natural areas, wetlands, tree stands and Mill Creek, as well as the adjacent TUC lands.		

Objective	NSP Policy	Implementation
34		
To respect the existing topography where possible.	Development should try to maintain, to the greatest extent possible existing topography.	The placement of stormwater management facilities and the retention of natural areas in Aster will ensure that the existing topography is maximized to the greatest extent possible.  The maintenance of the existing topography will be determined at the engineering design, subdivision and rezoning stages.
<b>Rationale</b>		
Working with the existing topographic landscape will assist with managing stormwater flows and in preserving natural features. The existing topographic features that are retained and contribute to the Edmonton urban ecological networks are Mill Creek, wetlands, tree stands, and naturalized stormwater ponds.		

Objective	NSP Policy	Implementation
35		
	(a) Sanitary and stormwater servicing shall be provided in accordance with the approved Neighbourhood Design Report (NDR) for this NSP.	(a) Approval of engineering drawings and servicing agreements shall be required for installation of water, sanitary and storm water servicing.
	(b) Water servicing to the NSP area shall be provided in accordance with the approved Hydraulic Network Analysis (HNA).	(b) Approval of engineering drawings and servicing agreements shall be required for installation of water, sanitary and storm water servicing.
	(c) Shallow utilities shall be extended into the Plan areas as required.	(c) Approval of engineering drawings and servicing agreements shall be required for installation of water, sanitary and storm water servicing. Installation of shallow utilities shall be executed through service agreements at the subdivision stage.
<b>Rationale</b>	Details of sanitary, stormwater and water services are provided in Aster associated reports which have been submitted under a separate cover. With regards to shallow utilities, power, gas and telecommunication services are all located within close proximity to the Aster Neighbourhood and will be extended as required.	
<b>MDP Policy</b>	7.5.3.1 Support the best management practices and principles of Edmonton's Stormwater Quality Control Strategy.	

## 5.0 LAND USE

### 5.1 General

This section provides a description of the various land uses contained within the Aster Plan area. The land uses identified will cover the various residential types and densities, school/community site, size and location of commercial opportunities in addition to the transportation network. The Plan has been developed to provide a heterogeneous community which meets the varied needs of its residents (**Figure 10 - Land Use Concept Plan**, page 28) and the relevant policies in The Meadows ASP and the Municipal Development Plan (The Way We Grow).

### 5.2 Residential

The Plan, in accordance with the objectives of the Municipal Development Plan, makes provisions for a range of dwelling types which permits a choice of accommodation. When completely developed, it is estimated that the neighbourhood will contain a population of approximately 8,755 people.

These numbers are slightly lower those originally anticipated under the Meadows ASP (131.51 ha, 9,940 people). The difference can be attributed to the following changes:

- Inclusion of institutional, commercial and mixed-use land uses.
- Increase in the size of the stormwater management facilities.
- Number of water bodies claimed by the Province.
- Orientation and number of collector roadways.

The majority of land within the neighbourhood is designated as residential (*For specific area and percentage amounts please refer to the Land Use Statistics table in Appendix 1*). The most prevalent residential type will be single-detached comprising nearly two thirds of the total number of dwelling units within Aster. DC1 or new conventional zones may be applied to accomplish unique residential forms that are not possible through the use of conventional zones. The Plan also provides for multi-level apartment-style housing, row-housing and a mixed-use site that may include multi-unit housing. This range of housing types is intended to suit a range of household incomes including the first time purchaser and moderate move-up buyers.

The majority of multi-unit sites are located where the collector roads meet the future 23 Avenue and 17 Street and the other location is south of the school site. It is anticipated that special measures will be used at these locations to ensure a quality development is produced. These

measures will include architectural controls, additional development setbacks and landscaping considerations for these sites.

A portion of all housing in the Plan area may be provided for affordable housing as per the City of Edmonton's Affordable Housing Strategy. The provision of such housing will occur in accordance with City-wide demand, the availability of required government subsidies and any pertinent City policies.

Flexibility in residential development is encouraged and permitted, allowing the Plan to accommodate changing market conditions without requiring amendments for new product types.

### **5.3 Commercial**

The NSP provides one community commercial site to meet the neighbourhood commercial needs of residents. Aster also features a mixed-use site that may also accommodate commercial uses to meet neighbourhood needs; this is discussed in the next section (5.4) of the NSP document. The commercial site is located on 17 Street at one of the major neighbourhood entrances. This commercial site is relatively close to the central school site, and is located at the intersection of an arterial and collector road to ensure appropriate vehicular access.

It is proposed that the site will be designed to include small scale convenience commercial uses catering to Aster residents and designed to be compatible with the character of the existing residential uses. Uses for this site could include convenience retailing, gas bars, and dry cleaners.

Development of the commercial site is expected to occur in stages 1 or 2, at which time more detailed requirements of site size will be evaluated and developed based on contemporary market needs.

### **5.4 Mixed-Use**

A majority of the lands fronting future 23 Avenue between the intersections of 17 Street and the collector road are designated as mixed-use. These lands are intended for a mix of commercial and residential land uses which have the potential to provide for a live-work environment. Design of the site will depend on market conditions at the time of development. This portion of the Plan area provides an opportunity for the development of residential and commercial uses. Potential uses include: row housing; low rise apartments; commercial retail; restaurants; speciality food services; professional, financial and office support services; and senior housing. Mixed-use could be implemented using either a direct control or conventional zoning, with an expected residential density of 90 units/ha.

## **5.5 Institutional Lands**

The Plan provides a centrally located consolidated school and community league site with supplementary park space. The school site is located in the centre of the neighbourhood. The central location of the school and community park site puts it within an optimal walking distance of a wide proportion of the community. The central location also ensures good access to collector road frontage for drop off locations and ensures transit service within a short distance of the future schools. In accordance with the Meadows Area Structure Plan, the site fronts collector roadways, is accessible by pedestrians, bicycles, automobiles and public transit. Additionally, the site will contain a public and catholic school, neighbourhood park, and a community league. Prior to the construction of any buildings on the school and community site, soil tests must be undertaken. These soil tests will confirm if that site is suitable for a school and community league. The school's recreational facilities provide an opportunity to serve the neighbourhood's recreational needs through the possibility of providing soccer fields, cricket fields, baseball diamonds, a park site and rink.

The school and community league site in Aster will be assembled in accordance with Part 17.1 of the *Municipal Government Act*.

An existing church site is provided for at the southeast corner of 23 Avenue and 17 Street. The church access can eventually be provided internally from the mixed-use site on 23 Avenue. Interim access should remain from 17 Street. The new consolidated access from the mixed-use site should be addressed at time of subdivision and development permit stage for mixed-use site. Developments on the Mixed-Use site and existing church site should have regard for each other and the neighbourhood, so that buildings do not 'turn their backs' on each other.

As indicated in (**Figure 10 - Land Use Concept Plan**, page 28), there is a cell phone tower located on a private land holding south of the existing 23 Avenue. At the time of NSP preparation, these lands were non-participating. Depending on the ownerships' desires and the suitability of the lands, the holdings could be appropriate for future residential development.

## **5.6 Parks and Natural Areas**

The parks and natural areas component consists of the central school and park site, wetlands, stormwater management facilities, tree stands, pocket park space and the Mill Creek riparian area. These spaces have been interconnected into a network that provides ecological linkages throughout the Plan area, as shown in **Figure 5 - Ecological Connectivity Plan**, page 17.

Mill Creek comprises the majority of the natural area (environmental reserve) within the Plan area. The Creek is centrally located within the neighbourhood flowing from southeast to northwest and provides significant space for the future provision of top of bank shared use paths and pedestrian connections.

The second major natural areas components are the wetlands and stormwater management facilities. These are primarily located in the southwest, within SE $\frac{1}{4}$  5-52-23-4, and in the northeast of the Plan area. The stormwater management facilities are proposed to be constructed in three locations. The largest pond will be located to the west of Mill Creek, adjacent to 23 Avenue. A second pond will be located east of Mill Creek in the northern portion of the Plan area and a third pond is to be located in the southern portion of the Plan area north of the TUC. These stormwater management facilities are located outside of the Mill Creek drainage course and are in conformance with both The Meadows Area Structure Plan and the Watershed Plan for Mill Creek and Fulton Creek area. The naturalized concept of the stormwater management facility will enhance the neighbourhood. Landscaping of open space, including that around the stormwater management facilities, will be a naturalized concept where appropriate, with details to be determined by Parks Planning + Environment. The naturalized concept also provides some treatment of the runoff prior to discharge into storm ponds, and eventually into the creek system.

Development of the naturalized stormwater management facilities will depend upon the necessary innovative engineering design and landscape architecture that will ensure the facility is self-sustaining and provides the necessary stormwater management for the neighbourhood.

## 5.7 Top of Bank Roadway Policy

Although Mill Creek is relatively shallow and distant from the deeper portions of the North Saskatchewan River Valley and ravine system, City of Edmonton Top of Bank (C542) policy applies along the edges of Mill Creek. This requires that a top of bank line is established, along with appropriate setbacks and that frontage be provided to Mill Creek for public top of bank roadway access. **Figure 10 - Land Use Concept Plan**, page 28, identifies opportunities for top of bank roadway access. These areas provide public access and connectivity to Mill Creek through local road design. The top of bank roadway will be assembled as per Policy C542 at the rezoning and subdivision stages.

To ensure the safety of urban development, Aster will conform to the City of Edmonton Top of Bank Policy. All development will be subject to relevant setbacks as determined in the Geotechnical Investigation Slope Stability Study (J.R. Paine & Associates Ltd, 2013) prior to submission.

## **5.8 Transportation Network**

This section of the document provides a description of the general transportation network.

### **5.8.1 Future External Roadway Network**

The Meadows ASP identified two arterial roads which border the Aster Neighbourhood to the north and west. The two arterials (23 Avenue and 17 Street) are identified as integral components of the City of Edmonton transportation network in the southeast. These roads will accommodate the regional transportation requirements in Southeast Edmonton as well as meeting the access and transportation requirements of Aster. The ultimate construction of 17 Street will be a six lane divided arterial.

The 23 Avenue Government Road Allowance (between 17 Street NW and the TUC) is designated to be closed and incorporated into the plan area, where applicable, as part of the developable land. Where possible, the collector roadway network will be accommodated within the existing Government Road Allowance.

### **5.8.2 Circulation System**

The internal collector roadway system and the external arterial roadway network for the Aster Neighbourhood are illustrated on **Figure 11 - Road Network**, page 68.

The collector road network connects to each of the two arterial roads, 17 Street and future 23 Avenue and provides connections to the adjacent Tamarack and Laurel neighbourhoods.

Collector Road 1 provides internal access through the north portion of the Plan area and loops from 23 Avenue in the north and back to 23 Avenue further south. Collector Road 2 provides a link from Collector Road 1 in the north, to 17 Street in the far south.

Collector Road 3 provides east – west connectivity across the middle of the south portion of the Plan area, and is the first collector road that will be developed in accordance with the Staging Plan (**Figure 16 - Staging Plan**, page 88).

Collector Roads 1 and 2 provide a north to south link through the Aster neighbourhood, and come together at an intersection located in the middle of the Plan area just west of Mill Creek.

This collector network will provide good access for local residents while discouraging short cutting traffic through the neighbourhood. Overall, the three internal collectors provide appropriate access to the centrally located school/park site as well as direct access to the arterial roadways. Vehicular access to the school site will be provided off of these three collector roads.

The internal roadway network has been planned to accomplish three primary objectives. The first objective is to provide strong neighbourhood access that will allow residents of the neighbourhood to efficiently access the adjacent arterial roadway network. The second objective is to provide the ability to move within the neighbourhood to access the school and park sites as well as neighbourhood commercial sites without requiring the use of the external arterial system. The third objective is to provide a collector road network that preserves the retained wetlands identified in the NSP. The proposed collector network was set to ensure the roadways did not bisect the wetlands.

The collector roadways will be designed to accommodate buses. Passenger access to public transit will be maximized through local street and walkway design at the zoning and subdivision stages, in accordance with Edmonton Transit Oriented Development Policy and Guidelines.

Sidewalks will be provided along all roadways, in accordance with the City of Edmonton Design and Construction Standards. In addition to the road-based system, a network of shared use paths, top of bank shared use paths and pedestrian connections will be developed along utility corridors, near stormwater management facilities, along Mill Creek, and other locations, to provide pedestrian access to schools, commercial sites, and public transit. The pedestrian connections will also provide access to and across Mill Creek.

All future developments within the Aster NSP are subject to the Arterial Roadway Assessment program established in order to equitably share arterial roadway construction costs among developers of land within the Arterial Roadway Assessment area. Details of the Arterial Roadway Assessment program can be obtained from Transportation Services.

Noise attenuation supportive measures will be required for all residential development adjacent to 17 Street. Noise modeling recommends a 1.0 m earth berm with a 1.83 m solid screen wood fence for all residential backing onto or beside 17 Street, from the church site to the TUC. Noise and vibration modeling also recommends a 4.5 m tall berm, or wall, or combination berm and wall, adjacent to the CN rail line. Additional details can be found in the Noise and Vibration Impact Assessment submitted with the NSP. At the time of the approval of the Area Structure Plan, truck routes near Aster are:

- 17 Street, from 23 Avenue to Transportation and Utilities Corridor, is a 24-hour truck route.
- 23 Avenue, from 17 Street to 34 Street, is a 24-hour truck route.

The implementation of all collector roadways will be in accordance with the information and recommendations contained within the Aster Neighbourhood Structure Plan Transportation Impact Study and the subsequent letters of revision. Details of the roadway information should be confirmed with the Transportation and Streets Department.

No direct vehicular access, other than those identified as arterial/collector access points of the neighbourhood, will be permitted to 23 Avenue or 17 Street from the adjacent residential development.

The east side of the Plan area incorporates a berm and fence on a portion of West Railway Street and is adjacent to Alberta Infrastructure (AI) land. Future development within this area would require the submission of a road closure application to the City of Edmonton, and acquisition of the surplus AI lands.

### **5.8.3 Pedestrian Circulation**

An integrated system of shared use paths and pedestrian connections has been provided to connect the school sites, parks, commercial area and Mill Creek. This integrated walkways/bicycle system is illustrated in **Figure 12 - Walkway/Bicycle Network**, page 69. The pedestrian facilities provided adjacent to the local and collector roadways in the Neighbourhood will accommodate the resident's needs.

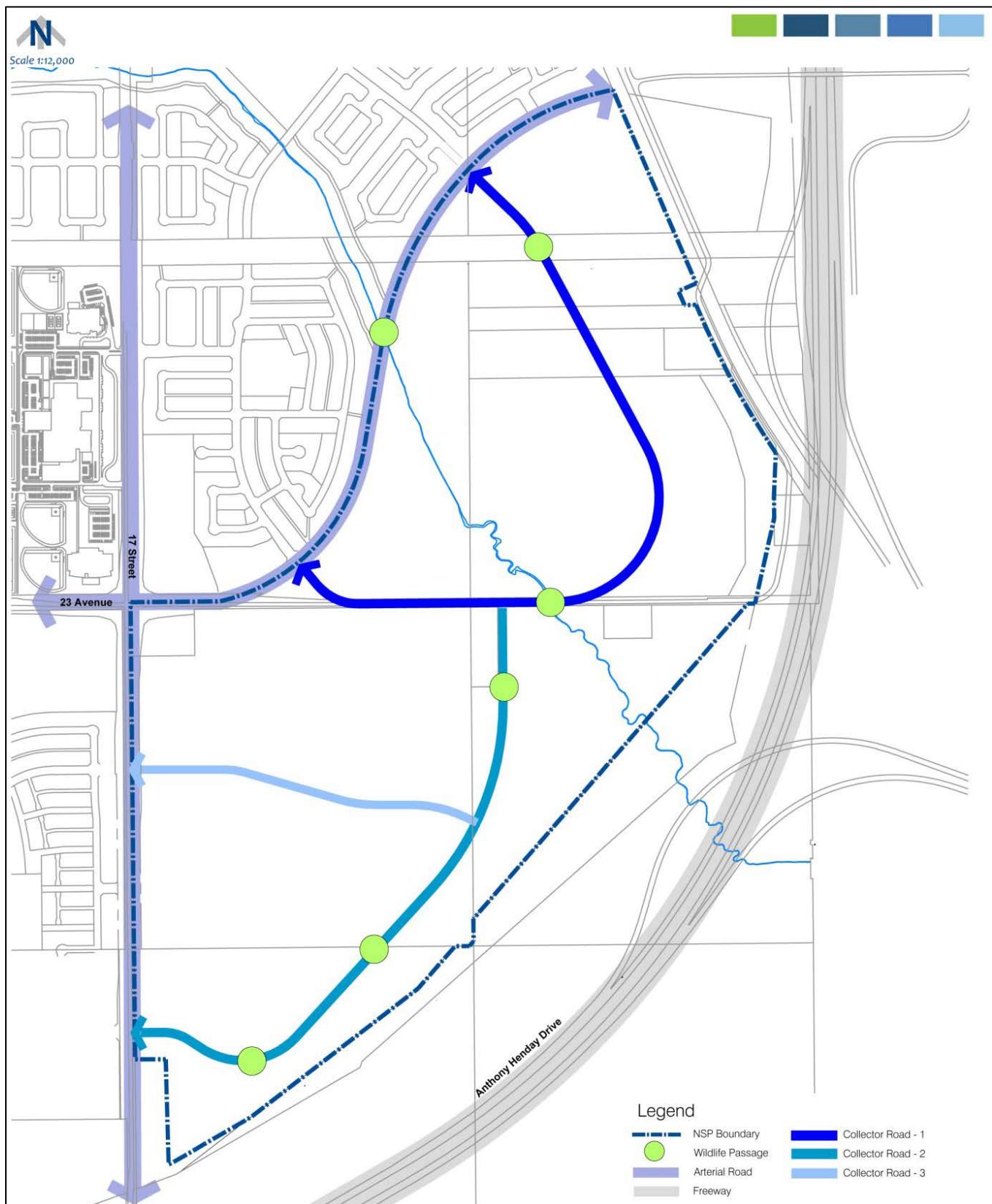
Pedestrians and cyclists for the most part will use the local road network for circulation purposes. Along the three collector roads will be a Secondary Bike Network which includes the incorporation of bike lanes, buffered bike lanes, and/or SUPs. All roads in Aster will feature sidewalks for pedestrian travel.

Outside of the plan area, along 23 Avenue and 17 Street there will be the inclusion of shared use paths. The shared use paths will be on the north side of 23 Avenue and the west side of 17 Street (as indicated on the plan "Shared Use Paths by Others"). The construction of these shared use paths will be undertaken by developers in association with the Tamarack neighbourhood to the north and Laurel neighbourhood to the west.

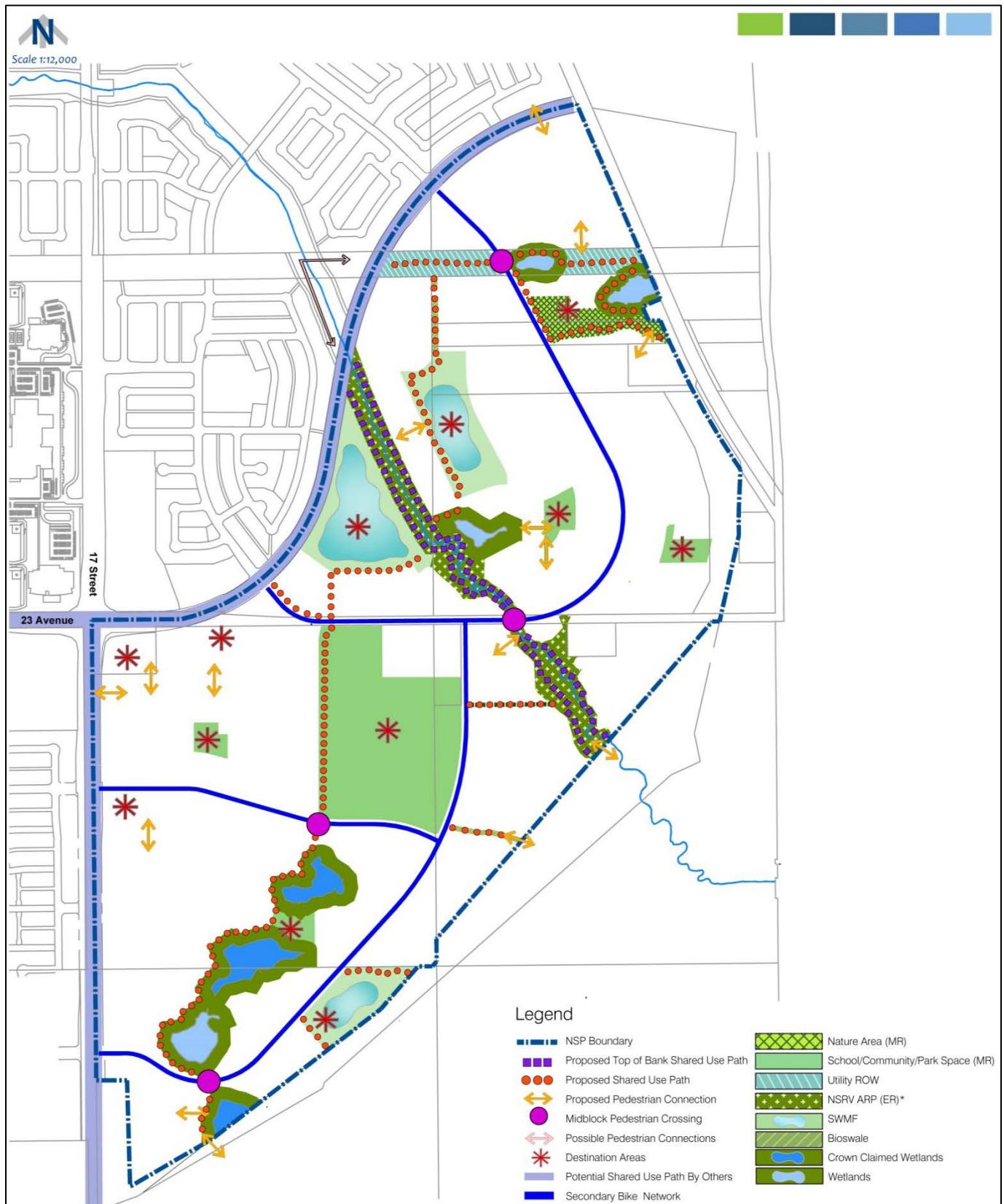
### **5.8.4 Wildlife Passages**

Wildlife passages will be provided and constructed at the locations as generally shown on **Figure 11 – Road Network Plan**. Each passage will be designed and constructed to accommodate the appropriate design group per the ENR Phase II, Figure 14 and Table 40.

**Figure 11 - Road Network Plan**



**Figure 12 - Walkway/Bicycle Network Plan**



## **6.0 STATUTORY PLAN AND POLICY CONTEXT**

### **6.1 Statutory Plan and Policy Context**

Aster supports various Federal, Provincial and Municipal policies, provisions, regulations and strategic planning documents. Examples of relevant policy/statutory documents are listed below.

***Capital Region Growth Plan (CRGP) “Growing Forward”:*** The CRGP was approved by the Government of Alberta on March 11, 2010. The Plan provides a vision for the Capital Region’s future.

***Municipal Development Plan (MDP) “The Way We Grow”:*** This document describes the vision for the City of Edmonton’s development. It outlines specific policies and strategies to help guide growth and development for the next 10 years. The MDP designates Aster as developing/planned/future neighbourhood.

***Transportation Master Plan (TMP) “The Way We Move”:*** This document provides a framework for how the City of Edmonton will address its future transportation needs.

***People Plan (PP) “The Way We Live”:*** This strategic plan sets the direction, establishes priorities and guides decisions about current and future people services in the City of Edmonton.

***Environmental Strategic Plan (ESP) “The Way We Green”:*** This is the City’s environmental strategic plan outlining principles, goals, objectives, actions and approaches for Edmonton to live a balanced life with nature.

***City of Edmonton Wetland Strategy (CEWS):*** This Strategy outlines the City’s commitments to guide wetland conservation practices and the tools to conserve these wetlands.

***The Meadows Area Structure Plan (ASP) Bylaw 13531:*** The Meadows ASP provides general policies and guidelines to facilitate the orderly development of the plan area in terms of proposed land uses, density of development, transportation facilities, infrastructure and servicing, and staging of development.

***Smart Choices for Developing Our Community (SCDC) Council Recommendations:*** These recommendations were approved by City Council on March 23, 2004 to promote urban sustainability.

***Crime Prevention Through Environmental Design (CPTED):*** These guidelines are based on theory that proper design and effective use of the built environment can reduce crime, the fear of crime, and improve the quality of life. Principles that shall be applied to Aster are Natural

Access Control restricts access, Natural Surveillance increases visibility, and Territorial Reinforcement promotes a sense of ownership.

***City of Edmonton Design Guidelines for a Safer City:*** These guidelines are based on theory that proper design and effective use of the built environment can reduce crime, the fear of crime, and improve the quality of life.

***Urban Parks Management Plan (UPMP):*** This document provides strategic direction for the acquisition, design, construction, maintenance, preservation and animation (or use) of parks.

***North Saskatchewan River Valley Area Redevelopment Plan (NSRV ARP):*** The purpose of this plan is to protect the North Saskatchewan River Valley and Ravine System as part of Edmonton's valuable open space heritage. The Plan envisions the major portion of the River Valley and Ravine System for use as an environmental protection area and for major urban and natural parks.

***Development Setbacks from River Valley / Ravine Crests Policy C542:*** This policy outlines the preservation of and public access to the North Saskatchewan River Valley and Ravine System in Edmonton. This policy requires the design of development in all new or redeveloping areas abutting the River Valley and Ravine System to provide for a separation of development from the river valley or ravine.

***Natural Area Systems Policy C531:*** This policy outlines how the City will commit to conserving, protecting, and restoring natural uplands, wetlands, water bodies, and riparian areas, as integrated and connected system of natural areas throughout the city.

The following tables (Tables 3 - 9) summarize the key objectives from some of the above noted policy documents applicable to the design of the Aster NSP, and demonstrates how each has been incorporated into this Plan.

**Table 3 - Aster NSP Complies with the Following Capital Region Growth Plan Policies**

Policy	NSP Compliance with Policy
I.A.ii: Any development which fragments contiguous natural features, functions and habitat, such as water systems, moraines, forests, wetlands, and wildlife habitat and corridors shall be discouraged.	Aster preserves and protects Mill Creek, key water bodies and treed areas. The natural areas and park spaces identified for retention are intended to provide enhanced connectivity for wildlife at the regional, sub-regional, and local level. Mill Creek, the wetlands, and the various greenways and bioswales provide connectivity to adjacent neighbourhoods, water-bodies and natural area networks along the TUC/Anthony Henday Drive.
I.A.vi: Manage land use distribution patterns to reduce reliance on automobiles.	A network of shared use paths, sidewalks, and green linkages promote various travel modes within the neighbourhood.
II.B. i: Most new growth shall occur within priority growth areas.	This NSP is located in Priority Growth area "B". More specifically sub-area B3 which consist of established and developing neighbourhoods. This NSP meets the density targets of 30-45+ dwelling units/net residential hectare.
III.A.ii: Integrate uses with adjacent developments to improve connectivity and accessibility to local parks, open space, commercial, and community services.	The core of the neighbourhood is highly integrated and provides a community league, park space, commercial, multi-unit and single-family residential sites.
III.B.ii: Improve accessibility to community services by providing sidewalks, bicycle trails to encourage walking and cycling and locate these services within proximity to transit, where possible.	Aster provides a number of pedestrian and cyclist connections throughout the neighbourhood ( <b>Figure 12 - Walkway/Bicycle Network Plan</b> ). Many of these trails cross collector roads which will be serviced by public transit.
III.C.i: Provide a mix of higher intensity land uses along transit corridors, at nodes, and employment centres.	Multi-family and commercial sites are located on or near collector and arterial roads.

**Table 4 - Aster NSP Complies with the Following Municipal Development Plan Policies**

Policy	NSP Compliance with Policy
3.2.1.1: Ensure a combination of single-family and multi-family housing development potential is available for the next 30 years.	The NSP will include both single and multi-unit housing.
3.2.1.3: Achieve a balance between residential, industrial, commercial, institutional, natural and recreational land uses in the city through land development policies and decisions.	The neighbourhood incorporates various development opportunities through the following land use components: residential, commercial, mixed use, institutional and parks.
3.6.1.6: Support contiguous development and infrastructure in order to accommodate growth in an orderly and economical fashion.	The neighbourhood is in an approved Growth Area, adjacent to approved NSPs under development, and is served by infrastructure to the plan area boundaries which will be extended to service the neighbourhood.
4.3.1.5: Time the development of parks as closely as possible with the development they are intended to serve.	Through development staging, park space will be available to residents accordingly ( <b>Figure 16 - Staging Plan</b> ).
4.4.1.1: Provide a broad and varied housing choice, incorporating housing for various demographic and income groups in all neighbourhoods	The neighbourhood offers the opportunity for a variety of housing forms in both low- and medium-density.
5.5.1.2: Incorporate sustainable neighbourhood design principles, low impact development and ecological design approaches when planning and building new neighbourhoods.	To the extent possible the NSP will preserve the pre-development flows and water quality of Mill Creek and many of the wetlands identified for retention. The entire neighbourhood concept is such that high quality wetlands and other natural areas are retained and incorporated into the development concept. <b>Figure 5 - Ecological Connectivity Plan</b> provides an outline of the ecological connectivity of the neighbourhood. Low Impact Development features such as bioswales will be incorporated into the development as shown in <b>Figure 10 - Land Use Concept Plan</b> .
7.4.1.1: Link parks and open spaces with natural systems through development and design to strengthen the connectivity of Edmonton's ecological network, where feasible.	Mill Creek, parks, and stormwater management facilities are strategically located to serve as a web of interconnected natural areas and green spaces that provide the opportunity for a variety of species to progress through and across the NSP area, and to connect to habitat areas in adjacent plan areas and the TUC.  <b>Figure 5 - Ecological Connectivity Plan</b> provides an outline of the ecological connectivity of the neighbourhood.

**Table 5 - Aster NSP Complies with the Following Transportation Master Plan Strategic Goals**

Policy	NSP Compliance with Policy
<b>Transportation and Land Use Integration:</b> the transportation system and land use / urban design complement and support each other so that the use of transit and transportation infrastructure is optimized and supports best practices for land use.	Aster offers various collector, arterial and residential roadways which complement the different land uses and densities which should encourage transit use.
<b>Sustainability:</b> transportation decisions reflect an integrated approach to environmental, financial, and social impacts thereby creating sustainable, livable communities that minimize the need for new infrastructure and increase residents' quality of life.	The NSP supports residential densities and active transportation options. Basic necessities are easily accessible through various transportation modes. Services in the existing neighbourhoods will be extended to serve this neighbourhood.
<b>Health and Safety:</b> the transportation system supports healthy, active lifestyles, and addresses user safety and security including access for emergency response services, contributing to Edmonton's livability.	Pedestrian and shared-use paths allow residents to move with ease throughout the neighbourhood, promoting a healthy and active lifestyle.

**Table 6 - Aster NSP Complies with the Following “The Way We Live” Objectives**

Policy	NSP Compliance with Policy
1.1 The City of Edmonton provides opportunities in neighbourhood, community and public spaces to connect people and build vibrant communities.	The focal points of this NSP are the community league and combined park/school site, and Mill Creek. These features will help promote a sense of community and connectedness.
2.1 The City of Edmonton celebrates and promotes healthy living.	Interconnected shared use paths throughout the neighbourhood's green spaces encourage a healthy lifestyle.
2.2 The City of Edmonton provides for the well-being of its citizens through outstanding parks, natural, green and public spaces.	The NSP offers a school park, multiple stormwater management facilities, top of bank shared use paths, and environmental reserves.

**Table 7 - Aster NSP Complies with the Following “The Way We Green” Objectives**

Policy	NSP Compliance with Policy
3.3: The City of Edmonton protects, preserves and enhances a system of conserved natural areas within a functioning and interconnected ecological network.	Aster will preserve Mill Creek, some water bodies and treed areas; and the Province has claimed three wetlands. This preservation not only promotes ecological responsibility but also connects the residents with the environment.
3.4: The City restores ecologically degraded and/or damaged ecological systems and linkages to protect, expand and enhance biodiversity.	Mill Creek will be reconstructed to ensure it meets the drainage requirements and ecological function of the neighbourhood development. This reconstruction also meets the City's ambition to improve the grading of the creek to increase the drainage capacity.

**Table 8 - Aster NSP Complies with the City of Edmonton Wetland Strategy**

Policy	NSP Compliance with Policy
3.1.1.c. para 2: The Natural Site Assessment (NSA) is completed using an ecological network approach, with consideration given to all natural features within the Plan area, rather than individual natural sites. Environmental elements including flora, fauna, ecological linkages, biodiversity, surface and groundwater quality, and topography are analyzed, and mitigation and management plans are developed to address impacts from development.	Aster addresses the various environmental elements that were considered in the Preliminary Water Body Identification and Mapping Report (2013).
3.1.2.a. para 3: During the NSP phase, the terms of reference direct developers to:  Delineate (i.e. conduct a legal survey) all water features for participating lands within the Plan area subject to ownership and or regulatory interest by the Province or municipality. This includes wetlands, water bodies, and filled-in water bodies.	Preliminary Water Body Identification and Mapping Report (2013) which included a survey of the various water features within Aster.
Provide a statistical summary of proposed land use for the neighbourhood, including the amount of land to be dedicated as Natural Area Environmental Reserve and Natural Area Municipal Reserve.	Appendix 1 – Statistical Calculations illustrates the lands dedicated as Natural Area Environmental Reserve and Natural Area Municipal Reserve.

Policy	NSP Compliance with Policy
<p>3.1.2.b. para 3: The Environmental Reserve guidelines provide a methodology for determining the buffer zone width requirements for each of the four components of ER (i.e. flooding, instability, pollution prevention and public access). According to the guidelines, the greatest extent of all of these ER components should be identified as the required area for ER dedication.</p>	<p>Aster has provided a buffer around each wetland boundary to prevent pollution.</p>
<p>3.1.2.c: Edmonton's far southeast contains a multitude of natural wetlands, many of which are situated on private land that could be developed in the coming years.</p>	<p>Preliminary Water Body Identification and Mapping Report (2013) was completed for Aster. The recommendations to preserve the water bodies in the neighbourhood have been incorporated into the design of the neighbourhood.</p>
<p>3.1.4.a para 1: As stated in The Way We Green (see section 2.1d), the City requires 'compensation within the borders of the city for wetland drainage or alteration (in full or part) for all non-ephemeral wetlands (i.e., Class ii, iii, iv, and v wetlands in the Stewart and Kantrud system) and all peatlands in the form of restoration or construction of a similarly functioning wetland.</p>	<p>The Province has claimed three wetlands within the NSP. Aster will work with Alberta Environment to compensate for any disturbed water bodies in the neighbourhood, as required by the Water Act.</p>
<p>3.1.4.a. para 2: Developed in 2010, the Wetland loss Compensation Site framework (Spencer 2010b) is a launching point for the City's efforts to ensure that future wetland compensation can take place within City of Edmonton boundaries. The purpose of this framework was to identify candidate compensation sites in Edmonton that could be restored by developers as compensation for lost sites. Under the framework, compensation could include:</p> <ul style="list-style-type: none"> <li>• Restoration or enhancement of degraded natural wetlands.</li> <li>• Construction of a stormwater wetland.</li> </ul>	<p>Aster will restore or enhance disrupted water bodies, and construct new stormwater management facilities to compensate for the modification of other water bodies in the area.</p>

Policy	NSP Compliance with Policy
<p><b>3.1.5.a.i:</b> Drainage Design and Construction Standard. This standard guides developers through the drainage planning process, and describes the various reports that must be submitted (Figure 3.1). If a constructed wetland is planned for the development, these reports must include information about how the wetland will interact with the surrounding drainage system and watershed, provide detailed design and construction specifications, and describe management and maintenance requirements related to vegetation and water quality. As the process moves from conceptual to detailed, more information is required about the proposed constructed wetland's layout, features, and monitoring and maintenance programs.</p>	<p>The Aster Neighbourhood Drainage Report (NDR) will address the Drainage Design and Construction Standard by including detailed information about how the water bodies will interact with surrounding drainage system and watershed, provide detailed design and construction specifications, and describe management and maintenance requirements related to vegetation and water quality.</p>
<p><b>3.3.1.c. para 2:</b> At the City of Edmonton's John Janzen Nature Centre, local students are invited to investigate an on-site wetland through the interpreter-led Pond Exploration program. The program's objectives include introducing students to wetland ecosystems and organisms and helping them to understand how human actions can negatively impact wetlands. Offered to a range of grades, students gain appreciation for wetland ecosystems by dipping for insects, viewing local reptiles and amphibians, and handling real wetland artifacts. The field trips have direct links with the school curriculum, and include in-class activities for additional learning.</p>	<p>Aster incorporates immediate access from the school sites to neighbourhood water bodies. The proximity to these natural features provides opportunities for schools to create hands-on programs that educate students on wetland ecosystems.</p>

**Table 9 - Aster NSP Complies with the Following Meadows Area Structure Plan Principles**

Policy	NSP Compliance with Policy
<p><b>4.2.2 Bullet 2:</b> Design neighbourhoods that are distinct, establish a unique character and sense of place.</p>	<p>Aster's design demonstrates a strong connection to its environmental features such as Mill Creek, a centrally located school and community site, multiple pocket parks, and a number of water features with unique geological significance.</p>
<p><b>4.2.3 Bullet 3:</b> Establish a ratio of low and medium density housing that conforms to City Council's guidelines on the mix of housing types in new neighbourhoods.</p>	<p>This NSP will implement a ratio that is close to Council's guidelines of 30% medium density and 70% low density: medium density between 15-35% and low density 65-85%.</p>

Policy	NSP Compliance with Policy
<p><b>4.2.3 Bullet 4:</b> Locate residential development so as to take advantage of features such as stormwater management facilities, walkways and park space.</p> <p><b>4.2.3 Bullet 5:</b> Orient larger parcels of medium density residential development toward the edges of the neighbourhood, adjacent to arterial and collector roadways, transit routes, and near community focal points.</p>	<p>The majority of the residential development is formed around existing and proposed natural features and linkages.</p> <p>The multi-unit housing sites are located near arterial and collector roadways and near the community focal points.</p>
<p><b>4.2.4 Bullet 3:</b> Locate and orient commercial sites along arterial and/or collector roadways to ensure high visibility, to provide convenient access opportunities for both transit and private vehicles, and to prevent through-traffic neighbourhoods.</p> <p><b>4.2.4 Bullet 5:</b> Provide convenient pedestrian linkages to commercial areas.</p>	<p>Commercial sites are located near the exterior boundaries, as well as one central to the neighbourhood.</p> <p>Most areas within the neighbourhood can easily access the commercial sites by using the pedestrian linkages.</p>
<p><b>4.2.6 Bullet 2:</b> Integrate pipeline and power line corridors, stormwater management facilities, school/park sites and other open space elements into the pedestrian and bikeway system for the area having regard for the safe ongoing operation of these facilities.</p> <p><b>4.2.6 Bullet 5:</b> Encourage walkability by providing pedestrian connections to link residential areas, parks and open spaces, school sites, commercial sites, and transit-oriented mix use development.</p>	<p>Green linkages are located near or adjacent to stormwater management facilities, school/park sites, pipeline and power line corridors, ensuring a safe ongoing operation of these facilities.</p> <p>The major focus of the NSP is to preserve and enhance the neighbourhood by providing pedestrian focused linkages to encourage walkability within and throughout the neighbourhood.</p>
<p><b>4.2.7 Bullet 1:</b> Provide sites for educational and community league facilities within residential neighbourhoods through the dedication of municipal reserves.</p> <p><b>4.2.7 Bullet 4:</b> Locate parks and open space to provide both easy access for residents and to facilitate timely assembly and development of sites.</p> <p><b>4.2.7 Bullet 5:</b> Connect school and park sites through roadway, pedestrian, and greenway linkages.</p>	<p>Municipal reserves have been centrally located to allow the accommodation of a community league and school which will service the immediate neighbourhood.</p> <p>Multiple green spaces are provided within the neighbourhood and are strategically spaced to be easily accessible.</p> <p>School and parks are connected by green linkages and roadways from various residential areas to promote walking, cycling and public transportation.</p>

Policy	NSP Compliance with Policy
<p><b>4.2.8 Bullet 3:</b> Ensure the protection and enhancement of significant environmental natural areas within The Meadows.</p>	<p>Many existing natural areas will be preserved and/or enhanced to complete the community. An interconnected network of natural areas provides a unique residential experience that is not typical of Edmonton. The development concept features a number of wetlands, pocket parks, bioswales, greenways, tree stands and connections to the elongated Mill Creek greenway.</p>
<p><b>4.2.10 Bullet 1:</b> Protect and enhance the Mill and Fulton Creek ravines.</p>	<p>Mill Creek will be rehabilitated to ensure it meets the drainage requirements and ecological function of the neighbourhood development. This rehabilitation also meets the City's ambition to improve the grading of the creek to increase the drainage capacity.</p>
<p><b>4.2.10 Bullet 2:</b> Minimize roadway crossings of the Mill and Fulton Creeks.</p>	<p>There will be two roadway crossings over Mill Creek in order to link the neighbourhoods to the northeast and southwest within Aster.</p>
<p><b>4.2.10 Bullet 3:</b> Implement the City of Edmonton's Top of Bank Roadway Policy when developing lands adjacent to the Mill and Fulton Creeks.</p>	<p>Top of Bank Roadway Policy will be implemented in this neighbourhood.</p>
<p><b>4.2.10 Bullet 4:</b> Conserve and integrate environmentally sensitive and other natural areas where sustainable and economically viable.</p>	<p>Some water bodies and treed areas will be conserved to establish the residential-environmental link.</p>

**Table 10 - Aster NSP Complies with the Following Urban Parks Master Plan Principles**

Policy	NSP Compliance with Policy
<b>Principle 1: Active Living</b>  City and partner actions demonstrate a strong commitment to active living through the acquisition of a network of connected parks and open spaces.	Active living is strongly promoted in Aster as there are various networks throughout the neighbourhood which proceed through ecological spaces where residents can walk and cycle.
<b>Principle 3: Natural Capital</b>  City and partner actions demonstrate a strong commitment to preservation of natural capital through ecological decision making.	Preserving and enhancing natural areas should help sustain the local ecology.
<b>Principle 4: Creative Urban Design</b>  City and partner actions demonstrate a strong commitment to a higher quality of life and urban sustainability through place making, creative urban design and the provision of diverse landscape opportunities and experiences.	Aster provides a number of destination areas and ecological features which are all integrated within the community ( <b>Figure 12 - Walkway/Bicycle Network Plan</b> ). These areas and features promote the opportunity for creative place making in the sense that they can be enjoyed and accessed by all residents. They have characteristics which support social and cultural interaction, and provide a diverse visual landscape which can assist the community in developing its own sense of place.  The NSP integrates all land uses with an emphasis on ecological features (such as Mill Creek) and commercial developments. The concept for the NSP was designed to encompass walkability, focal points and gathering places, connectivity, and open spaces that can be accessed by all residents.
<b>Principle 7: Integrated Parks</b>  City and partner actions demonstrate a strong commitment to the integration of City, school and community facilities into the park system to meet community need.	Aster incorporates parks, a community league and a school by centrally locating them and placing them adjacent to one another.

## 6.2 Zoning Bylaw

The Aster neighbourhood is currently zoned AG (Agricultural) as per the City of Edmonton Zoning Bylaw 12800 as amended. Future rezoning of lands in Edmonton will be done in accordance with the Edmonton Zoning Bylaw and the Aster NSP.

## 7.0 ENGINEERING SERVICES AND UTILITIES

### 7.1 General

This section of the NSP outlines the provision of municipal and utility services to Aster including storm drainage, sanitary sewerage, water distribution, and shallow utilities in general terms. More detailed information regarding Utility Servicing can be obtained from the NDR and HNA for Aster that will be submitted as stand-alone documents.

### 7.2 Storm Drainage

The storm drainage concept for Aster is outlined in **Figure 13 - Storm Drainage Plan**, page 84. As shown, the neighbourhood is separated into three storm basins, A, B and C; each contains a Stormwater Management Facility.

Basin A, consisting of the area northeast of Mill Creek, drains west towards a stormwater management facilities located on the central-west side of the catchment. Pond A (~4.35 ha) will be an off-stream pond and will outfall into Mill Creek through a control structure. The structure will be constructed to limit the outflow. An outfall location study will be required for all proposed outfall locations within the North Saskatchewan River Valley Area Redevelopment Plan area. Pond A will be developed utilizing an enhanced design with the objective of producing a SWMF which achieves a level of ecological enhancement in excess of a typical facility. To achieve this result, technical sources will be utilized including the findings and recommendations of Section 7.4 of the Biological Monitoring at City of Edmonton Wetlands and Stormwater Facilities Year Five – 2011 (Spencer Environmental, 2011). A three-year water quality and ecological services monitoring program will be developed and implemented to provide data on the performance of the facility.

Compensation for the loss of Wetland 42 will be provided. Opportunities for this compensation to be provided within the Aster NSP area will be explored.

Basin B, consisting of the area to the southwest of Mill Creek, is serviced by two stormwater management facilities (Pond B and Pond C). Pond B (~5.78 ha) is located at the north tip of the basin bordered by Mill Creek to the northeast, and 23 Avenue to the northwest. An interim stage of Pond B has been constructed to service the Tamarack Neighborhood to the northwest. The interim pond is on the site of the proposed Pond B and will be incorporated into the construction of the ultimate Pond B in the first stages of development.

Pond C (~2.67 ha) is located within Basin C which drains to Basin B in a northerly direction. It has been sized to accommodate one hectare of open water as per the City requirements. The ultimate type, location, and size of this facility will be verified prior to rezoning to determine the

servicing size is appropriate for the proposed land uses. As such, Pond C has been identified for further study on **Figure 10 - Land Use Concept Plan**, page 28.

A portion of Mill Creek, between the proposed 23 Avenue and 17 Street is planned to be reconstructed. Until this portion of Mill Creek is lowered, interim servicing will be required on a semi-permanent basis to discharge from Ponds A and B. This is necessary as the landowner north of 23 Avenue is not participating in this development. The interim servicing will control water levels in the ponds at a controlled rate to the creek that matches pre-development flows. The interim structures will be designed in such a manner that they can be transformed into gravity outlet control structures when the downstream creek is lowered and widened. Further information can be found in the Neighbourhood Design Report.

LID features, such as bioswales and absorbent landscaping have been proposed as part of the stormwater management system. These features help target stormwater volume control, peak flow control, and water quality enhancement. LID features focus on maintaining or restoring the natural hydrological process of a site, providing opportunities for natural processes to take place.

### **7.3 Sanitary Sewerage**

The sanitary system shall be constructed in accordance with the City of Edmonton Design and Construction Standards. The entire system should function through gravity and should function as an extension to the existing trunks in the Tamarack Neighborhood to the north.

The north basin contains two sanitary sub-basins where all flows combine at the trunk line that will run along 23 Avenue to the Tamarack Neighbourhood. The flows from Aster and part of Tamarack are proposed to flow northwest and connect directly with the existing 900mm trunk at the crossing of 17 Street and 34 Avenue. The area is split into two basins, northeast of Mill Creek and southwest of Mill Creek. The northeast basin will tie into a proposed 450 mm trunk and the southwest basin to a 525 mm trunk.

Because of the location of the neighborhood the sanitary network does not have to be upsized to accommodate future additional flows from bordering neighborhoods. For an outline of the proposed sanitary network see **Figure 14 - Sanitary Servicing Plan**, page 85.

### **7.4 Water Servicing**

Water servicing should be designed and constructed using conventional methods for providing peak hour demands and adequate fire flows for single detached, multi-unit, schools, churches and commercial usages. Water looping will be provided as required in the City of Edmonton Servicing Standards Manual (January 2013).

A Water Network Analysis will be submitted to EPCOR for review and approval. Water service for Aster should be provided by four 450 mm connections, one at each of the collector roads entering the Neighborhood. The southwest area will be serviced by three connections: two on 17 Street and one on 23 Avenue.

The majority of the southwest basin will be constructed prior to commencing construction on the northeast section. The northeast basin will be supplied by two connections, one from the north, 23 Avenue crossing, and the other from the southwest neighborhood at the Mill Creek crossing. The water servicing network is outlined in **Figure 15 - Water Servicing Plan**, page 86.

The water main crossing Mill Creek at existing 23 Avenue will be developed in consultation with EPCOR. The details will be determined through the technical design stage and may include a below ground creek crossing that involves a cased pipe to reduce disturbances to the creek during installation and maintenance.

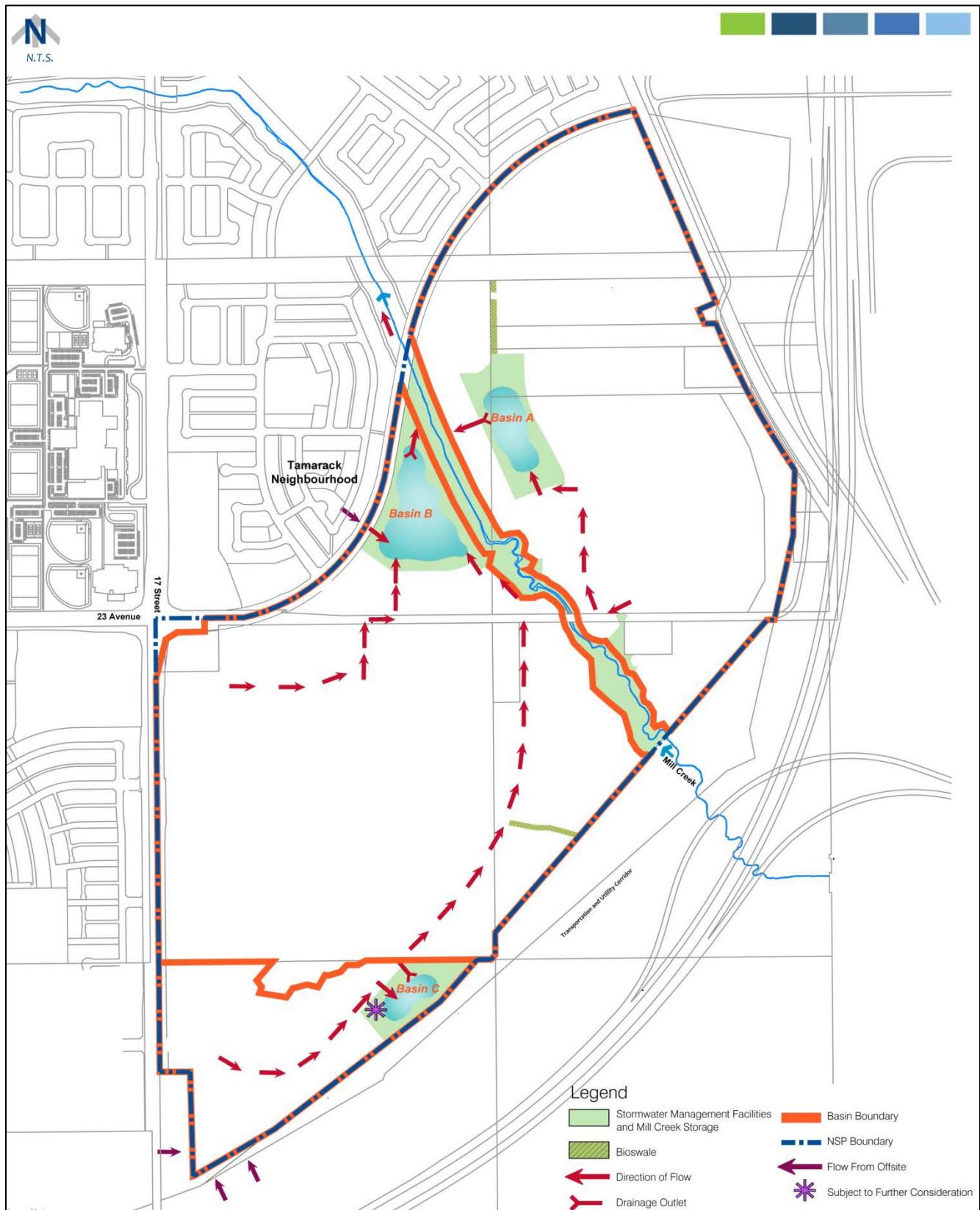
## 7.5 Shallow Utilities

Power, Gas and telecommunications services are located in bordering neighborhoods; the services will be extended as needed.

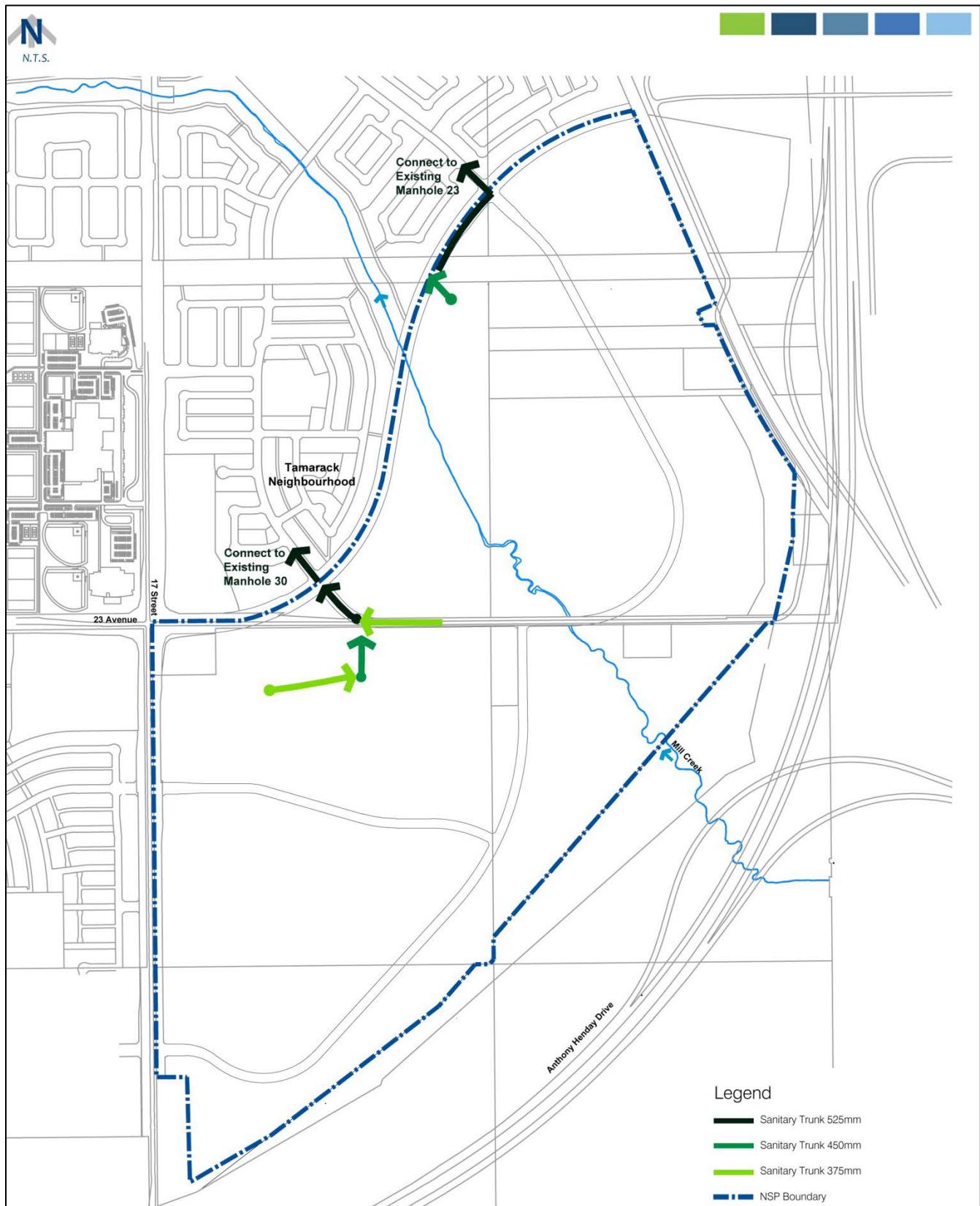
## 7.6 Power Line Right-Of-Way

There is an existing power line right-of-way bisecting the northern section of the Plan area. The northern collector road will cross the right-of-way. Prior to construction of the collector road a crossing agreement must be obtained from the right-of-way administrator. If any line alterations are required at the preferred crossing location as a result of the crossing, costs associated with the alterations shall be borne by the proponents. The proponent may also be required to obtain an easement for the purposes of crossing the right-of-way.

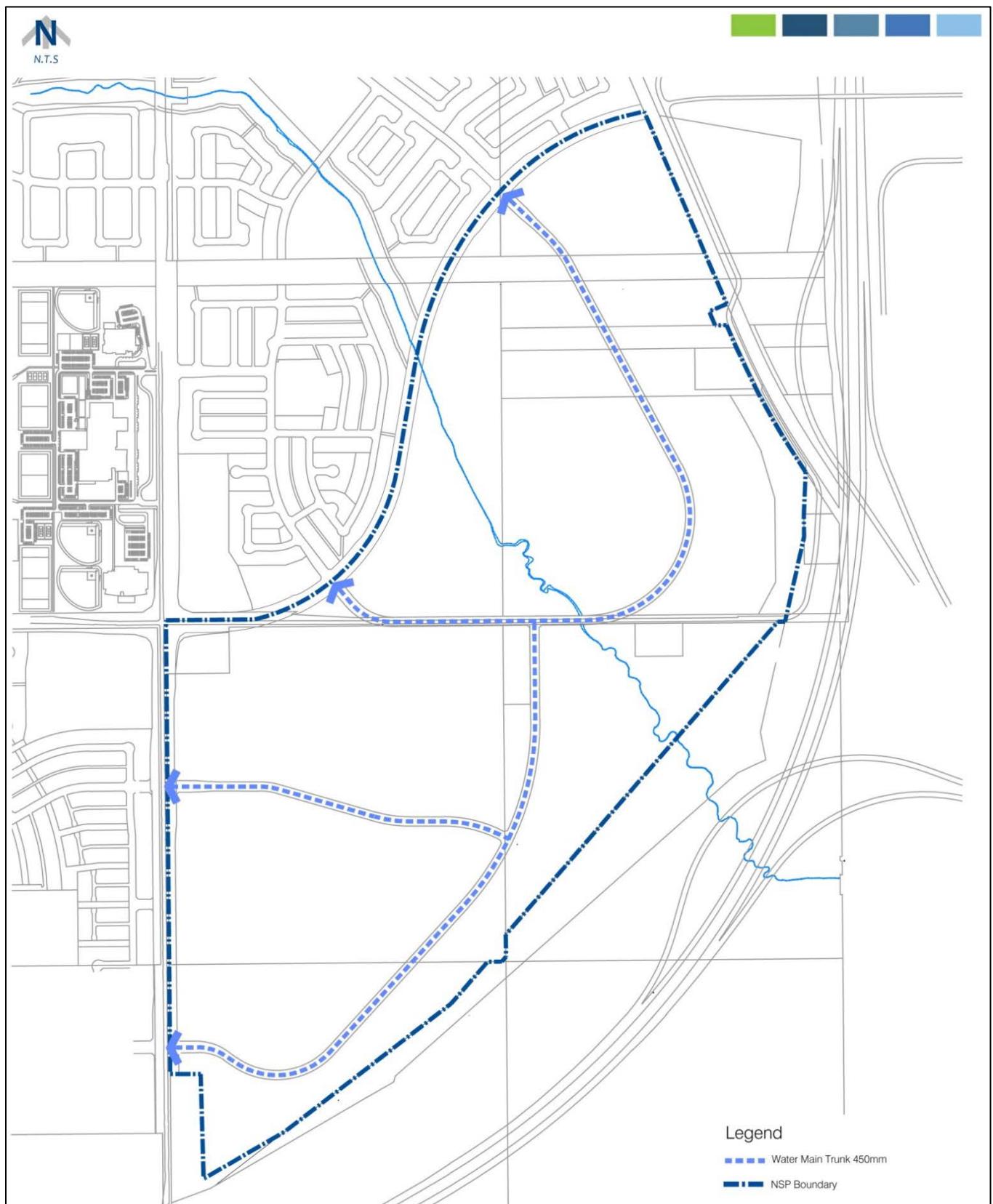
**Figure 13 - Storm Drainage Plan**



**Figure 14 - Sanitary Servicing Plan**



**Figure 15 - Water Servicing Plan**



## **8.0 IMPLEMENTATION OF THE DEVELOPMENT**

### **8.1 General**

Aster NSP shall be developed in stages in accordance with market demands, over an approximate five- to ten-year horizon. The following sections outline the recommended implementation sequence and rationale for neighbourhood unit development.

### **8.2 Staging**

**Figure 16 - Staging Plan**, page 88, illustrates the development sequence for Aster. The development represents a logical and contiguous extension of residential land use patterns that have been established in the Meadows area. Development in Aster is anticipated to be initiated in 2016 in consideration of the increased housing demand in southeast Edmonton, land absorption, and the completion of the surrounding neighbourhoods.

Infrastructure to service this neighbourhood will be extended as per detailed engineering. Particular consideration will be given to the community centre and school sites.

### **8.3 Subdivision and Rezoning**

The Aster lands are currently zoned Agriculture (AG). Rezoning and subdivision of the land will conform to the land uses as designated in the NSP. Existing uses within the Plan will either be removed or incorporated as development occurs.

Figure 16 - Staging Plan



## Appendix 1 - Statistical Calculations

### NEIGHBOURHOOD STRUCTURE PLAN LAND USE CONCEPT AND POPULATION

	Area (ha.)	% of GDA
<b>GROSS AREA</b>		
Natural Area (Environmental Reserve)	204	20.09
<i>Environmental Reserve</i>	7.15	
<i>Wetland Environmental Reserve</i>	12.94	
Pipeline & Utility Right-of-Way	2.59	
Arterial Road Right-of-Way	5.72	
<b>GROSS DEVELOPABLE AREA</b>	<b>175.60</b>	<b>100.0 %</b>
 <b>Existing Land Uses</b>		
Commercial	1.31	0.7 %
Parkland, Recreation, School (Municipal Reserve)	15.68	8.9 %
<i>Local/Pocket Parks</i>	2.49	
<i>MR Greenway</i>	0.19	
<i>CKC/School/Park</i>	13.00	
Natural Area (Municipal Reserve)	1.87	1.1 %
Institutional		
<i>Church Site</i>	1.23	0.7 %
Mixed-Use (Non Residential Portion)	2.22	1.3 %
Transportation		
<i>Circulation(20% of GDA)</i>	35.12	20.0 %
Transit Centre	NA	
Infrastructure/ Servicing		
<i>Storm Water Management Facilities</i>	13.25	7.5 %
Special Use	NA	
<b>Total Non-Residential Area</b>	<b>70.68</b>	<b>40.3 %</b>
<b>Net Residential Area (NRA)</b>	<b>104.92</b>	<b>59.7 %</b>
	<b>175.60</b>	<b>100.0 %</b>

### RESIDENTIAL LAND USE AREA, UNIT & POPULATION COUNT

Land Use	Area (ha)	Unit/ha	Units	People/Unit	Population	% of NRA
Single / Semi-Detached	87.17	25	2,179	2.8	6,102	83.1 %
Row Housing	6.17	45	278	2.8	777	5.9 %
Low-Rise/Medium Density	9.36	90	842	1.8	1,516	8.9 %
Medium to High Rise Units	0	225	0	1.5	0	0.0 %
Mixed Uses (residential uses)	2.22	90	200	1.8	360	2.1 %
<b>Total</b>	<b>104.92</b>		<b>3,499</b>		<b>8,755</b>	<b>100.0 %</b>

### STUDENT GENERATION COUNT

Public School Board	704
Elementary School	352
Junior High School	176
Senior High School	176
<b>Separate School Board</b>	<b>352</b>
Elementary School	176
Junior High School	88
Senior High School	88
<b>Total Student Population</b>	<b>1056</b>

### SUSTAINABILITY MEASURE

Population Per Net Hectare (ppnha)	49.9
Units Per Net Residential Hectare (uprha)	33.3
[Single / Semi-Detached] / [Row Housing; Low – Rise / Medium Density Housing; Medium to High- Rise Units] Unit Ratio	83% / 17%
Population (%) within 500m of Parkland	98%
Population (%) within 400m of Transit Service	100%
Population (%) within 600m of Commercial Service	58%

Presence / Loss of Natural Area Feature	Land / Water
Protected as Environmental Reserve	20.09
Conserved as Naturalized Municipal Reserve (MR)	1.87
Loss to Development (ha)	35.68

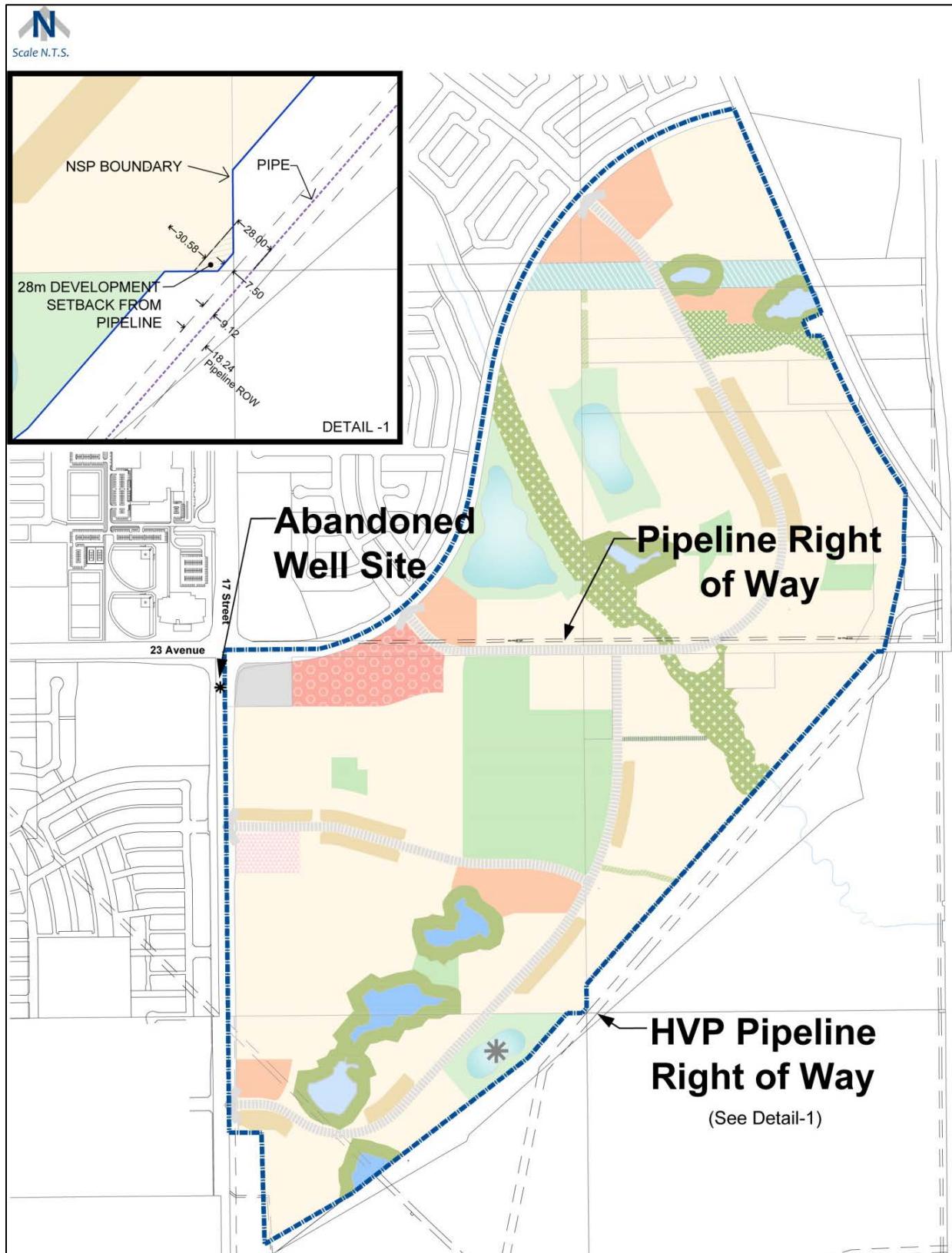
## Appendix 2 - Technical Reports

<b>Report Name</b>	<b>Consultant</b>
Community Knowledge Campus Needs Assessment (CKCNA)	MMM Group Limited
Ecological Network Report (ENR) Level 2	Fiera Biological Consulting Ltd
Geotechnical Report/ Slope Stability Analysis	J.R. Paine & Associates
Historical Resources Impact Assessment	Stantec Consulting Ltd
Historical Resources Overview (HRO)	Stantec Consulting Ltd
Hydraulic Network Analysis (HNA)	MMM Group Limited
Neighbourhood Design Report (NDR)	MMM Group Limited
Noise and Vibration Impact Assessment	ACI Acoustical.
Parkland Impact Assessment (PIA)	MMM Group Limited
Environmental Overview	Hoggan Engineering & Testing Ltd
Phase II Ecological Network Report	Fiera Biological Consulting Ltd
Risk Assessment	Doug McCutcheon & Associates, Consulting
Topographical survey through Lidar	Pals Geomatics Corp
Transportation Impact Assessment (TIA)	Bunt & Associates Engineering

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## Appendix 4 – Abandoned Well and Pipeline Site Features



## Appendix 5 – Walking Distance from Bus Route

