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REGIONAL MUNICIPALITY OF WOOD BUFFALO

ROTARY LANDS
SALINE CREEK PLATEAU
OUTLINE PLAN REPORT
SEPTEMBER 2013




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Rotary Lands - Saline Creek Plateau
Outline Plan Report

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1. ROTARY LANDS OUTLINE PLAN AREA

1.1 Location & Plan Boundary

The Rotary Outline Plan is the next step towards detailed planning and development of lands in the Saline Creek Plateau Area Structure Plan area. The Plan area comprises the eastern portion of the Area Structure Plan area. The Outline Plan boundaries are as follows:

- North Boundary - Urban development setback line along the Clearwater River Valley in the northern portion of the Saline Creek Plateau Area Structure Plan area.
- West Boundary - Undeveloped Government of Alberta and Keyano College lands
- South Boundary - Airport Road
- East Boundary - Urban development setback line along the Saprae Creek Valley in the eastern portion of the Saline Creek Plateau Area Structure Plan area.

Airport Road provides direct access to the Outline Plan area which in turn connects the Plan area to Highway 69, Highway 63, and the Regional Airport of Fort McMurray. Highway 63 links the Outline Plan area to the Fort McMurray City Centre see **Figure 1- Location and Context.**

1.2 Land Ownership

Saline Creek Development Inc. owns 82.2 ha (203 acres) of lands in the Saline Creek Plateau area. The Rotary Club of Fort McMurray leases 70.2 ha (173.5 acres) of lands from the Government of Alberta for the development of the Golf Course on these lands. Together, these lands are legally described as Plan 1320339; Block 1; Lot 1 and Plan 1320339; Block 1; Lot 2 and referred to as the Rotary Lands. Refer to **Figure 2 - Land Ownership.**

For integrated planning purposes, lands located immediately adjacent to the Rotary Lands are also included in this Outline Plan. These adjacent lands are owned by the Government of Alberta, Keyano College, and a private owner. Together these lands are identified as 'Neighbourhood 2' in the Saline Creek Area Structure Plan. A shadow plan is provided for the lands outside the Rotary lands to illustrate the continuity in land use and infrastructure planning on these lands.

1.3 Compliance with Statutory Plans

The Outline Plan for the Rotary lands is in compliance with the statutory plans and policies listed below.

1.3.1 REGIONAL MUNICIPALITY OF WOOD BUFFALO MUNICIPAL DEVELOPMENT PLAN

The lands in the Saline Creek Area Structure Plan area are designated as 'New Neighbourhoods' in the Fort McMurray Municipal Development Plan (MDP). The Rotary Lands Outline Plan is in accordance with the Municipal Development Plan's goals of Responsible development; Environmental stewardship; Economic resilience; and Home and belonging. The Outline Plan is in compliance with the following policies of the Municipal Development Plan.

- **Policy R.2.5 - Support the Development of Multi-use Corridors**

  As integrated mobility solutions are developed, efforts to consolidate infrastructure right-of-ways will be pursued as a strategy to reduce land fragmentations and environmental impacts. Where feasible, the Municipality will work with the Province and other stakeholders to support the development of Multi-use Corridors (MUCs) whereby a single right-of-way is established for roadways, pipelines, transmission lines and current utilities (Pg. 53, Municipal Development Plan, Regional Municipality of Wood Buffalo, Bylaw No.11/027, October 2011).

- **Policy U.1.3 - Promote Sustainable Development in New Neighbourhoods**

  New neighbourhoods will help accommodate population growth that cannot be accommodated in the existing built-up area. These areas will offer a range of housing choices, encouraging higher average densities than existing neighbourhoods, a mix of uses, and compact form. New neighbourhoods will also offer a range of mobility choices and be developed in a manner consistent with transit oriented development (Principles), ensuring the integration between land uses and transportation (Pg. 62, Municipal Development Plan, Regional Municipality of Wood Buffalo, Bylaw No.11/027, October 2011).

- **Policy U.2.1 - Focus on Transit**

  Within the urban area, the Municipality will emphasize the provision of regular transit to connect Emerging and New Neighbourhoods to the City Centre as a destination, and as a connector, through rapid transit to employment in the north. The Municipality will develop transit systems that are reliable, safe and convenient, as well as accessible throughout the year (Pg. 64, Municipal Development Plan, Regional Municipality of Wood Buffalo, Bylaw No.11/027, October 2011).

- **Policy U.2.2 - Promote Integration of Urban Transportation Systems**

  As the population grows, it is desirable to have more and more people select alternative modes of transportation. The Municipality will promote alternative modes of transportation by emphasizing convenience, comfort,

and efficiency. An integrated approach to transportation planning will ensure smooth interchanges between systems. Bicycle stands and lockers, bicycle accommodation on transit, sheltered transit nodes, and park-and-rides, among many other possibilities, will be considered (Pg. 64, Municipal Development Plan, Regional Municipality of Wood Buffalo, Bylaw No.11/027, October 2011).

- **Policy U.3.1 - Develop an interconnected and accessible green network**

  As the City Centre and surrounding neighbourhoods grow, the Municipality will develop connections between and within these neighbourhoods through a green network of trails connecting built-up areas, parks and natural areas. The green network will accommodate a variety of active transportation options including walking, cycling, cross country skiing, and in-line skating. The green network will also connect residents and places of employment, encouraging its use as a means of getting to work (Pg. 66, Municipal Development Plan, Regional Municipality of Wood Buffalo, Bylaw No.11/027, October 2011).

1.3.2 SALINE CREEK PLATEAU AREA STRUCTURE PLAN

In July 2012, an amendment to the Saline Creek Plateau Area Structure Plan (Bylaw No. 07/058) was approved and adopted by Bylaw No. 12/028. The Rotary Lands Outline Plan is in compliance with the community vision and planning principles articulated in the Area Structure Plan. This Outline Plan also meets the 'Outline Plan Requirements' listed in the Implementation section of the Area Structure Plan.

1.3.3 FORT MCMURRAY REGIONAL AIRPORT AREA STRUCTURE PLAN

The Fort McMurray Regional Airport Area Structure Plan Bylaw No. 12/009 was adopted in April 2012. The Fort McMurray Regional Airport Area Structure Plan recommends that in order to maximize protection to the airport and minimize conflict, residential development is to be restricted to the areas beyond the NEF 25 contour. The south-eastern portion of the Outline Plan falls within the NEF 25 contour and therefore, the above restrictions are applied to this area. As a result of these restrictions, no residential development is planned for this area. This area will accommodate airport commercial development, a golf course, and a stormwater management facility as shown in the Saline Creek Plateau Area Structure Plan.

The Fort McMurray Regional Airport Area Structure Plan also requires the stormwater management facilities in the vicinity of the airport to be designed and planned to mitigate the negative impact on aviation from hazardous birds. Detailed design for the storm water ponds will be in accordance with the Migratory Bird Mitigation Plan for Proposed Stormwater Pond Development at Rotary Lands. (EnviroMak Inc., February 2013).

2. DEVELOPMENT CONCEPT OVERVIEW

The development concept for the Rotary lands is in compliance with the Planning principles articulated in the Saline Creek Plateau Area Structure Plan. The Outline Plan is also in conformance with the Area Structure Plan's Vision for the sustainability in the Plan area. The Rotary Lands Outline Plan will also identify the design principles to achieve high standards of architectural, urban, and sustainable development in the Outline Plan area.

The Rotary Lands Outline Plan will provide the next level of detail towards the development of these lands. This plan will be based on the detailed technical and environmental studies. A list of these studies is included in the **Appendix E - List of Technical Studies**. The Outline Plan articulates the architectural and urban design principles which in turn will guide the built form and public space development in the Outline Plan area. General design guidelines for the proposed districts in the Plan area are also included in this document. The Rotary Lands Outline Plan also provides a direction for incorporating sustainability measures and energy efficient practices to minimize environmental impacts of the urban development. The developer/s in the Outline Plan area will be responsible for creating detailed design guidelines based on the direction provided in this document.

The Outline Plan area also includes the lands immediately adjacent to the Rotary lands. The development in the Rotary Lands Outline Plan area will be compatible to that of in the Keyano College Lands Outline Plan area; so that both the developments will complement each other.

2.1 Mix of Land Uses

Residential development, Airport Commercial development and a 18-Hole Championship Golf Course are the primary land uses in the Outline Plan area. **Figure 4 - Land Use Development Concept** shows the proposed land use district designations for the Rotary Lands Outline Plan area. The Golf Course accounts for approximately 30% of the total Outline Plan area and acts as a focal point for the community.

Residential development in the Plan area includes low and medium density housing development. Single family detached and semi-detached homes are the dominant housing forms of the low density development

Medium density residential sites are located along collector and arterial roads. A site abutting the arterial road along the west boundary of the Plan area across from the Village Centre, a site adjacent to the stormwater management located to the west of the Golf Course, and one of the three medium density sites along the Airport Road will accommodate apartment housing. Whereas, the remainder of the medium density sites will accommodate less dense forms of the multi-family development. This multi-family

development may include triplexes, fourplexes, town homes, stacked town homes, row housing, and clustered housing.

Street oriented development is highly encouraged in the Outline Plan area. A wide range of housing product will lead to an inclusive community that meets housing needs of the residents of Fort McMurray by accommodating diverse range of income and age groups.

The proposed densities for the Outline Plan area are in compliance with the approved Saline Creek Plateau Area Structure Plan Amendment (Bylaw No. 12/028) and as follows:

Low Density Residential	18 Units/Ha
Medium Density Residential	45 Units/Ha

The proposed 18-Hole Golf Course not only acts as a focal point and a prime community feature; but also contributes to the community identity. The Golf Course is located on the existing muskeg lands and acts as a central recreational amenity for the development in the Outline Plan area as well as for the surrounding neighbourhoods. The water features on the Golf Course form an integral part of the area's stormwater management system as well as provide for irrigation needs on the Golf Course. The Golf Course site also presents an opportunity for the retention of existing vegetation where feasible.

The Airport Commercial development sites are located in the most easterly portion of the Outline Plan area. This development will be accessible by Airport Road and the future Saline Creek Parkway. This site will provide a wide variety of commercial development opportunities. Development on these sites will accommodate offices and businesses that could benefit from proximity to the Airport, and airport oriented services for the travellers. It may also include community oriented commercial use/s appropriate to the district and location, and/or the Golf Course related retail and business commercial such as hotel accommodation.

Residents' day to day shopping needs will be largely fulfilled by the Village Commercial and the Regional Commercial developments located centrally in the Saline Creek Plateau area and to the immediate west of the Rotary Lands Outline Plan area.

The recreational complex and the Transit Centre for the Saline Creek Plateau are also conveniently located to the immediate west of the Outline Plan area.

In addition to the centrally located Golf Course, park sites, and green links interspersed throughout the Plan area provide opportunities for active and passive recreation and enhance walkability and pedestrian connectivity in the Plan area. A school site is also located in the Outline Plan area. The residential neighbourhoods of the Outline Plan area are connected to the public amenities, transit, and park system by a multi-modal transportation network which includes the multi-use trail network, transit network, and vehicular road network.

2.2 Golf Course

A centrally located 18-Hole Championship Golf Course is the prime feature of the community. The Golf Course also acts as a recreational amenity for the surrounding neighbourhoods, the community at large and the region. The majority of the Golf Course lands are located to the south of Saline Creek Parkway, between the north and south residential developments of the Outline Plan area. This portion of the Golf Course accommodates fifteen (15) holes. The remainder of the Golf Course with three (3) holes is located to the north of the future Saline Creek Parkway. A pedestrian /golf cart crossing is proposed as an underpass that would be either a steel-plate or a square concrete box culvert. Detailed engineering design for this underpass, will be completed with the design of the Golf Course.

This Golf Course is located on the existing muskeg lands and therefore, transforms the development's unsuitable lands into a public amenity. Where feasible, trees will be preserved. A vegetation buffer will be maintained where possible along the periphery of the Golf Course, separating it from the surrounding residential development. The design approach for the Golf Course development will strive to minimize environmental impact and encourage conservation of existing natural features on the site.

Public pedestrian access to the Golf Course will be restricted during the golfing season due to the safety concerns. For the same reason, a walking trail (along the periphery at the Golf Course) can not be provided. However, view points are introduced at periodic locations along the boundary of the Golf Course. However, there is a potential for public access to the Golf Course during winter months to allow for the winter recreation activities such as cross country skiing if feasible.

2.3 Multi-Modal Transportation

The Outline Plan adopts a modified fused grid road network system in compliance with the Saline Creek Plateau Area Structure Plan. The Outline Plan also incorporates hierarchy of road ways. This transportation network will lead to enhanced connectivity and convenience in the transport of people and goods. A modified fused grid road network creates multiple routes to a single destination and therefore mitigates traffic congestion situations. Hierarchy of roads ensures efficient transportation and contributes to the safety on streets. **Figure 3 - Land Use Development Concept**, illustrates the local road network and block subdivision layout for the Rotary lands.

The regional trail along the north and south boundaries of the Outline Plan area forms an integral part of the pedestrian and bike network. In addition, multi-use trails and pedestrian linkages are proposed throughout the community providing convenient and walkable accesses to the public amenities, recreational facilities, parks and open spaces in the Outline Plan area

and surrounding neighbourhoods. Pedestrian safety will be one of the prime considerations in street design and can be achieved through implementing various urban design tools. Traffic calming measures may include and not be limited to the provision of cross walks, separated sidewalks, signalised intersections, and flaring of or bulb outs at intersections.

Public and private transit will serve the development and be accommodated on collector roadways in the Plan area. Bus routes will be located within a walkable distance of residential development. The Transit Centre located centrally in the Saline Creek Plateau area is also easily accessible to the Rotary lands development via road and integrated trail and walkway networks.

2.4 Secondary Suites

'Housing supply and affordability' continues to be a pressing concern for Fort McMurray. The population of Fort McMurray has been dealing with this situation by creating secondary suites, mostly in the form of basement suites. These secondary suites create a supply of rental properties and act as *mortgage helpers* for the home owners.

Secondary suites in the Outline Plan area are encouraged in the form of basement suites or garage top suites. A garage top suite is where the suite is in a separate accessory building in conjunction with a garage with rear lane access. Corner lots are the most suitable for the garage top suites.

Secondary suites will be accommodated on the lots that meet the lot size, access, and additional parking requirements as illustrated in **Appendix C - Lot Development Typology Options.** Low Density residential development in the Outline Plan area will be in compliance with the Lot Development Typology Options and regulations of the Land Use Bylaw. Development and allocation of the secondary suites will be regulated through the development permit process and the bylaws.

Builders/home owners will be required to indicate garage locations and minimum footprint on the plot plan to be submitted to the Developer. This requirement will be included in the Design Guidelines that will be prepared for the development. This will form a part of the design control process for this development. Overall design of a garage top suite will also require an architectural review and approval through the design control process.

The design of the accessory building accommodating a garage top suite will follow the same or complementing architectural styles and vocabulary as that of the main building. The roof lines and slopes for these accessory buildings will be in compliance with and/or complimentary to the architectural style of the main building. Both the front and rear building facades of the accessory building should be aesthetically pleasant and showcase high standards of architectural design. Building setbacks as indicated in the lot typologies shall be followed while planning for the garage top suites. Permitted accessory building size as per the Regional Municipality of Wood Buffalo land use bylaw is 60 sq.m. Maximum building height for an accessory building including a garage top suite should be limited to 7.2 m and thus be specified in the newer revised land use districts of land us bylaws. The upper storey should be stepped back from the backyard open space and limited to 70% of the at grade footprint. Balconies should be located to face the lanes.

3. DESIGN PRINCIPLES

Development in the Outline Plan area will be based on the Design Principles discussed below. These design principles are divided into three areas; i.e., Urban Design, Architecture, and Sustainability. General design guidelines for the Outline Plan Districts (included in this document) and detailed design guidelines to be developed by each respective developer are to be based on these Design Principles articulated in this section.

3.1 Urban Design Principles

The urban design principles below will encourage diversity, walkability, connectivity in the Outline Plan area while creating and enhancing the sense of place through climate responsive urban and built form.

3.1.1 DIVERSITY & INCLUSIVITY

Objective 1: Encourage a mix of housing products and supporting land uses that meet residents' day to day needs.

Objective 2: Create a diverse and balanced community inclusive of all socio-economic and age groups.

The Outline Plan area encompasses three (3) preliminary land uses including Residential, Airport Commercial and a Golf Course. The residential land use will accommodate low and medium density residential with a wide range of housing products. Development of single family, semi-detached homes, street oriented housing, townhouses, row housing, and walk-up apartments is anticipated in the Outline Plan area. The provision of secondary suites will create rental opportunities in the Outline Plan area. This will contribute towards fulfilling diverse housing needs of the residents of Fort McMurray. A variety of housing forms will accommodate diverse income, ethnic, and age groups in the community.

Diversity in building styles is encouraged through compatible architectural styles, and building materials and colours.

3.1.2 CONNECTIVITY

Objective 1: Create a well-connected road and multi-use trail network for efficient and safe transport of people and goods.

A modified grid road network makes multiple roads available leading to a single destination. This helps in distributing vehicular traffic within the Outline Plan area and avoiding traffic congestions and delays. Hence, a fused grid road network along with the road hierarchy enhances connectivity and efficiency in commuting.

Neighbourhoods within the Outline Plan area along with a school, park sites, a Golf Course, and public amenities will be easily accessible by both vehicular and pedestrian linkages. Strong pedestrian and vehicular connections link the development within the Outline Plan area to the Village Centre, recreation complex, and the Clearwater River and Saline Creek valleys. The multi-purpose trail network within the Plan area links into the regional trail network.

3.1.3 WALKABILITY

Objective 1: Create a healthy community where people can walk and/or bike to work, schools, shops, transit, and recreational facilities.

All streets in the Outline Plan area will be pedestrian and bike friendly. Block sizes smaller than 200 metres in length enhance connectivity and walkability. Walkways should be incorporated in neighbourhood planning to break the continuity of blocks that are longer than 200 metres.

Wide sidewalks and multi-purpose trails connecting focal points in the community enhance walkability of the area. Street furniture and amenities including benches, street lights, bike racks, and lockers encourage residents to walk and/or bike. Barrier free design should be accommodated throughout the community. Safety on the roads will be encouraged through pedestrian oriented lighting in the public spaces and land use mix that creates people's presence in and around the public spaces. Street oriented development adds to the safety and therefore walkability of the area. Safety measures will include and not be limited to crosswalks, flaring or bulbing of corners, traffic lights, wide sidewalks, boulevard separations, and appropriate signage.

3.1.4 SENSE OF PLACE

Objective 1: Create a community character/ identity through building and urban design.

A sense of place for the Outline Plan area will be created through urban design of public spaces and building architecture. Compact urban form with walkable block sizes and a modified fused grid network, a multi-purpose trail network, wide sidewalks, focal points, parks and connecting walkways, human scale building forms, and vibrant building colour palette together contribute towards creating a community character and identity.

Development in the Rotary Lands Outline Plan area will be diverse, vibrant, and promote healthy lifestyle. The Golf Course is a unique feature of the Outline Plan area and adds to the character of the community.

3.1.5 WINTER CITY APPROACH

Objective 1: Extreme climate conditions can be addressed through site planning, architectural design and landscaping.

Fort McMurray being a winter city experiences temperatures below -10°C for major part of the year. Weather influences social life in a public place/s to a great extent. Therefore, a climate responsive planning and design approach is very important in the Outline Plan area.

A climate responsive development can be achieved through site planning. Building and open space orientation can maximise exposure to the sun and provide protection from wind and snow. Landscaping can be incorporated in site planning and urban design of open spaces to create wind screens. Use of glass can provide insulation against the colder temperatures while maintaining visual connection with the outdoors. Outdoor winter activities such as skating, walking,

and cross-country skiing should be encouraged through the utilization of open space system. Use of vibrant building colours can make cities look lively in otherwise white dull winters.

3.2 Architectural Design Principles

Objective 1: Create diversity, and a sense of place through architecture.

Objective 2: Promote sustainability and climate sensitive design practices.

Building architecture is not only important for its aesthetical value; but also because every building acts as an envelope for and shapes the public space around it, contributing to the public realm.

A variety of housing styles and forms are encouraged throughout the residential neighbourhoods to ensure that the diverse housing needs of population are met. Housing density in the Outline Plan will range from low density single family to medium density residential development. Low density housing forms will include single family residential with front or rear garages, and semi-detached homes. **Lot Development Typology Options** are developed for the single family lots in the Outline Plan area. Please refer to **Appendix C**. These lot development typologies are developed to allow for additional parking requirements associated with the secondary suites on single family lots. Low Density residential (current R1: Single Detached Residential district and R1-S: Single Family Small Lot Residential land use district) lots shall be in compliance with these Lot Development Typology Options developed for this Outline Plan Area.

Medium density housing may include row housing, stacked town homes, clustered housing, and walk-up apartments. Street oriented residential development is highly encouraged in the Outline Plan area.

Climate sensitive site planning and building design can be incorporated in the development of commercial facilities. For example, buildings should be designed such that more windows and glazed surfaces are placed on south façades of the buildings. Building massing and landscaping can create wind screens; sheltering open spaces such as plazas and sidewalks from gusty winds, rain, and snow.

Where feasible, sustainable initiatives and energy efficient building materials and practices should be incorporated in the development of the Outline Plan area.

3.3 Sustainability Principles

Objective 1: Encourage use of sustainable practices in urban planning and design, transportation planning, and servicing infrastructure in the proposed development.

Objective 2: Promote use of transit and improve walkability by creating safe and convenient pedestrian and bicycle (multi-purpose) trail network.

Objective 3: Encourage a mix of land uses and a wide variety of housing type to meet day to day needs and diverse housing needs of residents respectively.

Objective 4: Where feasible and efficient, allow for the use of solar and geo-thermal energy for heat and electricity generation.

Objective 5: Encourage use of energy efficient materials, construction practices, appliances and plumbing fixtures.

Objective 6: Environmental conservation through retention of natural features where feasible, storm water management, and xeriscaping and use of native plants in landscaping.

As a green field development, the Outline Plan area offers an opportunity to incorporate sustainable and energy efficient practices in the development from early development stages. These sustainable initiatives may include and not be limited to compact and walkable urban form with smaller block sizes and modified grid road network, green and open space network interspersed throughout the community, easy access to transit, climate sensitive site planning, and use of energy efficient building materials, appliances and plumbing fixtures, recycled materials, and technology such as solar water heating, geo-thermal, and photovoltaic panels. The proposed mix of land uses and housing types will promote inclusivity and diversity in the Outline Plan area. Day to day recreational, school, and shopping needs of the residents will be served in the Plan area and close proximity. A variety of housing types will serve different income and age groups.

The Outline Plan promotes energy conservation through enhanced walkability and efficient public transit throughout the Outline Plan area. Public transit will provide connection to the surrounding development including the Village Centre, recreation complex, Transit Centre, and schools in the Saline Creek Plateau Area Structure Plan area, Gregoire Park, MacKenzie Park, the Regional Airport, the City Centre, and job sites. The Transit Centre may include facilities such as Park ‘n’ Ride. This in turn will reduce the use of private vehicles for fulfilling day to day commuting needs of the residents and therefore reducing the green house emission. A live-work-play environment is promoted in the Outline Plan area through the creation of a mixed use development.

To help maintain the integrity of the eco-system and minimize the impact of urban development, environmentally sensitive areas will be maintained through the open space and environmental reserve dedication where possible. Xeriscaping and use of native plant material in landscaping will be highly encouraged in the Plan area.

4. LAND USE DISTRICTS

4.1 Airport Commercial District

4.1.1 OBJECTIVES

- **Provide for the airport oriented commercial and business industrial establishments.**

4.1.2 PURPOSE

The Airport Commercial District is accessed by Airport Road and future Saline Creek Parkway. Location of the site along Airport Road, in a close proximity of the Fort McMurray Regional Airport, makes it suitable for the Airport Commercial District. Also, the district is located abutting the 18-Hole Golf Course and well connected to the residential neighbourhoods in the Outline Plan area by the vehicular, pedestrian and bike network.

This district will include commercial office use and business-industrial commercial uses that can benefit from convenient access to the Regional Airport. The Airport Commercial District will also allow for commercial establishments that will serve the travellers to and from the Airport. These commercial uses may include establishments such as restaurants, service stations, car rental businesses, other vehicle services, logistics, offices, and hotels. The district may also accommodate golf course related businesses and community oriented convenience retail outlets.

While developing the Airport Commercial lands within the Outline Plan area, their proximity to the Regional Airport should be taken into consideration.

4.1.3 DESIGN GUIDELINES

- Entryway to the Airport Commercial District from Airport Road and future Saline Creek Parkway should be well defined and inviting.
- Pedestrian safety measures such as sidewalks, crosswalks, traffic control signals and signage, barrier free design, and adequate level of lighting should be incorporated in the development.
- Free standing and/or clustered development will be allowed in this district.
- Building front facades, high visibility facades, and facades visible from Airport Road and future Saline Creek Parkway should incorporate higher quality architectural treatments.
- Surface parking lots and service areas located to the side and/or rear of the building are highly encouraged.
- Surface parking lots should be well landscaped. Use of a landscaped buffer is required where surface parking is visible from the street.
- Landscaping islands are to be incorporated in parking lots to break the continuity of parking expanses.
- Use of parkades will be considered in this district. Parkades and/or structured parking

should be designed with active street level facades.

- Use of quality building materials and bright colours is highly encouraged.
- Climate responsive site planning and building design approach is recommended in this district.
- Given the high visibility of the subject site from Airport Road and Saline Creek Parkway, high architectural standards are encouraged.
- Garbage collectors/dumpsters in this area should be well enclosed and/or covered, as they can attract bird hazardous to airport operations.
- Developers will create detailed design guidelines for the development in this district.

4.2 Low Density Residential District

4.2.1 OBJECTIVES

- **Provide low density (18 units/ha) housing forms that address Fort McMurray's residential needs.**
- **Allow for the secondary suites to create more affordable housing and rental opportunities.**
- **Encourage sustainable buildings that offer green technologies and include measures to reduce a building's ecological footprint in terms of energy consumption.**

4.2.2 PURPOSE

The Low Density Residential District will comprise of single family detached and semi-detached housing with front attached and rear garages. The lots will be designed as per the plot plans illustrated in **Appendix C - Lot Development Typology Options** and in compliance with the Municipality's Land use Bylaw. Secondary suites will be accommodated within the Low Density Residential District.

Street oriented housing will be encouraged in this district. This will enhance the safety in the neighbourhoods as there will be more eyes on the streets. The street oriented development will also add to the walkability and pedestrian friendliness of the neighbourhoods.

The development in this district will be connected to the community amenities through the regional and multi-purpose trail network, and continuous sidewalks.

The Regional Municipality of Wood Buffalo is currently updating their existing land use bylaw. However, it is anticipated that the revised bylaws will closely follow the existing residential bylaws of the Municipality and will recommend new regulations to support the lot typologies for R1: Single Detached Residential District and R1-S: Single Family Small Lot Residential District. The updated land use bylaw should fully identify applicable development and building standards and measures. The lot development within the Low Density Residential District (R1: Single Detached Residential District and R1-S: Single

Family Small Lot Residential District) shall adhere to the **Lot Development Typology Options** as included in the **Appendix C** of this Outline Plan. Allocation and development of the secondary suites will be regulated through the development permit process. The Municipality will need to ensure the enforcement of the development permits and land use bylaws. The development will follow the density requirements as set forth in the municipal bylaws for the applicable land use (or Saline Creek Area Structure Plan).

4.2.3 DESIGN GUIDELINES

- Developers will prepare detailed design guidelines for residential development in this district.
- Developer's design guidelines will require a builder/homeowner in this district, to indicate the location and footprint of a garage on the plot plan. This information will be a requirement for the architectural review and approval process specified in the design guidelines for this development.
- Contemporary heritage architectural styles including prairie, craftsman, tudor, arts and crafts, and similar styles will be promoted in this district.
- High quality building finishing materials and bright building colour palette are highly encouraged. Building finishing materials may include superior vinyl siding, hardiboard, stone, manufactured stone, stucco, and timber.
- Stone and/or timber treatment/s should be used on front and high visibility building facades.
- Community activity nodes, focal points and recreational opportunities should be created throughout the district, where feasible.
- Pedestrian friendly development is encouraged by incorporating, sidewalks, landscaped boulevards, pedestrian oriented lighting, street furniture, and street oriented building forms.
- Rear building elevations will be designed with well proportioned building features including windows, doors, balconies, and patios.
- Design guidelines for the garage top suites shall be based on the general design direction provided in **Section 2.4 – Secondary Suites** and **Appendix C – Lot Development Typology Options** of this document.

4.3 Medium Density Residential District

4.3.1 OBJECTIVES

- **Provide a diverse range of Medium Density (45 units/ha) housing forms, that address diverse residential needs of Fort McMurray.**
- **Encourage sustainable buildings that offer green technologies, and include measures to reduce a building's ecological foot print in terms of energy consumption.**

4.3.2 PURPOSE

The Medium Density Residential District will include row housing, townhouses, stacked town houses, clustered housing, and three (3) to four (4) storey walk up apartments. Street oriented housing development will be highly encouraged in this district, creating enhanced sense of safety in the area.

A medium density site surrounding the stormwater management facility to the east of the Golf Course will accommodate three (3) to four (4) storey walk-up apartments which will provide views of the Golf Course. One of the three (3) medium density sites along Airport Road will also be developed as a walk-up apartment site. Medium density sites are also located along the west edge of the Outline Plan area. The southern most area of these sites will be allocated for the apartment development.

The Medium Density Residential development will be connected to the community amenities through the regional and multi-purpose trail networks, continuous sidewalks, and by public and private transit.

Existing land use bylaws are currently being updated by the Regional Municipality of Wood Buffalo and should fully identify applicable development and building standards and measures. However, it is anticipated that the revised bylaws will closely follow the existing residential bylaws of the Regional Municipality of Wood Buffalo. The development will follow the density requirements as set forth in the Municipal bylaws for the applicable land use (or Saline Creek Plateau Area Structure Plan).

4.3.3. DESIGN GUIDELINES

- Developers will develop detailed design guidelines for multi-family residential development in this district.
- Contemporary heritage architectural styles will be promoted in this district
- High quality building finishing materials and bright building colour palette are highly encouraged. Building finishing materials may include superior vinyl siding, hardiboard, stone, stucco, and timber.
- Stone and/or timber treatment/s should be used on front and high visibility building facades.
- Community activity nodes and recreational opportunities should be integrated throughout the district.
- Pedestrian friendly development is encouraged by incorporating, sidewalks, landscaped boulevards, pedestrian oriented lighting, street furniture, and street oriented building forms.

4.4 Golf Course

4.4.1 OBJECTIVES

- **Provide recreational opportunities to the residents of the Outline Plan, the surrounding area and the region.**

- **Allow for the development of a 18- Hole Championship Golf Course in the Outline Plan area.**

4.4.2 PURPOSE

A 18-Hole Championship Golf Course will be located in the Rotary Outline Plan area in compliance with the Saline Creek Plateau Area Structure Plan. This Golf Course will be located on the muskeg lands in the Outline Plan area, transforming the development's unsuitable lands into a recreational amenity for the residents of the Outline Plan area, the community at large, the region and visitors.

The Golf Course is accessed by Saline Creek Parkway and Airport Road. Public access to the Golf Course will be prohibited during the golfing season; however potential of cross country skiing on the site in winter months may be considered. View points will be incorporated periodically along the boundary of the Golf Course for residents to enjoy the scenery on the Golf Course. Walking trails along the periphery of the Golf Course are intentionally avoided for safety reasons. Water bodies provided throughout the Golf Course area are not only a design and irrigation feature of the Golf Course but also an integral part of the stormwater management system for the Saline Creek Plateau.

Currently these lands are currently assigned as UE - Urban Expansion District. A golf course is a discretionary use within this district. An appropriate district will be assigned to the golf Course lands in accordance with the Regional Municipality of Wood Buffalo's Land Use Bylaw.

4.5 Parks & Recreation District

4.5.1 OBJECTIVES

- **Provide land for the development of open space, parks, walkways, and recreation facilities to meet the active and passive recreation needs of this community and its adjacent neighbourhoods.**
- **Provide interspersed parks and open spaces within the Outline Plan area that offer recreational opportunities to the residents through the dedication of Municipal Reserves.**

4.5.2 PURPOSE

The Parks and Recreation District forms a part of the open space system for the Plan area, along with the Public Service District and Public Utility Lots. The open space network of the Outline Plan will provide opportunities for active and passive recreation to the community. It will also link neighbourhoods and public amenities in the Outline Plan area to its surrounding development by the provision of walkways and multi-purpose trails.

The open space system will include the parks, open spaces, stormwater management facilities, 30 metre highway buffer, firesmart setback, environmental reserves and regional pathway

corridors associated with the Public Service District and the Public Utility Lots.

In addition to the ponds on the Golf Course property, the Outline Plan accommodates two additional stormwater management facilities in the Outline Plan area. These facilities along with the Golf Course ponds will maintain necessary stormwater flows and water quality of the natural water bodies in the area, and be constructed to provide active and passive recreation opportunities.

Environmental Reserve will be designated in accordance with the Municipal Government Act. This will protect the Clearwater River and its valley slopes, and natural areas associated with Saline Creek.

Figure 4 – Open Space System illustrates the distribution of open spaces and their linkages to the local destinations throughout the Plan Area and adjacent neighbourhoods.

4.6 Public Service District

4.6.1 OBJECTIVES

- **Provide land for the development of schools in the Outline Plan area.**
- **Provide school sites in the Outline Plan area through the dedication of Municipal Reserve.**

4.6.2 PURPOSE

The Outline Plan area accommodates a site for a shared elementary – junior high school, located in the west-central portion of the Plan area. The school site will be a part of the open space system and provide recreational opportunities for residents of the Outline Plan area and surrounding neighbourhoods.

The school site is conveniently located abutting a collector roadway allowing for an easy access to the transit services, school buses and student drop off zones. Convenient pedestrian linkages will be provided in the form of connecting walkways, wide sidewalks, and multi-purpose trails.

4.7 Trails & Pedestrian Network

4.7.1 OBJECTIVES

- **Enhance connectivity within the community and to the adjacent neighbourhoods.**
- **Provide a walkable and pedestrian friendly multi-use trail network.**

4.7.2 PURPOSE

Community amenities in the Outline Plan area such as commercial, retail, schools, parks, and transit will be linked together and to the surrounding neighbourhoods by trails and pedestrian networks interspersed throughout the area. This network will include multi-purpose trails, naturalized trails, walkways, and sidewalks; providing opportunities for active and passive recreation. This trail network will in turn link into the Municipality's regional trail network and together will serve the Outline Plan area and its surrounding communities more efficiently.

A 30.0 m setback from the top of bank provides a firesmart break. A 3.0 m wide regional trail, runs along the periphery of the Outline Plan area, providing viewing opportunities into the Clearwater River and Saprae Creek valleys. The regional trail along with the proposed 3.0 metre multi-use trails will accommodate pedestrians, bicyclists, and in-line skaters in both directions. Where possible cross country skiing can also be accommodated within the trail network.

4.7.3 DESIGN GUIDELINES

- Park furniture including benches, bike stands, trail maps, and directional signage should be provided along the multi-purpose trails.
- Pedestrian cross walks should be included where a trail intersects with a vehicular roadway.
- Pedestrian scale lighting is encouraged at high activity nodes of the trail network.

5. TRANSPORTATION

5.1 Roadway Network

The roadway network in the Outline Plan area consists of collector and local roadways. A divided arterial road along the west boundary of the Rotary Outline Plan; will be one of the major accesses to the Plan area along with the future Saline Creek Parkway and Airport Road. An overall map of this network is provided in **Figure 5 - Transportation Network** and the corresponding road cross sections are provided in **Appendix B.2 - Road Cross Sections.** It is to be noted that the "collector" designation to the roadways is based on the Regional Municipality of Wood Buffalo's criteria for the roadways.

5.1.1 COLLECTOR ROADWAYS

The character of the collector roads in the Outline Plan area changes with respect to the surrounding development. The collector road/s abutting public amenities such as schools and multifamily developments will accommodate a 3.0 m wide multi-purpose trail to encourage walkability and safety of pedestrians. Collector roads may accommodate on street parking lane/s in either or both directions. Refer to **Appendix B.2 - Road Cross Sections.**

5.1.2 LOCAL ROADWAYS

The local roadway system will provide efficient access to all individual block/lot developments while discouraging short cutting between collector and arterial roads. Sidewalks are encouraged to accommodate pedestrians on the local roads. Refer to **Appendix B.2 - Road Cross Sections.**

5.1.3 LANES

In order to provide a variety of housing products including housing with rear garage, laneways will be incorporated into residential developments. Provision of lanes will allow for rear access garage product and garage top secondary suites and encourage more street oriented development. The lanes are expected to have a 7.0 m right of way and in some instances storm sewers will run along the centreline to collect storm runoff.

5.2 Pedestrian & Bicycle Network

The pedestrian and bicycle network will be interspersed throughout the Outline Plan area and also be an integral part of the street Network. Refer **Figure 7 - Pedestrian & Bicycle Network**. Bicycle and pedestrian friendly streets and supportive infrastructure leading to an efficient public transit will encourage higher utilization.

Collector roadways in the Outline Plan area are designed with designated sidewalks that are separated from the vehicular traffic by boulevards. Where abutting a community amenity, a wider sidewalk may be provided. Three metre wide multi-purpose trails are provided along the collector roads abutting public amenities and multi-family housing. These multi-purpose trails

will accommodate pedestrians, bicyclists, and in line skaters, and will be separated from the moving and parked vehicles on the roadways by the provision of treed boulevards. Local roadways will also accommodate sidewalks for convenience of pedestrians. The pedestrian and bicycle network will provide safe and convenient linkages to the public amenities throughout the Outline Plan area and its surrounding neighbourhoods. It will also provide opportunities for active and passive recreation and encourage a healthy lifestyle in the community.

The pedestrian and bicycle network in the Outline Plan area, in turn will link into the regional trail and transit networks, providing connections to the surrounding communities and the open space network. Please refer to **Appendix B.2 - Road Cross Sections.**

5.3 Transit

Use of transit is highly encouraged in the Outline Plan area as this will improve connectivity and access to the City Centre, the Regional Airport, and job sites to the north. Use of transit will also reduce traffic congestion and environmental impacts due to the green house gas emissions associated with private vehicles.

Both public and private transit services will be provided in the Outline Plan area and accommodated on the collector roadways. The arterial road, running north-south along the west boundary of the Outline Plan area will accommodate a dedicated bus lane in each direction. All bus stops will be located within a walking distance (400 to 800 metre) of residential development. Refer **Figure 7 - Potential Transit Route**.

The Outline Plan area will benefit from the Transit Centre proposed in the Village Centre located along the arterial road abutting the west boundary of the Plan area. The **Transit Centre** is a facility that will accommodate multiple bus bays, sheltered bus stops, waiting areas and rest rooms and changing facilities for the transit staff. The Transit Centre will be developed in stages, as the development in the Saline Creek Plateau progresses. This Transit Centre is conveniently located amongst the public amenities such as a recreation complex, schools, retail and regional commercial and hence conveniently connects the neighbourhoods of the Outline Plan to the Village Centre of the Saline Creek Plateau.

In addition to the Transit Centre, transit nodes will be developed in the Village Centre area. The **transit nodes** are the areas within the road right of ways that are assigned for passenger drop-offs, kiss-and-rides, and taxi stands.

The development within the Outline Plan Area will be well connected to the Village Centre and the Transit Centre by vehicular road network and pedestrian/multi-purpose trail network. This development will be supportive of the Municipality's initiatives of providing alternative modes of transportation by enhancing convenience, comfort, and efficiency.

6. WATER DISTRIBUTION SYSTEM

The water distribution network for the Rotary lands is shown in **Figure 8 - Water Distribution System.** The network will be fed by the existing 300 mm watermain located within Airport Road road right of way. The southern residential area located adjacent to Airport Road, will be serviced via the existing 300 mm within the Airport Road right-of-way. The north residential area and the east commercial area will be connected to the 300 mm line at Airport Road and will ultimately connect to the distribution network on the Government of Alberta lands which ties into the existing 400 mm watermain within Highway 69 right-of-way. A preliminary water network analysis has been completed by Associated Engineering.

7. SANITARY SEWER SYSTEM

As described in, **Figure 9 - Sanitary Services**, wastewater generated onsite will be collected and drained to the Saline Creek Regional Gravity Trunk Main. Various catchment areas flow to the Saline Creek Regional Gravity Trunk Main via gravity. The remaining catchment areas flow to the Highway 69 lift station and then pumped to the trunk main. This regional trunk runs adjacent to the Outline Plan area and will be constructed in 2013.

The Subject Lands can be broken into five (5) catchment areas: Area 'A' includes the northern section; Area 'B' outlines the southern region; Area 'C' is the western section; Area 'D' is central; while Area 'E' includes parts of the Government of Alberta Lands.

Area 'A' is composed of approximately 42.71 ha and drains directly to the Saline Creek Regional Trunk by gravity.

Area 'B' is approximately 48.71 ha and is comprised of residential and commercial development. The sanitary flows in this area are collected and directed south towards the future Highway 69. These flows will be pumped from the liftstation directly north then westward along Highway 69 in the future forcemain component of the Saline Creek Regional trunk. This forcemain will outlet directly to the gravity component of the Saline Creek Regional trunk.

The future servicing of the industrial area south of Highway 69 will be designed to direct flows to the future Highway 69 liftstation. This commercial area is included in the lift station design and is intended to connect downstream of our system.

The approximate 7.50 ha contained within Area 'C' will be collected and connect to the Saline Creek Regional Trunk via gravity.

The centrally located Area 'D' is approximately 10.45 ha, and will drain via gravity sewers to the Saline Creek Regional Trunk.

Area 'E' contains a part of the GoA Lands and is approximately 17.33 ha. This area also connects to the Saline Creek Regional trunk via gravity lines.

8. STORMWATER SYSTEM

The stormwater system consists of a series of gravity mains, over land flow routes, and a stormwater management facility (SWMF). As shown in **Figure 10 - Stormwater Management,** the SWMF will be designed as six interconnected wet ponds with a common discharge structure. One pond will be located on GoA owned lands in the west portion of the Outline Plan area and will act as a normal wet pond. This future pond will discharge to Pond A1 located on the Golf Course. Five (5) ponds are located on the Rotary Golf Course and will act as storm ponds plus water storage ponds for irrigation for the Golf Course. All storm water from the residential areas surrounding the golf course (both minor and major flows) will be directed to the storm ponds on the Golf Course. At the point of full build out of the neighbouring developments, it is expected that there will be a surplus of stormwater that will ultimately discharge to an existing ravine located east of the future Saline Creek Parkway. This future or ultimate build out discharge rate will be controlled to predevelopment rates dictated by Alberta Environment.

Stormwater is collected through the minor system, i.e., underground pipes, and the major system, i.e., overland flow routes. The south residential area is split into two drainage basins: the north area of approximately 21.9 hectares will discharge to Pond A on the Golf Course (both minor and major flows); the south of approximately 8.2 hectares will discharge to Pond B2 (both minor and major flows).

The north residential area will have three inlets into the storm water management facilities; two into Pond A and one into Pond B2. Both minor and major flows will be directed to Ponds A and B2. Grading on the Golf Course will allow for overland flow to be directed to the ponds.

The minor flows for the commercial area will be directed to Pond C and approximately 80% of the major flows. The southeast corner of the site is low and the overland flow will be directed to the existing ravine in a controlled manner. Either a stormsceptor system or minor retention will be employed to detain and clean the runoff from the low area prior to discharging into the existing ravine.

The storm water management facilities located on the Golf Course will be operated and maintained by the Golf Course. A blanket drainage easement will be registered against the golf course in favour of the Regional Municipality of Wood Buffalo to allow for access in cases of emergency.

In response to the stormwater ponds proximity to the Regional Airport, the mitigation measures recommended in the ‘Migratory Bird Mitigation Plan for Proposed Stormwater Pond Development at Rotary Lands (Pts. of 25-88-8-W4M)’ will be incorporated in the design, execution, and maintenance of the ponds in the Outline Plan area.

9. COST SHARING PRINCIPLES

9.1 Arterial Road Cost Sharing Principles & ARA Estimate

9.1.1 CALCULATION PRINCIPLES

The following is a brief description of the methodology of calculating shared costs for the arterial roadways in the Saline Creek Area Structure Plan. These arterial roads include all of the proposed internal arterial roadways, Highway 69 and Airport Road channelization at intersections and Road D (Creek Crossing). The offsite roadways (the Saline Creek Parkway, Regional Trail Connectors and Highway 69 Upgrades) are handled through the Regional Municipality of Wood Buffalo's Development Charge Levy.

For the proposed internal arterial system, these cost sharing principles assume that each adjacent developer will be responsible to construct the first two lanes of the arterial roadway and related servicing. The second two lanes and associated servicing would be cost shared by all of the Saline Creek Plateau Area Structure Plan Lands (the benefitting lands). This principle is consistent with the arterial road cost-sharing principles currently used by the Regional Municipality of Wood Buffalo.

Construction costs will be estimated based on the current costs in the Regional Municipality of Wood Buffalo. A contingency of 10% and Engineering and Testing of 15% will be added to establish the total estimated cost of construction.

Allocation will be to the Gross Developable Area (GDA) of the benefitting areas excluding any existing or future gas pipelines, Municipal Reserve Lands (MR), Public Utility Lots (PUL) and arterial road right of way area. The dedicated lands for the arterial roads will be included in the cost base at a rate of actual purchase price or an agreed upon valuation. For the purpose of this preliminary calculation, arterial road Right of Way (ROW) dedication is carried as $250,000 per hectare (ha).

For the purposes of this document, the cost of the ultimate four lane arterial road is broken down into the following phases:

(A) Initial Construction- Construction of first two lanes (the 'access' component) adjacent to new development.

The new developer would be responsible for construction of the initial two lanes directly adjacent to the new development and the work would include construction of the following:

- Sanitary sewer laterals, size based on full development ultimate servicing requirements;
- Drainage sewer laterals and interim drainage structures;
- Watermains, size based on full development ultimate servicing requirements;
- Power and communication, utility constructed to accommodate ultimate servicing load requirements;
- Clearing and Grading the full arterial right of way;
- Basic landscaping;
- Sidewalk and initial Pedestrian Ways;
- Initial Illumination, sized and located based on the Ultimate arterial road design.

Based on the construction requirements and for the purposes of this analysis, we have approximated that the Interim Construction portion of the overall cost of construction would be approximately 60% of the total cost of the ultimate arterial roadway on a lineal meter basis.

Note: If any Developer is required (by the Municipality) to construct the initial two lanes on a right-of-way that is not adjacent to his lands, then that Developer can recover the cost of the initial construction as a "Boundary Condition" from the adjacent land owners on either side of the arterial right-of-way in question.

(B) Final Construction- Construction of the second two lanes (the 'arterial' component) adjacent to new development.

The Saline Creek Plateau developers would be responsible for construction of the final two lanes of the arterial and the work would include construction of the following:

- Final Drainage elements including catch basins;
- Channelization upgrades to intersections;
- Signalization of intersections (where required);

- Final Illumination;
- Final landscaping;
- Upgrades to pedestrian ways and multi-purpose trails;
- Note that by agreement, the Saline Creek Area Structure Plan owners have agreed to include the Area Structure Plan planning and engineering fees, as well as the Area Structure Plan Traffic Impact Impact Assessment fees as a Saline Creek Arterial Road Cost, for cost-sharing purposes.

Based on the construction requirements, we can approximate that the Final Construction phase would be approximately 40% of the total cost of the ultimate arterial roadway on a lineal meter basis.

Upon completion of the arterial component ('second two lanes') construction, the actual costs will be reconciled against the estimated costs and the go forward Saline Creek Arterial Road Assessment (SCARA) calculations will be adjusted accordingly.

9.1.2 IMPLEMENTATION PROCESS & ASSUMPTIONS

The following is a brief description of the proposed implementation framework for the method of Cost Sharing through construction stages of development. Construction of common systems is staged according to the pace of the overall development and each individual developer is responsible for constructing their portion of the infrastructure as required by subdivision conditions issued by the Regional Municipality of Wood Buffalo.

The 'initial two-lane' construction will be the developers responsibility or may be recoverable as a boundary condition from adjacent owners (at the time of their development proceeding).

The 'final two-lanes' and related infrastructure when constructed is included in the Developers servicing obligations. At the time of Development Agreement, the developer will be required to:

1. Commit to construct a portion of arterial road (if required by the Municipality).
2. Pay his SCARA contributions based on the GDA of his proposed development.
3. The developer will be required to provide the higher of items 1 and 2 above.
4. To the extent that the Development cost of Item 1 is higher than the SCARA amount, the difference would be considered an 'over expenditure' and recovered from future developments as each pays its SCARA.

There are effectively three possible scenarios for each developer which are as follows:

1. Equivalent Contribution: The developer's shared SCARA contribution matches the actual cost of construction obligation. Thus, no further Arterial Road Assessment contributions are required and the developers obligation for that phase is satisfied by his construction contribution.
2. Shortfall in Contribution: The developer's shared SCARA contribution is greater than the estimated cost of construction obligation. Therefore, the developer must contribute the difference in cash to a maximum of the ARA contributions.
3. Over Expenditure in Contribution: The developer's shared SCARA contribution is less than the estimated cost of construction obligation. Therefore, the developer has incurred an over expenditure in the amount that exceeds the ARA obligation. This over expenditure is recovered from future developers.

Over expenditures are not 'distributed' and are paid down by each subsequent developers ARA payments to the extent that this exceeds their SCARA construction obligation.

9.1.3 ADMINISTRATION

The Saline Creek Owners (Rotary, Keyano, and Government of Alberta) have agreed to administer the arterial road cost-sharing system and will jointly appoint an agent to implement the program. The owners intend to prepare an Owner's Agreement which will dictate the cost-sharing mechanism. This agreement will be registered on the title of each land owner, and will be referenced in the Regional Municipality of Wood Bufflo's Development Agreement for each phase of development.

9.2 Storm & Sanitary System Permanent Area Contributions (PAC)

Cost sharing of sewer systems installed in the Saline Creek ASP will be administered according to the principles outlined below:

9.2.1 COST SHARABLE ITEMS

- Any sanitary sewer (and associated manholes) having an internal diameter of 375 mm or more (sanitary trunk sewers).
- Any storm sewer (and associated manholes) having an internal diameter of 1,200 mm or more (storm trunk sewers).
- Any stormwater management (SWM) system which includes, among others, SWM drainage studies, stormwater retention/ detention facilities, the interconnecting and connecting storm sewers, control structures, landscaping, land cost, outfalls, etc.
- Any sanitary lift station facilities and related construction, including the discharge forcemain.

Installation costs of sanitary sewer of less than 375 mm in diameter and storm sewer of less than 1,200 mm in diameter (i.e., lateral sewers) are normally not cost sharable. They are installed at the developer's expense. The only exception is when oversized laterals (providing additional capacity and/or depth) are required to service areas external to the development in question. The cost difference can be recovered by an oversize claim from the benefitting areas.

9.2.2 COST SHARING CONCEPTS

There are two types of cost sharing: on-site and off-site. The onsite system applies in the case of the Saline Creek Plateau Area Structure Plan.

On-site Cost Sharing refers to cost sharing of trunk sewers installed within a pre-defined boundary (drainage basin). The boundary of the cost sharing area is determined on the basis of topographic, political, economic and design constraints. This cost sharing is characterized by the following:

- A number of developers benefitting from a common sewer system within the cost sharing area are involved in the installation and financing of the required system. Construction of the sewer system is staged according to the pace of development. Each developer is responsible for constructing that portion of the system required by the Regional Municipality of Wood Buffalo.
- Each developer is required to pay his relative share of the construction cost which is established by an area assessment known as the Permanent Area Contribution (PAC). This rate or area charge is recalculated each year and is derived by dividing the remaining estimated construction cost of the cost sharable items within the cost sharing boundary by the remaining benefitting areas. The PAC for each developer is calculated by multiplying the PAC rate by its development area (GDA) at each stage.
- If a developer is required to construct a portion of the trunk sewer system that is more expensive than his storm PAC obligation for that stage of development, then they will front-end the required construction costs. Since all that they are ultimately required to pay is its PAC, the difference between the actual construction cost and the PAC is treated as an over expenditure. An over expenditure can be recovered from subsequent developers when they pay their storm PAC. An under expenditure will be held in trust to offset over expenditures from future developers.
- The Sanitary Onsite PAC is managed in a similar fashion.
- For the Sanitary Lift Station, the cost of the lift station and related facilities is cost-shared by the catchment area that connects to the lift station.

Construction costs will be estimated based on the current costs in the Regional Municipality of Wood Buffalo. A contingency allowance of 10% and an Engineering and Testing allowance of 15% will be added to establish the total estimated cost of construction.

Allocation will be to the Assessable Area (AA) which shall be calculated as the Gross Developable Area (GDA) of the benefitting catchment excluding pipeline R.O.W.'s, Municipal Reserve, Public Utility lots and Arterial Road R.O.W.'s. Any PUL lands dedicated for the purposes of these cost-sharable facilities will be included in the cost base at a rate of actual purchase price or an agreed upon valuation.

10. SHALLOW UTILITIES

Within an easement along the south property line of the Rotary Outline Plan lands, on the north side of Highway 6, runs an existing power line, a natural gas, communications (including fibre), and a water trunk. The proposed development will allow for acceptable offsets of site features from these shallow utilities. The shallow utility alignments will be established during preparation of the detailed servicing design and layouts for the Outline Plan area.

11. IMPLEMENTATION

11.1 Development Staging

Development staging for the Outline Plan area is illustrated in **Figure 11 – Staging Plan.** Not all the lands included in this Outline Plan are owned by Saline Creek Development Inc. Therefore, the sequence of development is tentative and subject to change. Market conditions may also impact the development staging in the Outline Plan area.

11.2 Infrastructure Staging

Infrastructure phasing is illustrated for roads (**Figure 12**), sanitary (**Figure 13**), water (**Figure 14**) and storm (**Figure 15**). These Plans outline the propsed sequence of servicing as per the development staging.

11.3 Design Guidelines

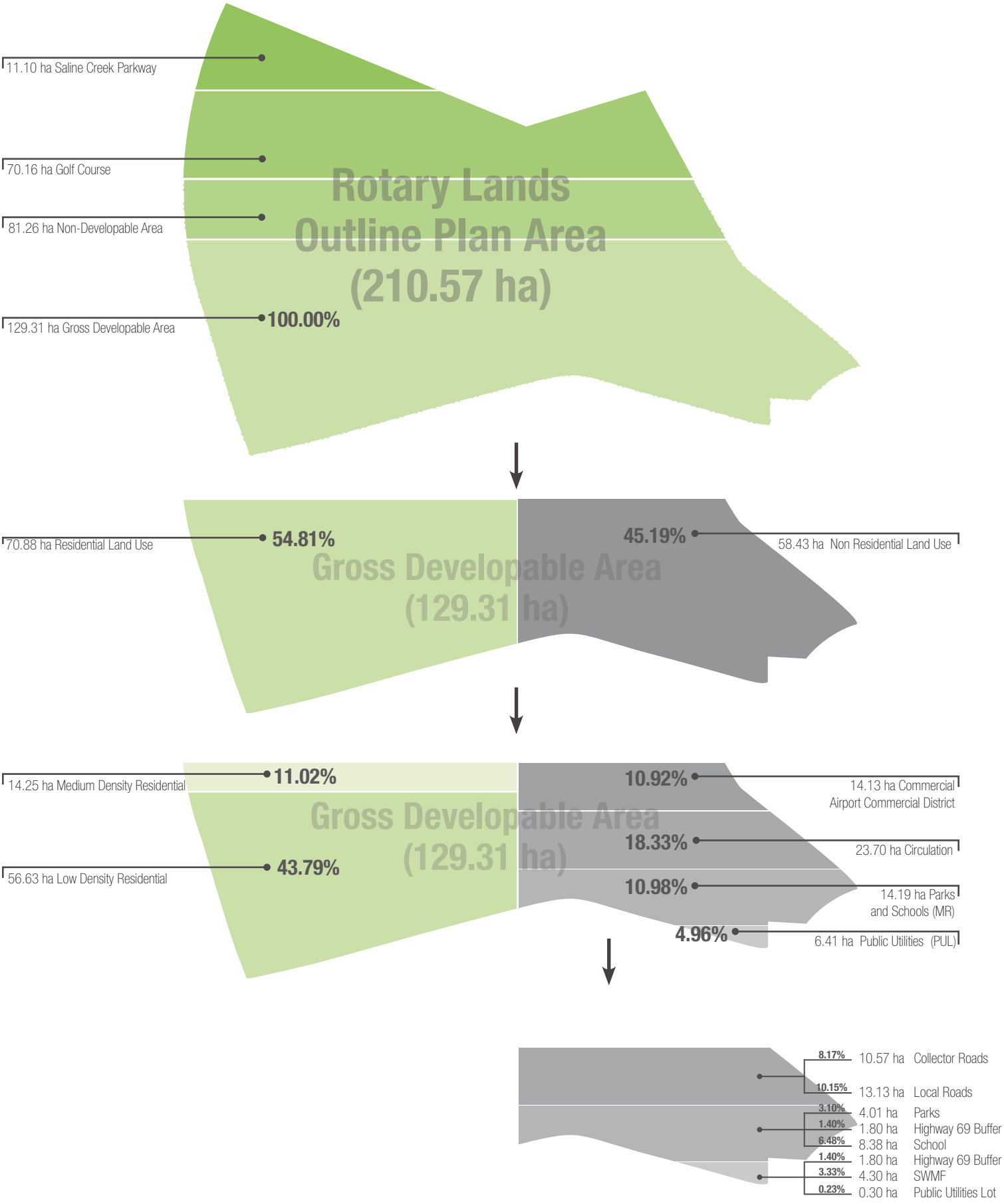
Developers are to prepare Architectural Design guidelines for each respective development in the Outline Plan area. These design guidelines will be based on the Design Principles and district specific design guidelines of this document.

APPENDIX A

KEYANO COLLEGE OUTLINE PLAN
LAND USE STATISTICS

ROTARY LANDS OUTLINE PLAN AREA: LAND USE STATISTICS			
		Total (ha)	%GDA
1	**Gross Area**	**210.57**	
	Golf Course	70.16	
	Saline Creek Parkway	11.10	
	Non - Developable Area	81.26	
	Gross Developable Area	**129.31**	**100%**
2	**Residential Land Uses**		
	Low Density Residential	56.63	43.79%
	Medium Density Residential	14.25	11.02%
	Total Residential	**70.88**	**54.81%**
3	**Non-Residential Uses**		
3a	**Commercial**		
	Airport Commercial District	**14.13**	**10.92%**
3b	**Circulation**		
	Collector roads	10.57	8.17%
	Local Roads	13.13	10.15%
	Sub-total	**23.70**	**18.33%**
3c	**Parks and Schools (MR)**		
	School	8.38	6.48%
	Parks	4.01	3.10%
	Highway 69 Buffer	1.80	1.4%
	Sub-total	**14.19**	**10.98%**
3d	**Public Utilities (PUL)**		
	Highway 69 Buffer	1.81	1.4%
	Stormwater Management Facility	4.30	3.33%
	Public Utilities Lot	0.30	0.23%
	Sub-total	**6.41**	**4.96%**
	Total Non Residential	**58.43**	**45.19%**

ROTARY LANDS OUTLINE PLAN AREA: POPULATION STATISTICS					
	Total (ha)	Density (units/ha)	Total No. of Units	Persons/ Unit	Total Population
Residential Land Uses					
Low Density Residential	56.63	18	1020	3.1	3162
Medium Density Residential	14.25	45	642	2.9	1862
Total Residential	**70.88**		**1662**		**5024**



Rotary Lands Outline Plan - Saline Creek Plateau

Land Use Statistics

IBI GROUP

APPENDIX B.1
FIGURES

Rotary Lands Outline Plan - Saline Creek Plateau

Figure 1.0 Location Plan

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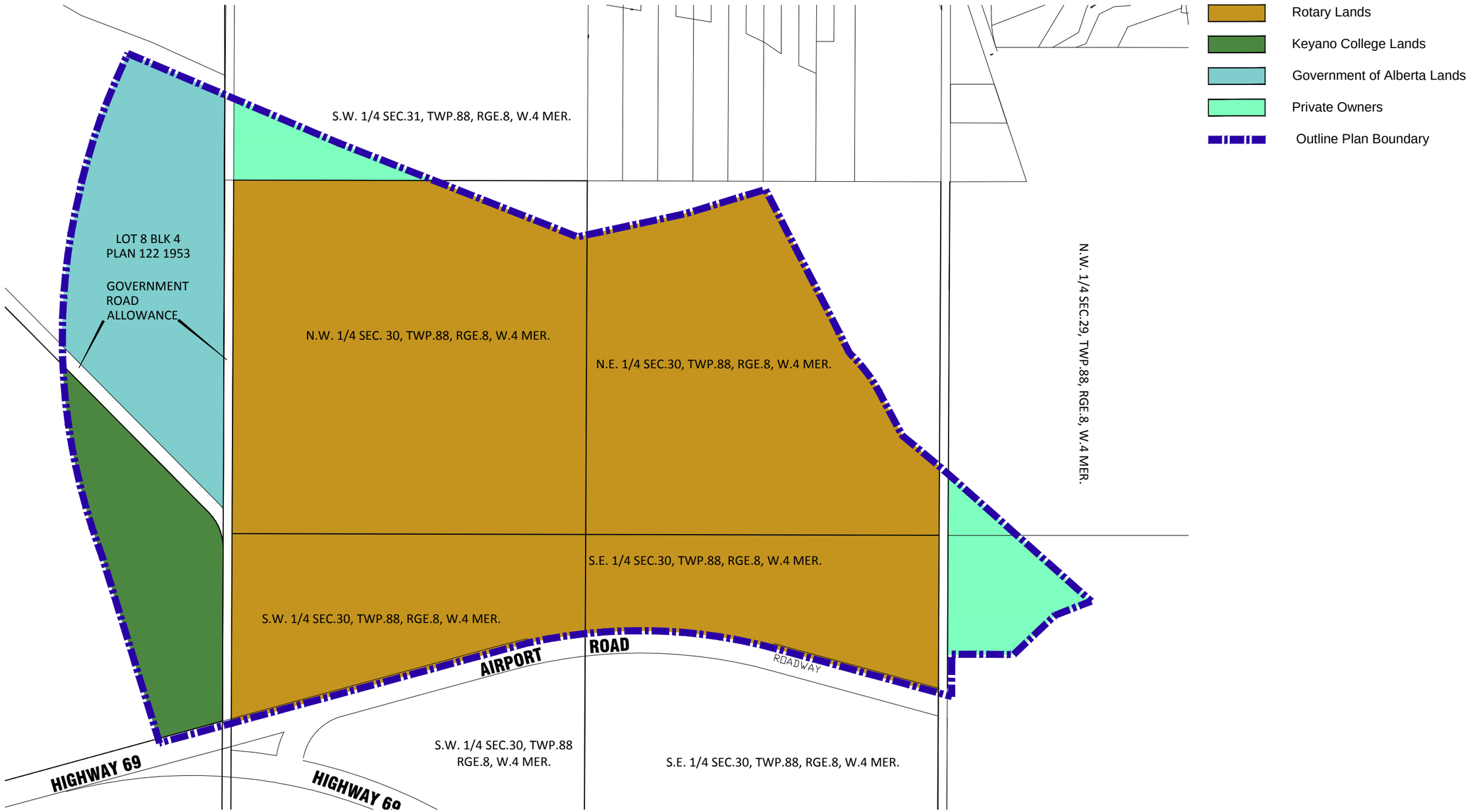

Rotary Lands Outline Plan - Saline Creek Plateau

Figure 2.0 Land Ownership

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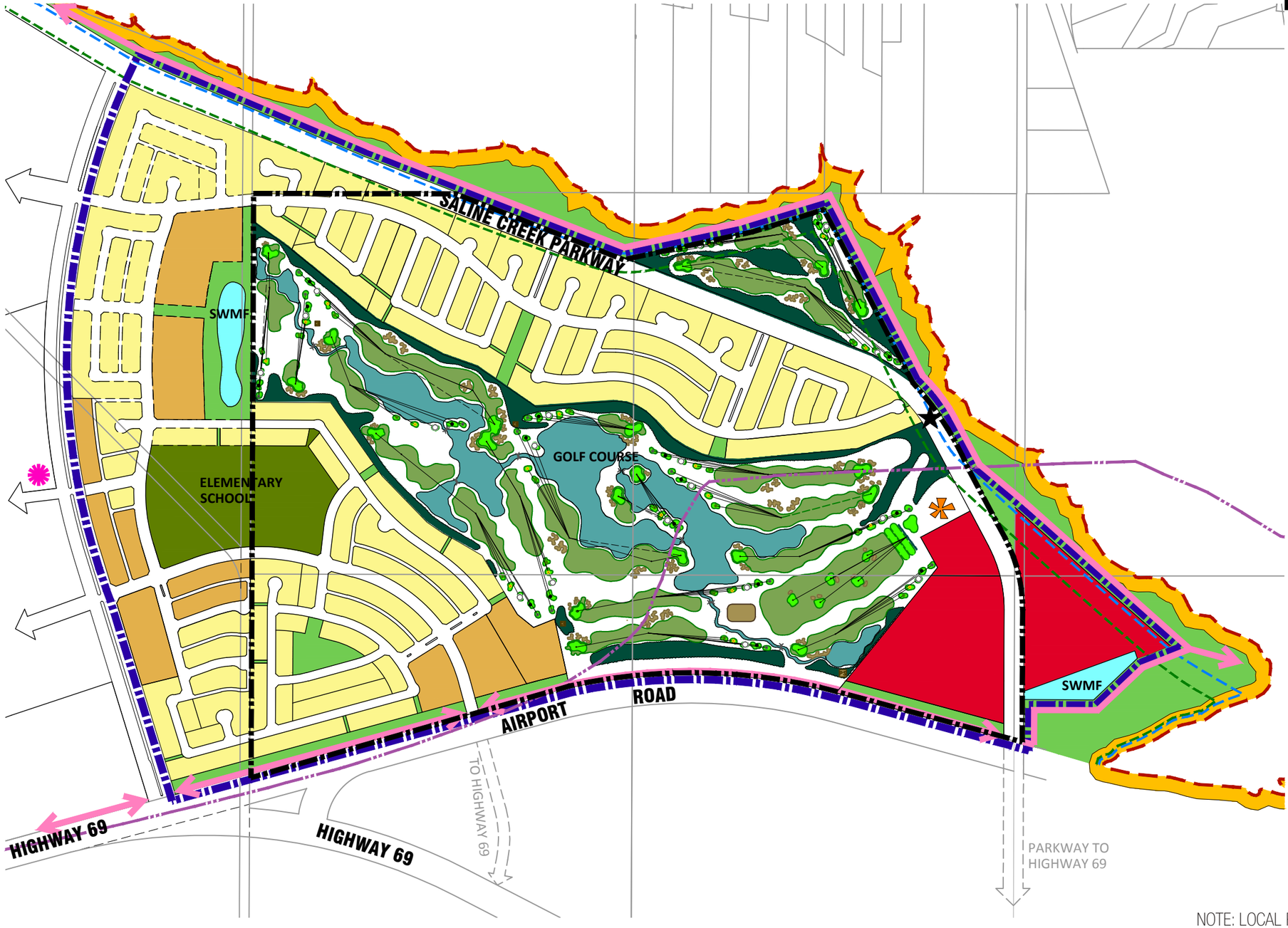

LEGEND

- Low Density Residential
- Medium Density Residential
- Airport Commercial
- Parks and Recreation
- Public Service
- Golf Course
- Top of Bank
- Urban Development Setback Line
- Structural Development Setback Line
- Noise Exposure Contour NEF 25
- Regional Trail
- 30.0m Firebreak
- Proposed Transit Centre
- Golf Cart Under Pass
- Proposed Golf Course Clubhouse
- Rotary Lands Boundary
- Outline Plan Boundary

NTS

NOTE: LOCAL ROADS ARE SUBJECT TO MINOR CHANGES AT SUBDIVISION STAGE.

Rotary Lands Outline Plan - Saline Creek Plateau

Figure 3.0 Land Use Development Concept

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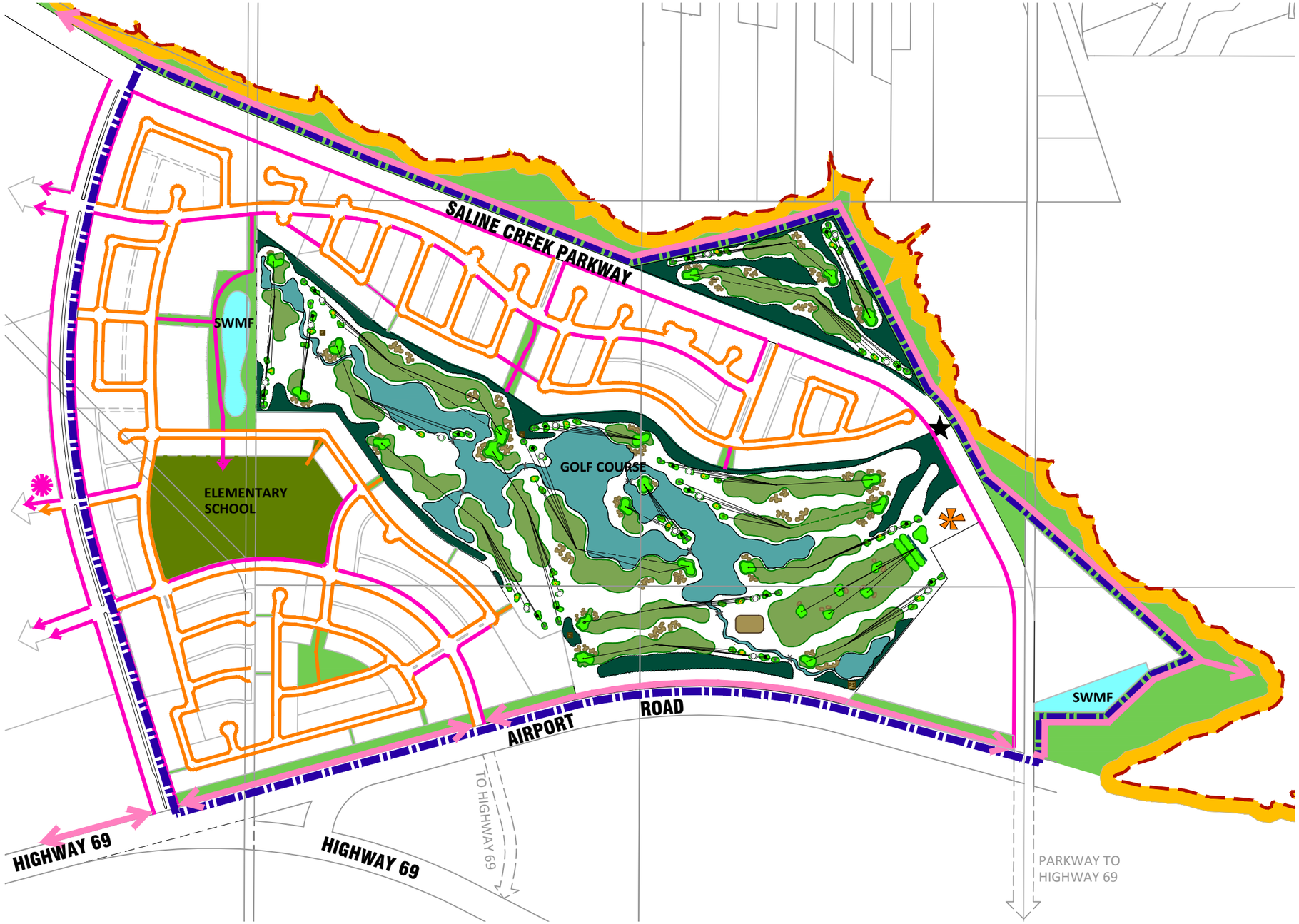

LEGEND

- Parks and Recreation
- Public Service
- Golf Course
- Sidewalk
- Multi-Purpose Trail
- Regional Trail
- 30.0m Firebreak
- Top of Bank
- Proposed Transit Centre
- Golf Cart Under Pass
- Proposed Golf Course Clubhouse
- Outline Plan Boundary

NTS

Rotary Lands Outline Plan - Saline Creek Plateau

Figure 4.0 Open Space System

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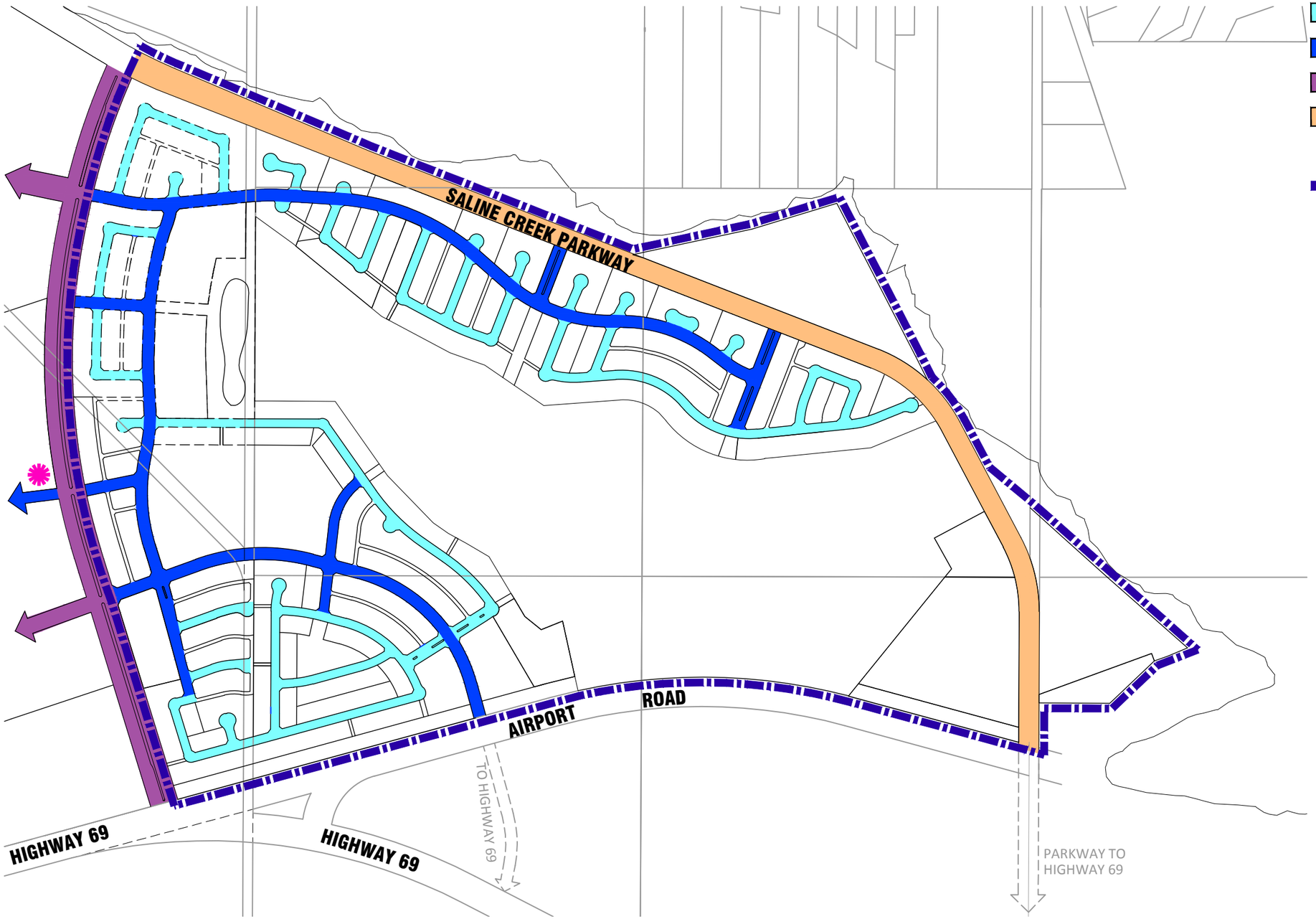
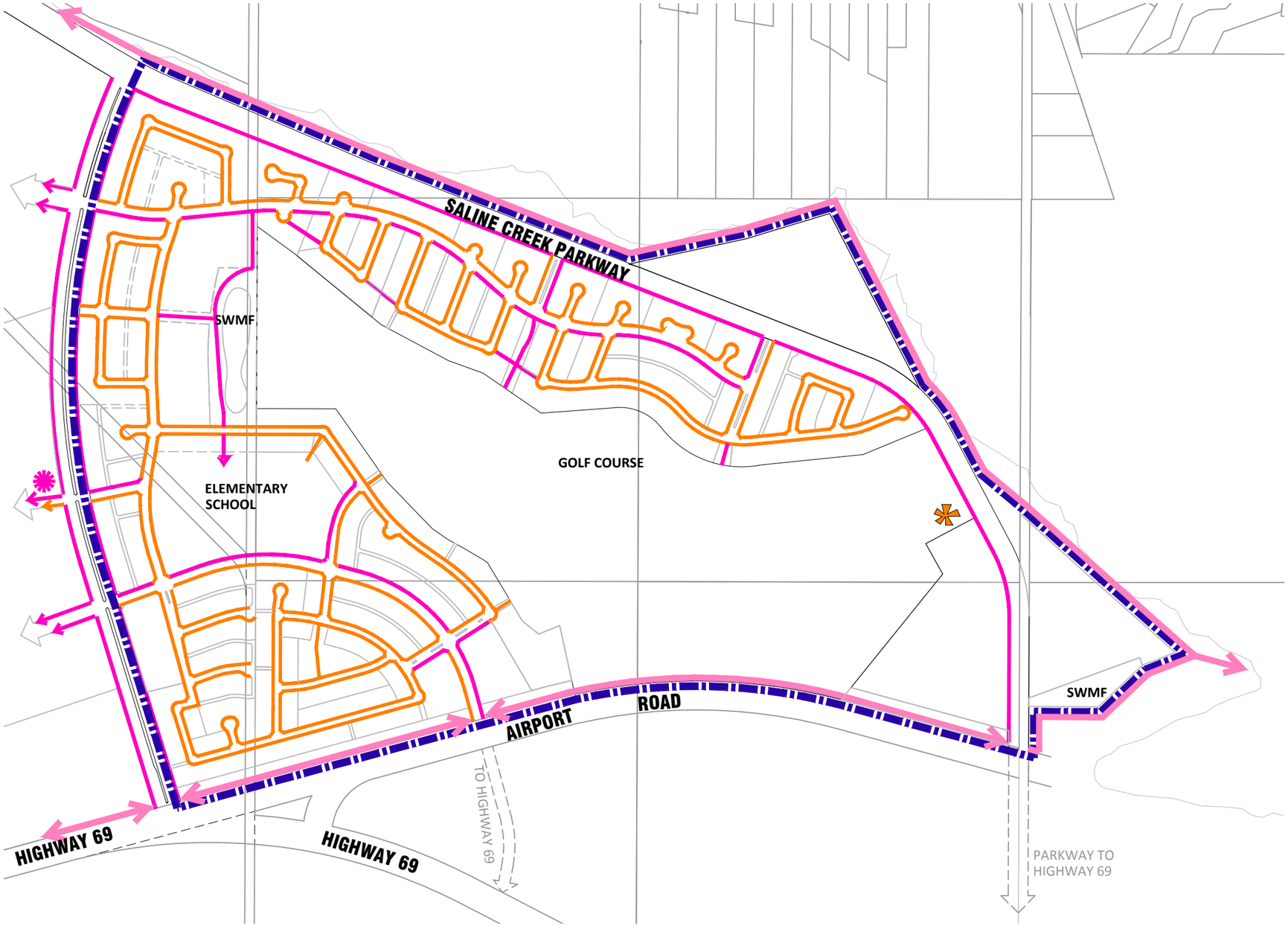


Rotary Lands Outline Plan - Saline Creek Plateau

Figure 5.0 Transportation Network

IBI GROUP



NTS

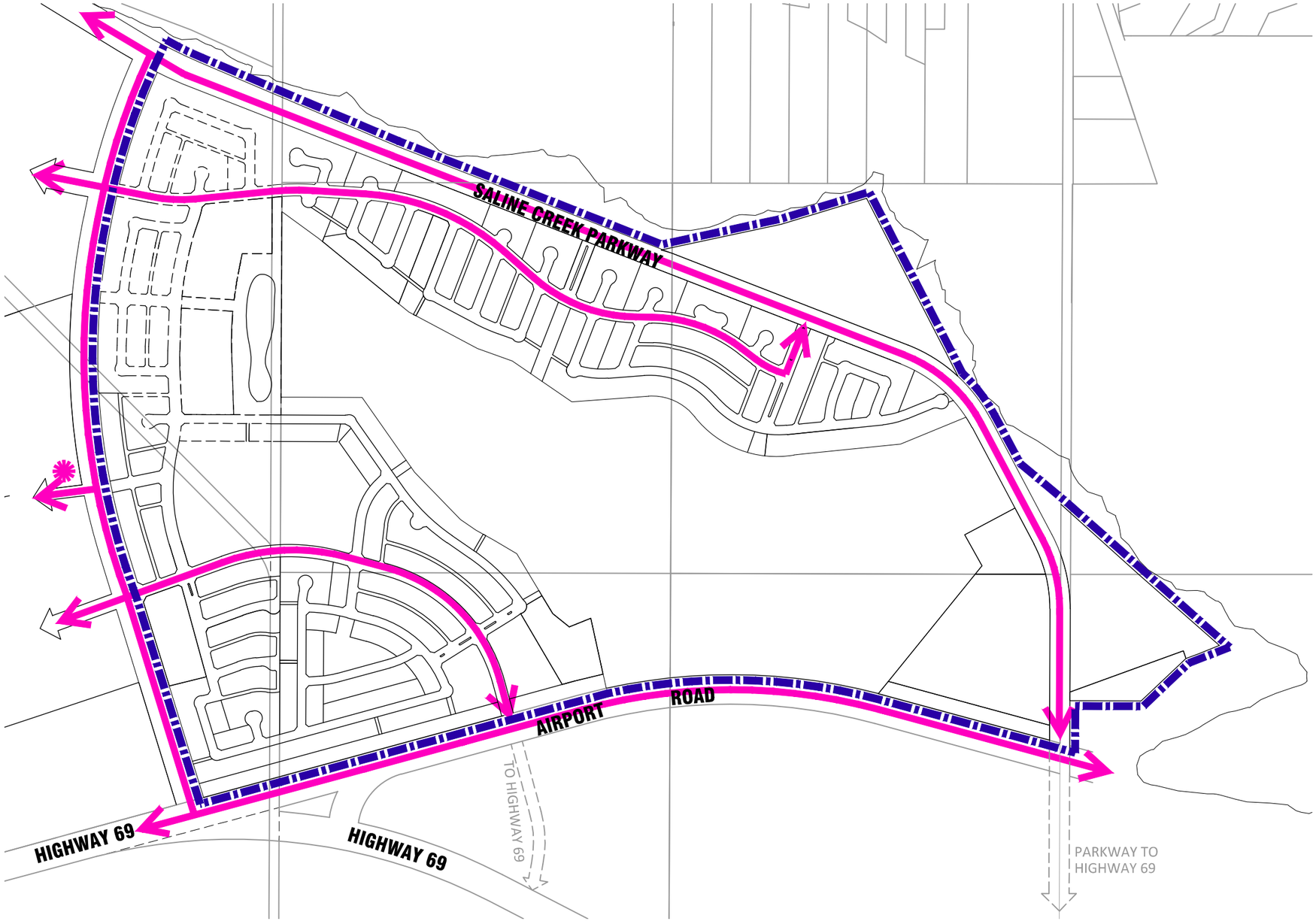
LEGEND

- Sidewalk
- Multi-Purpose Trail
- Regional Trail
- Proposed Transit Centre
- Pedestrian Connection
- Proposed Golf Course Clubhouse
- Outline Plan Boundary

Rotary Lands Outline Plan - Saline Creek Plateau

Figure 6.0 Pedestrian and Bike Network

IBI GROUP



LEGEND

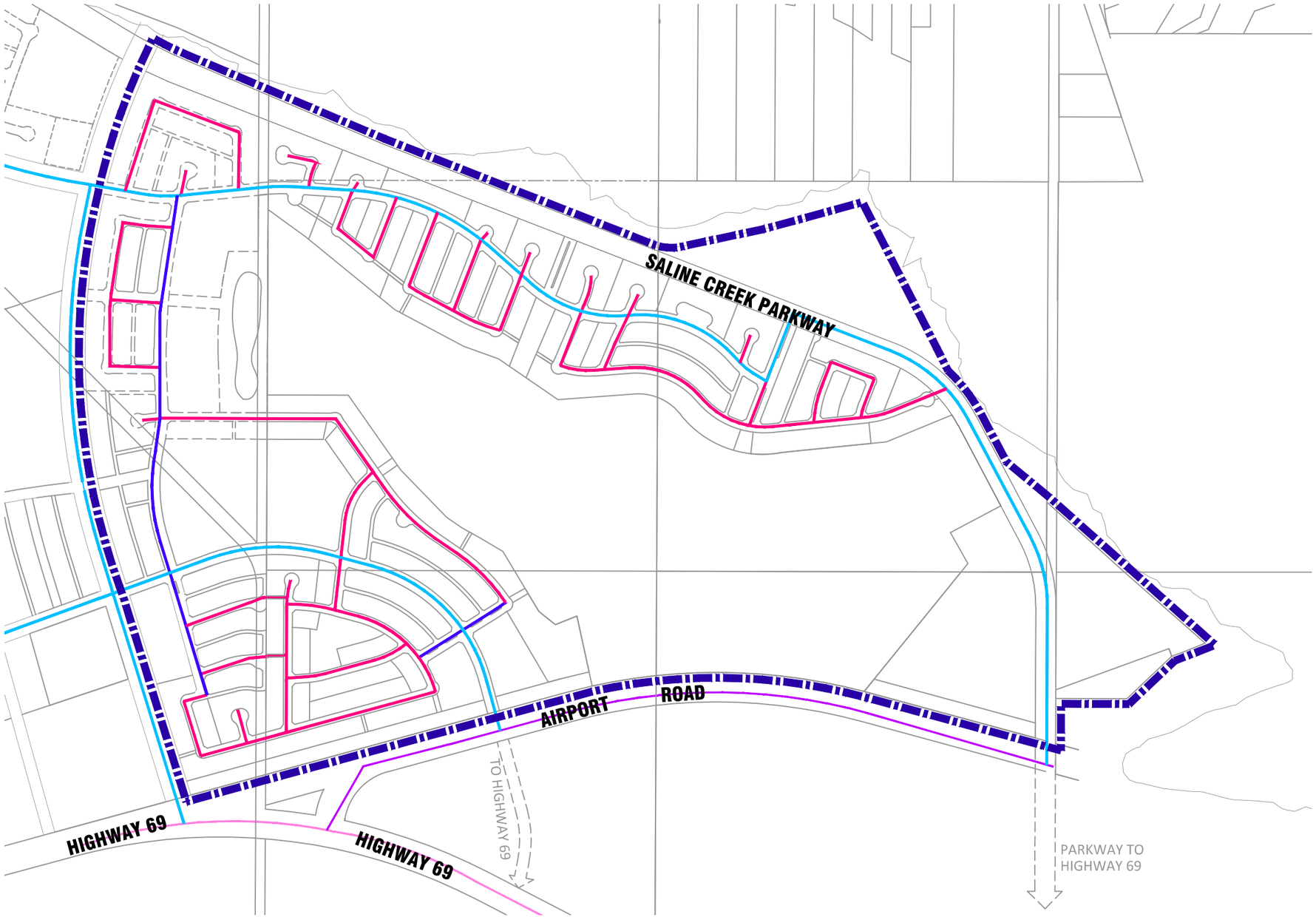
- Proposed Transit Centre
- Transit Route
- Outline Plan Boundary

NTS

Rotary Lands Outline Plan - Saline Creek Plateau

Figure 7.0 Potential Transit Network

IBI GROUP



LEGEND

- Existing 400mmØ Water Line
- Existing 300mmØ Water Line
- Proposed 200mmØ Water Line
- Proposed 250mmØ Water Line
- Proposed 300mmØ Water Line
- Outline Plan Boundary

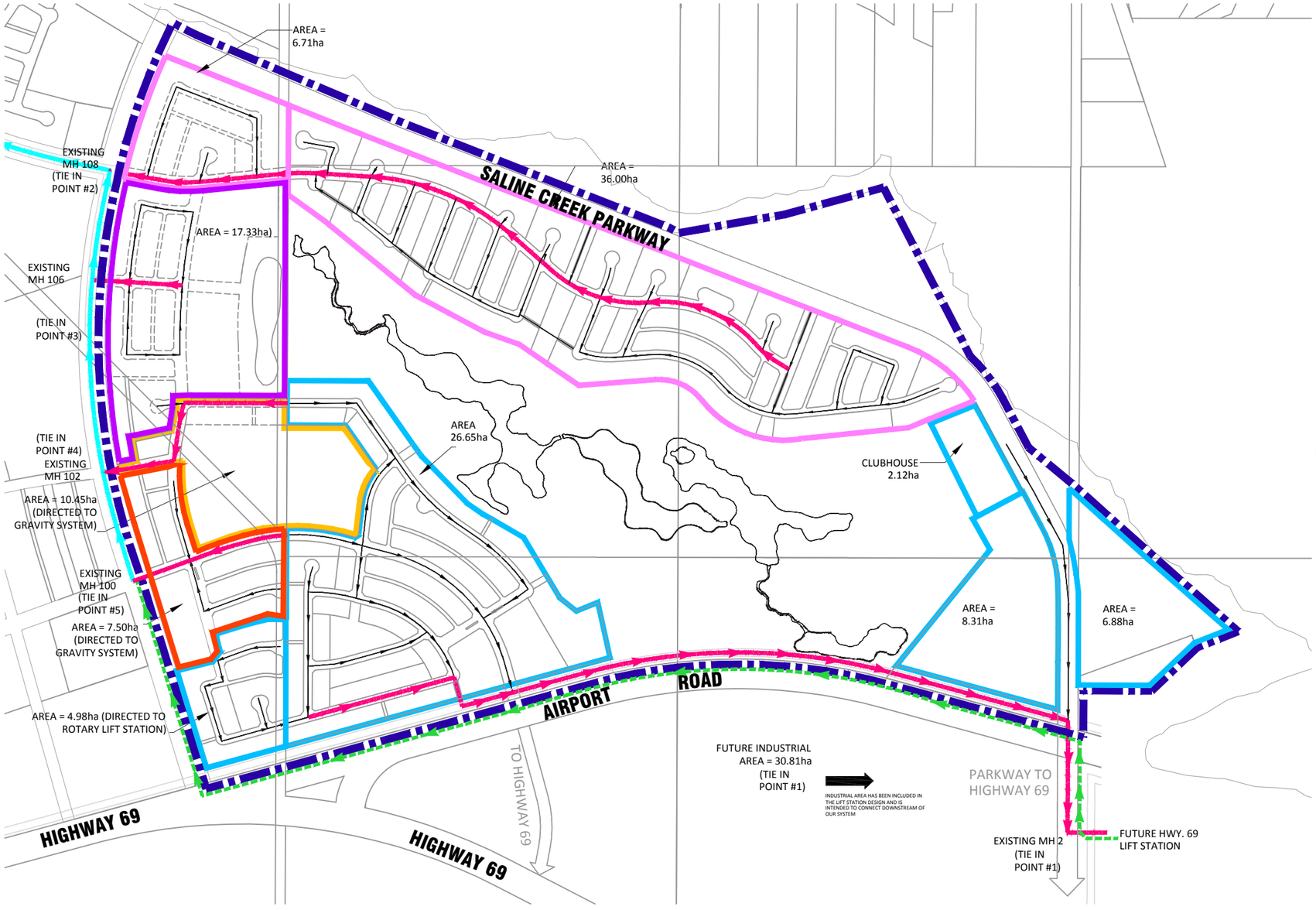
NTS

Rotary Lands Outline Plan - Saline Creek Plateau

Figure 8.0 Water Distribution System

IBI GROUP

NTS



LEGEND

- Sanitary Catchment Area "A" (Tie in Point 2)
- Sanitary Catchment Area "B" (Tie in Point 1)
- Sanitary Catchment Area "C" (Tie in Point 5)
- Sanitary Catchment Area "D" (Tie in Point 4)
- Sanitary Catchment Area"E" (Tie in Point 3)
- Proposed Sewer Line/ Sewer Flow Direction
- Forcemain
- Gravity Trunk
- Saline Creek Regional Gravity Trunk Main
- Outline Plan Boundary

Rotary Lands Outline Plan - Saline Creek Plateau

Figure 9.0 Sanitary Services

IBI GROUP

NTS

LEGEND

- Catchment Area
- Direction of Minor Flow
- Overland Drainage Route
- SWMF Pond
- Outline Plan Boundary

SALINE CREEK PARKWAY

NORTH AREA 1= 16.21ha (to pond A)

NORTH GOLF COURSE CATCHMENT AREA= 7.84ha (to pond B2)

NORTH AREA 2= 10.82ha (to pond A)

NORTH AREA 3= 15.56ha (to pond B2)

GOA CATCHMENT AREA= 82.81ha Offsite Pond

Offsite Pond

INLET 7

POND A1

INLET 6

INLET 5

POND A

POND B1

POND B2

INLET 4

INLET 1

INLET 2

INLET 3

POND C

ROAD SECTION 1 AREA= 0.88ha (to pond C)

CLUB HOUSE AREA= 2.14ha (to pond C)

ROAD SECTION 2 AREA= 0.98ha (to pond C)

SOUTH CATCHMENT AREA 1 = 21.00ha (to pond A)

GOLF COURSE (with clubhouse) AREA= 62.32ha

KEYANO CATCHMENT AREA 1= 12.92ha (to pond A)

COMMERCIAL DEVELOPMENT AREA 1 = 5.04ha (to pond C)

STORM WATER MANAGEMENT CONTAINED WITHIN SITE

AREA= 6.87ha (to ravine)

EXTERNAL POND BY OTHERS

COMMERCIAL DEVELOPMENT AREA 2 = 3.27ha (to ravine)

ROAD SECTION 3 AREA= 1.14ha (to ravine)

KEYANO CATCHMENT AREA 2= 3.41ha (to pond B)

SOUTH CATCHMENT AREA 2 = 9.06ha (to pond B)

AIRPORT ROAD

(TO ROAD DITCH)

(TO ROAD DITCH)

(TO EXISTING RAVINE)

TO HIGHWAY 69

PARKWAY TO HIGHWAY 69

HIGHWAY 69

HIGHWAY 69

Rotary Lands Outline Plan - Saline Creek Plateau

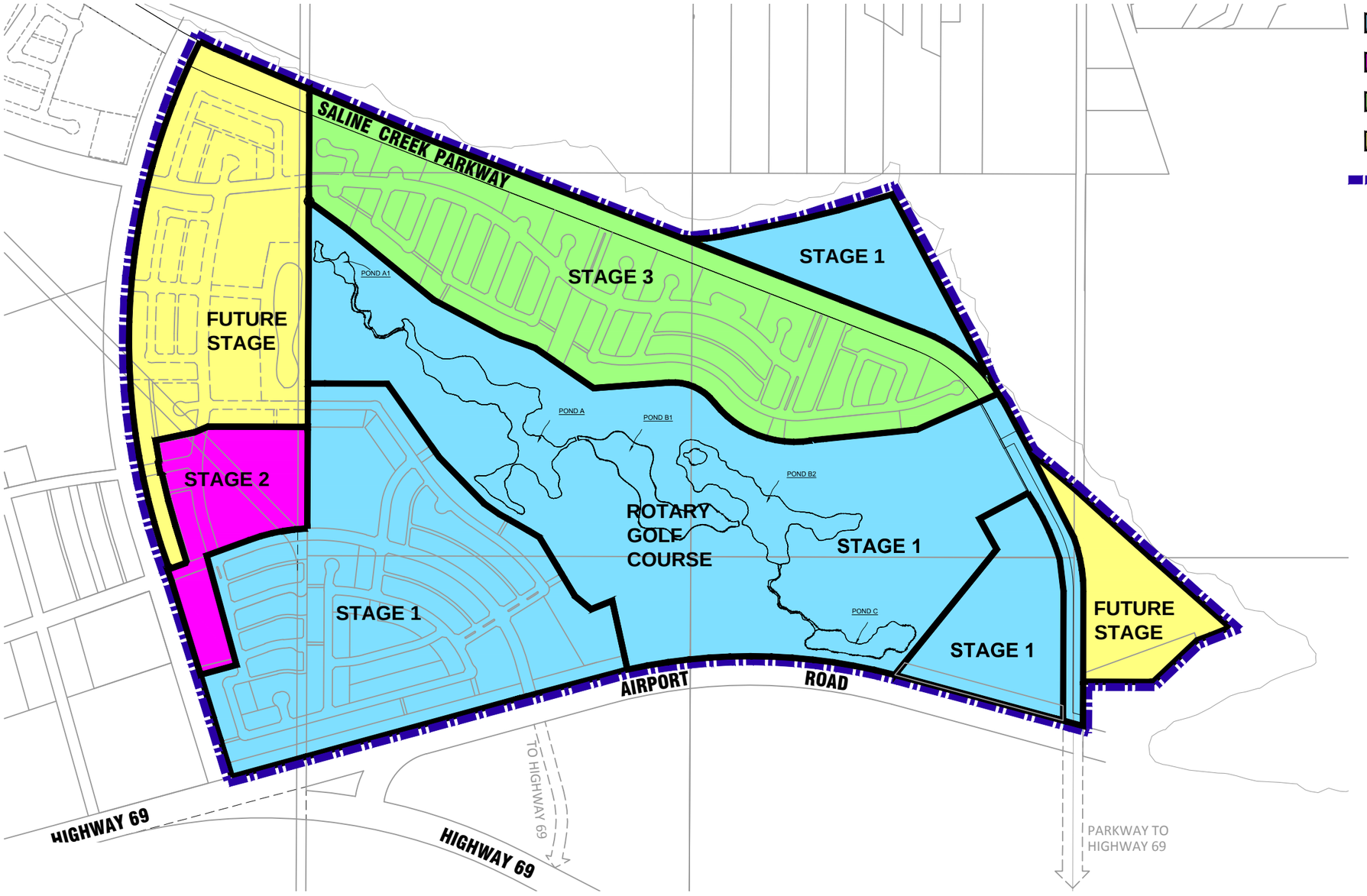
Figure 10.0 Stormwater Management Plan

IBI GROUP

NTS

LEGEND

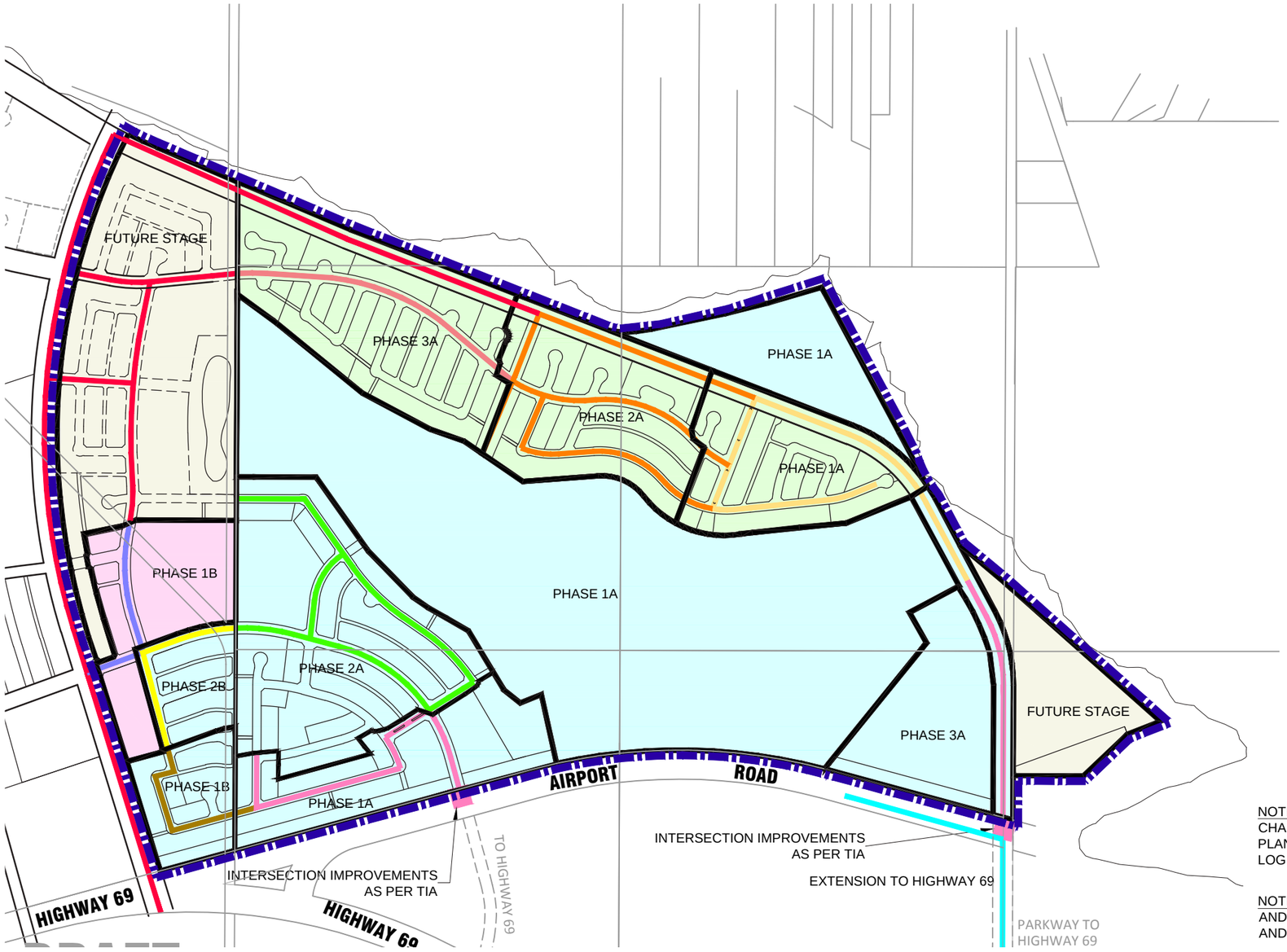
- Stage 1
- Stage 2
- Stage 3
- Future Stage
- Outline Plan Boundary



Rotary Lands Outline Plan - Saline Creek Plateau

Figure 11.0 Staging Plan

IBI GROUP



NTS

LEGEND

PHASE #A - ROTARY

PHASE #B - KEYANO

Proposed Infrastructure Requirements - Roads

Stage 1		Stage 2	
Phase 1A		Phase 1B	
Phase 1B			
Phase 2A			
Phase 2B			
Phase 3A			

Stage 3		Future	
Phase 1A		Future	
Phase 2A			
Phase 3A			

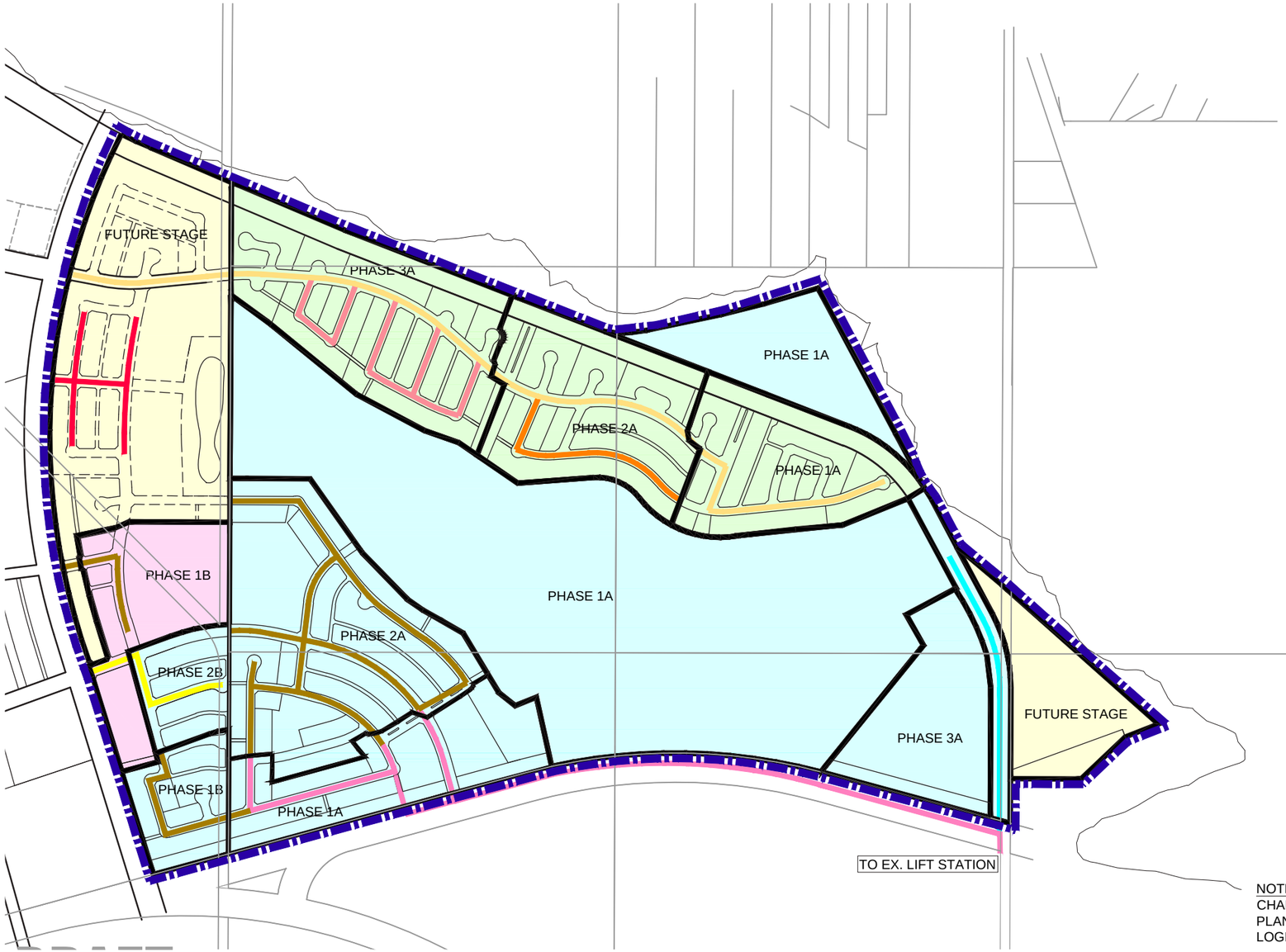
NOTE: THE SEQUENCE OF DEVELOPMENT IS TENTATIVE AND SUBJECT TO CHANGE. THE DEVELOPMENT STAGING FOR THE ROTARY LANDS HAS BEEN PLANNED IN FOUR STAGES. THESE STAGES ARE NOT FINAL, BUT PRESENT A LOGICAL ORDER FOR DEVELOPMENT.

NOTE: TIMELINE FOR ROAD AND INTERSECTION IMPROVEMENTS IS TENTATIVE AND SUBJECT TO CHANGE. EXTERNAL IMPROVEMENTS ALONG HIGHWAY 69 AND AIRPORT ROAD WILL BE AS PER THE APPROVE TIA.

Rotary Lands Outline Plan - Saline Creek Plateau

Figure 12.0 Infrastructure Phasing - Road

IBI GROUP



LEGEND

PHASE #A - ROTARY

PHASE #B - KEYANO

Proposed Infrastructure Requirements - Sanitary

Stage 1		Stage 2	
Phase 1A		Phase 1B	
Phase 1B			
Phase 2A			
Phase 2B			

Stage 3		Future	
Phase 1A		Future	
Phase 2A			
Phase 3A			

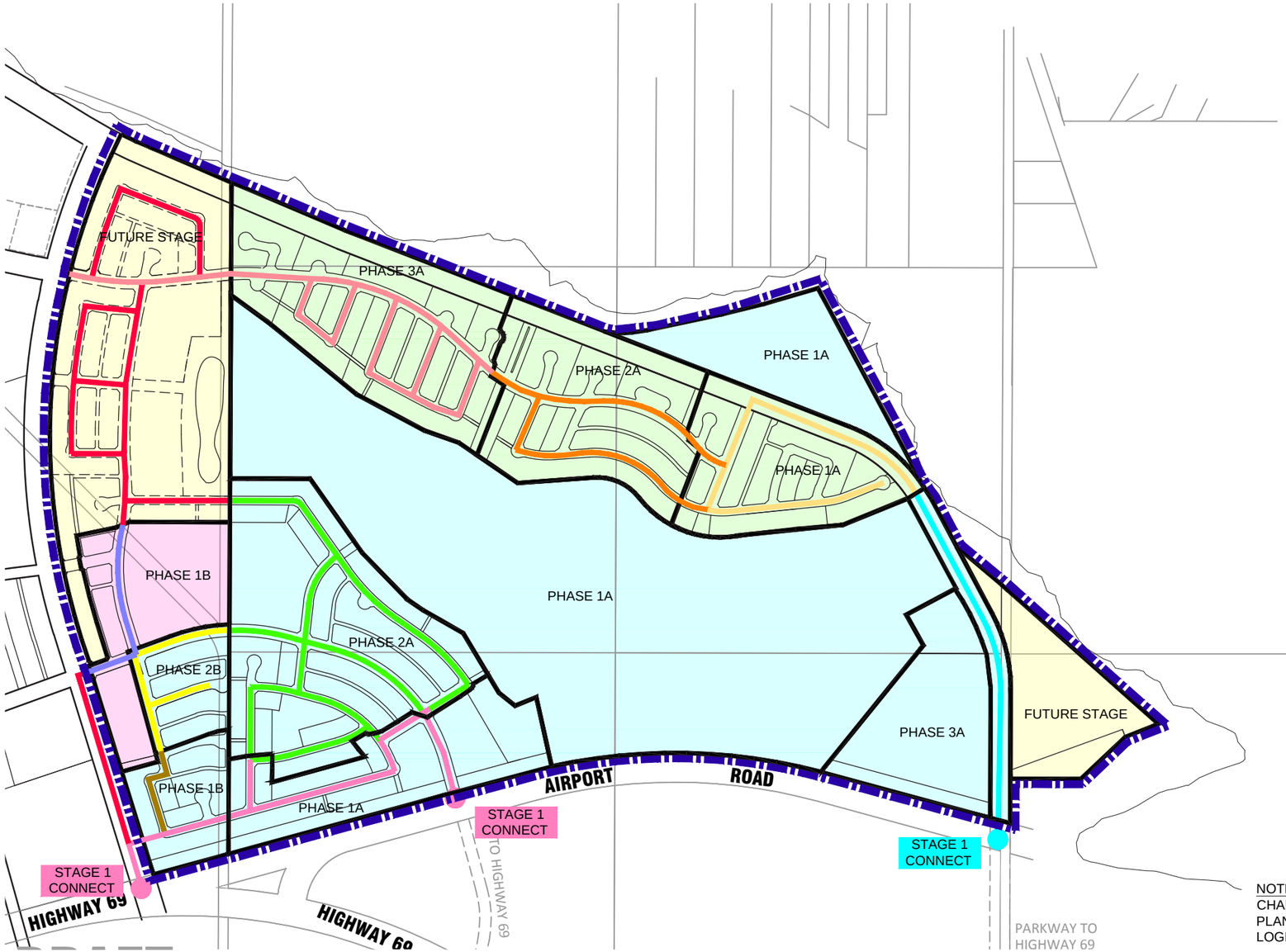
NTS

NOTE: THE SEQUENCE OF DEVELOPMENT IS TENTATIVE AND SUBJECT TO CHANGE. THE DEVELOPMENT STAGING FOR THE ROTARY LANDS HAS BEEN PLANNED IN FOUR STAGES. THESE STAGES ARE NOT FINAL, BUT PRESENT A LOGICAL ORDER FOR DEVELOPMENT.

Rotary Lands Outline Plan - Saline Creek Plateau

Figure 13.0 Infrastructure Phasing - Sanitary

IBI GROUP



LEGEND

PHASE #A - ROTARY

PHASE #B - KEYANO

Proposed Infrastructure Requirements - Water

Stage 1		Stage 2	
Phase 1A		Phase 1B	
Phase 1B			
Phase 2A			
Phase 2B			
Phase 3A			

Stage 3		Future	
Phase 1A		Future	
Phase 2A			
Phase 3A			

NTS

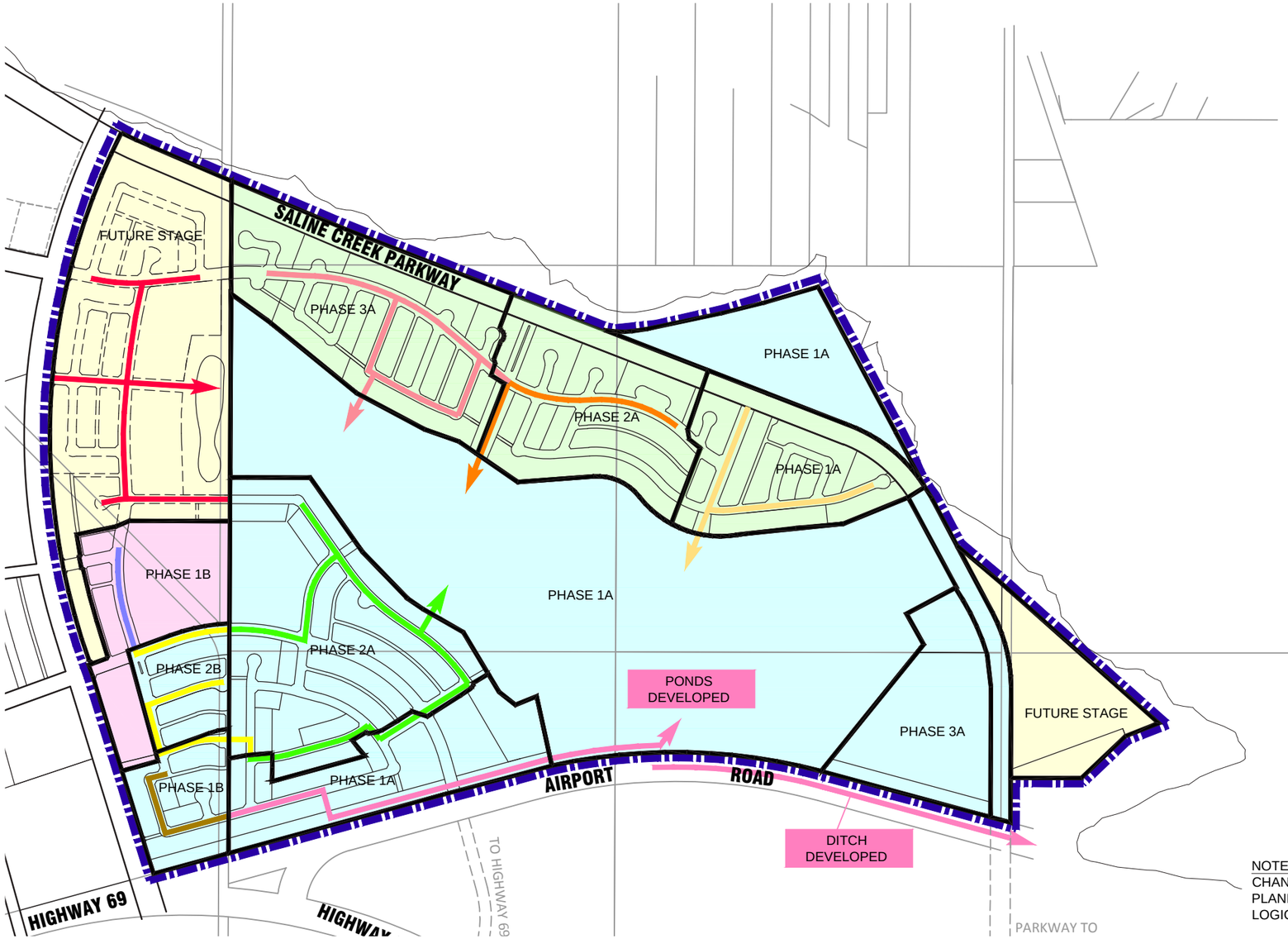
NOTE: THE SEQUENCE OF DEVELOPMENT IS TENTATIVE AND SUBJECT TO CHANGE. THE DEVELOPMENT STAGING FOR THE ROTARY LANDS HAS BEEN PLANNED IN FOUR STAGES. THESE STAGES ARE NOT FINAL, BUT PRESENT A LOGICAL ORDER FOR DEVELOPMENT.

Rotary Lands Outline Plan - Saline Creek Plateau

Figure 14.0 Infrastructure Phasing - Water

IBI GROUP

NTS



LEGEND

PHASE #A - ROTARY

PHASE #B - KEYANO

Proposed Infrastructure Requirements - Stormwater

Stage 1		Stage 2	
Phase 1A		Phase 1B	
Phase 1B			
Phase 2A			
Phase 2B			

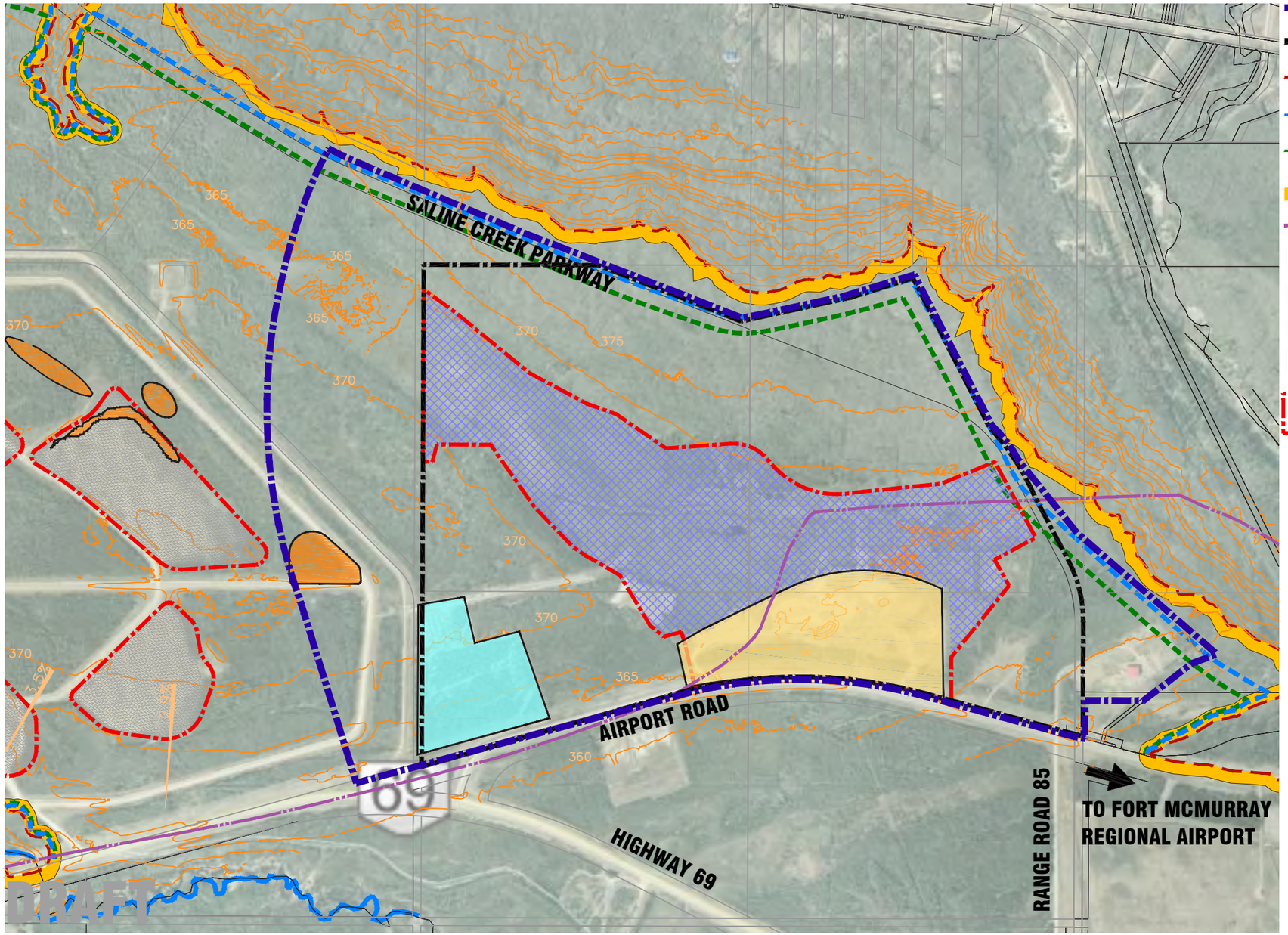
Stage 3		Future	
Phase 1A		Future	
Phase 2A			
Phase 3A			

NOTE: THE SEQUENCE OF DEVELOPMENT IS TENTATIVE AND SUBJECT TO CHANGE. THE DEVELOPMENT STAGING FOR THE ROTARY LANDS HAS BEEN PLANNED IN FOUR STAGES. THESE STAGES ARE NOT FINAL, BUT PRESENT A LOGICAL ORDER FOR DEVELOPMENT.

Rotary Lands Outline Plan - Saline Creek Plateau

Figure 15.0 Infrastructure Phasing - Storm

IBI GROUP



LEGEND

- Outline Plan Boundary
- Rotary Lands Boundary
- Top of Bank Line
- Urban Development Setback Line
- Structural Development Setback Line
- 30.0m Firebreak
- Noise Exposure Contour NEF 25
- Campground
- Pit
- Topsoil Stock Pile
- Muskeg
- Yard, Training Facility

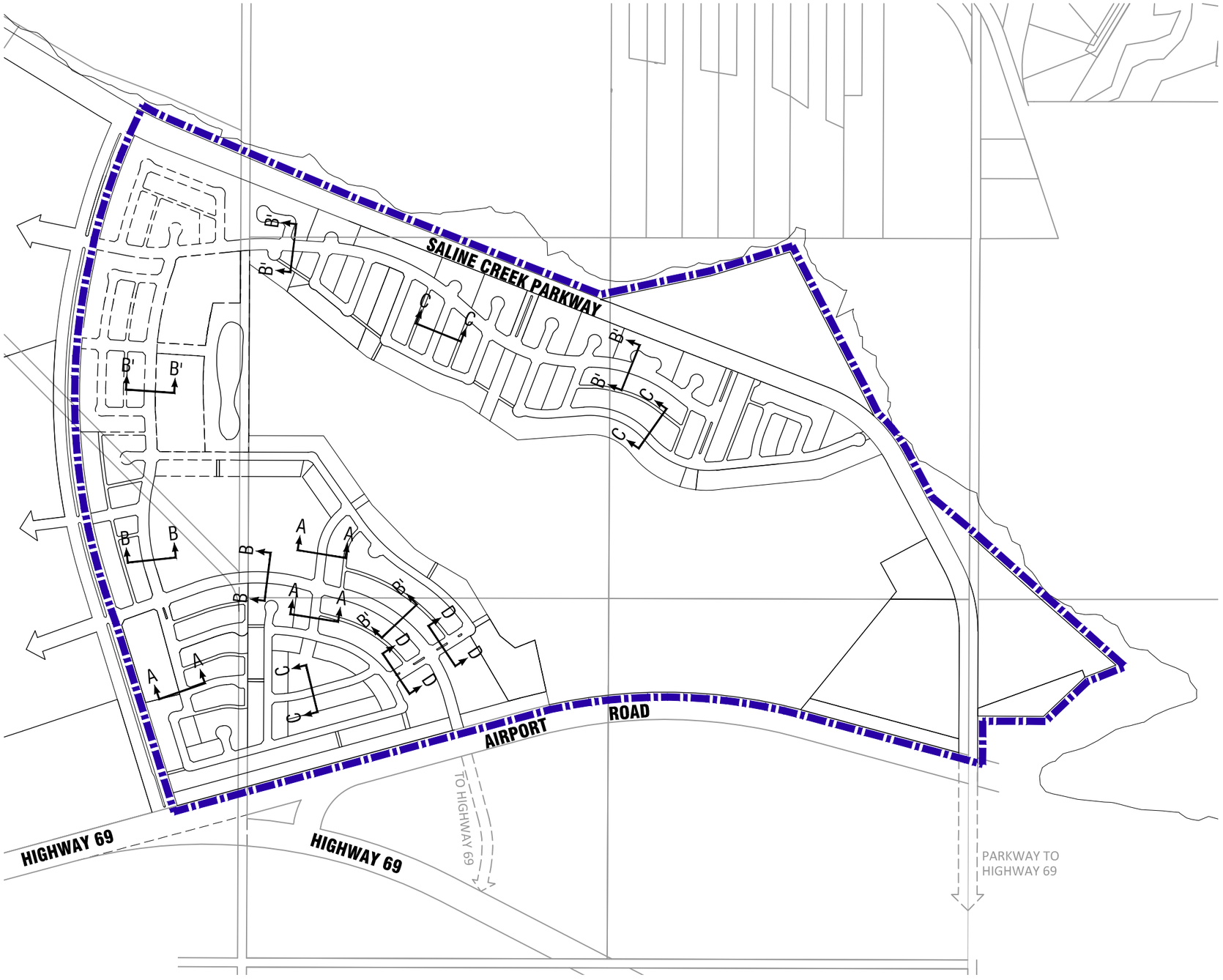
NTS

Rotary Lands Outline Plan - Saline Creek Plateau

Figure 16.0 Existing Conditions

IBI GROUP

APPENDIX B.2
ROAD CROSS SECTIONS



LEGEND

A A — 2 - LANE MINOR COLLECTOR - UNDIVIDED - INCL. 2 PARKING LANES

B B — 2 - LANE MAJOR COLLECTOR - UNDIVIDED - INCL. 2 PARKING LANES - MULTI-USE TRAIL AND SCHOOL ON ONE SIDE

B' B' — 2 - LANE MAJOR COLLECTOR - UNDIVIDED - INCL. 2 PARKING LANES - MULTI-USE TRAIL ON ONE SIDE

C C — 2 - LANE LOCAL - MONO WALK(S)

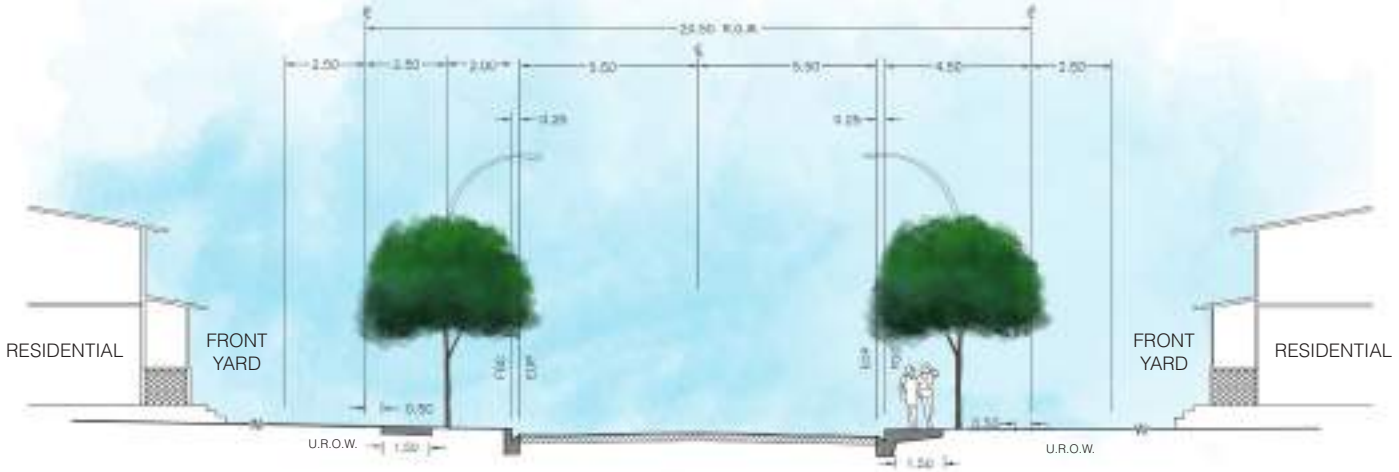
D D — 2 - LANE LOCAL - DIVIDED - 27.0m ROW - SEPARATE SIDEWALKS INCL. MULTI-PURPOSE TRAIL ON ONE SIDE

NTS

Rotary Lands Outline Plan - Saline Creek Plateau

Road Section Key Plan

IBI GROUP



Section A-A

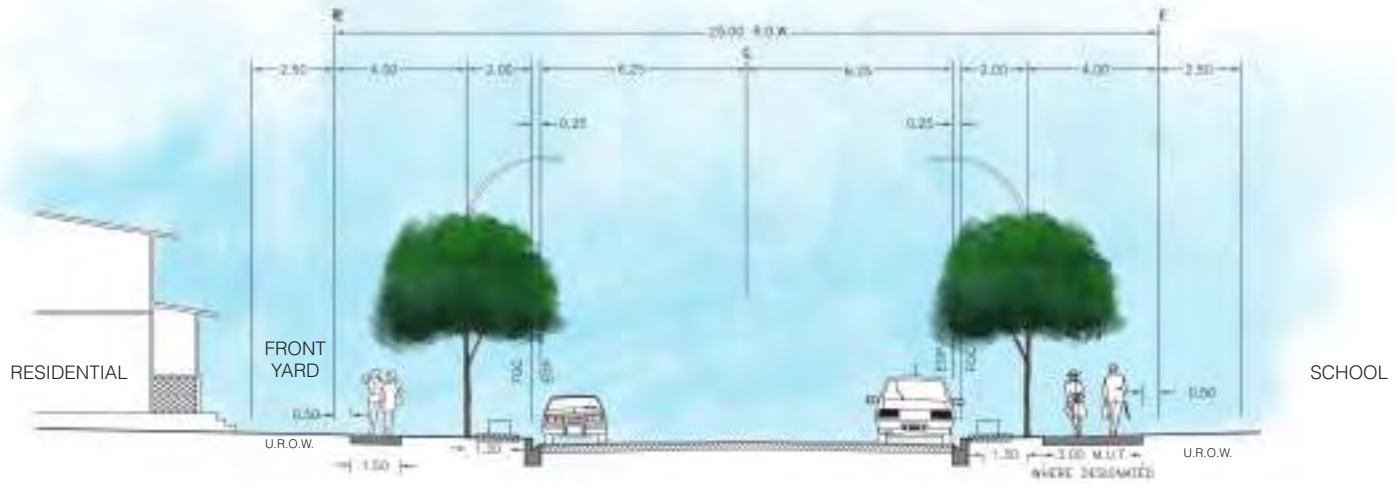
20.50 m Two-Lane Minor Collector, Undivided
Incl. 2 Parking Lanes

Note: Preliminary only, subject to detailed design.

Rotary Lands Outline Plan - Saline Creek Plateau

Section A-A

IBI GROUP



Section B-B

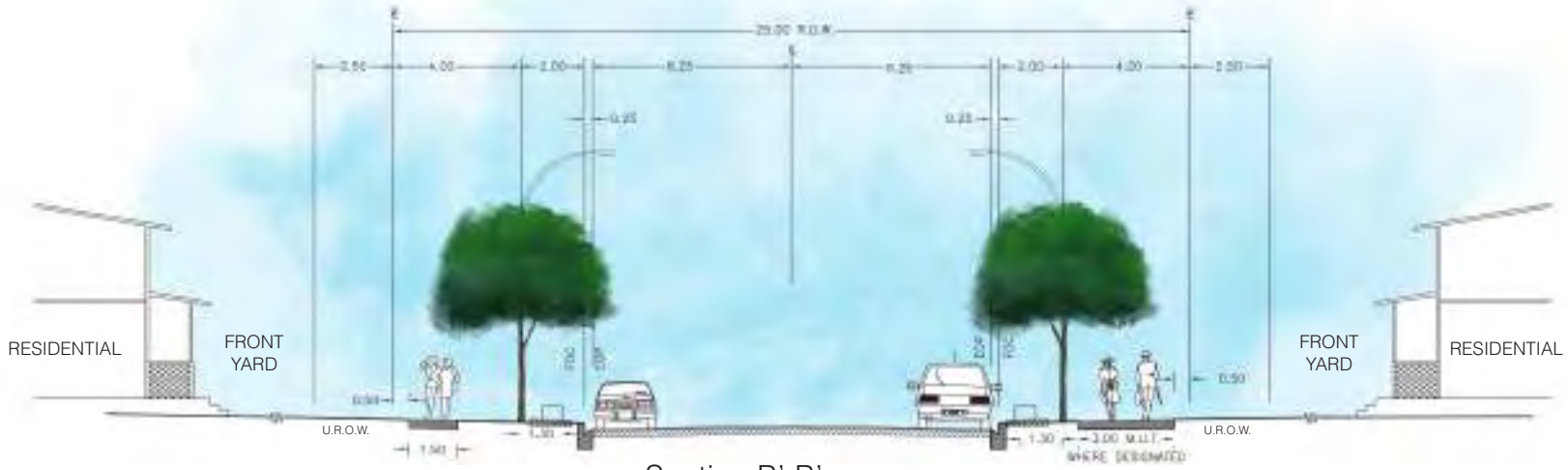
25.00 m Two-Lane Major Collector, Undivided
Incl. 2 Parking Lanes - Multi Use Trail and School On One Side

Note: Preliminary only, subject to detailed design.

Rotary Lands Outline Plan - Saline Creek Plateau

Section B-B

IBI GROUP



Section B'-B'

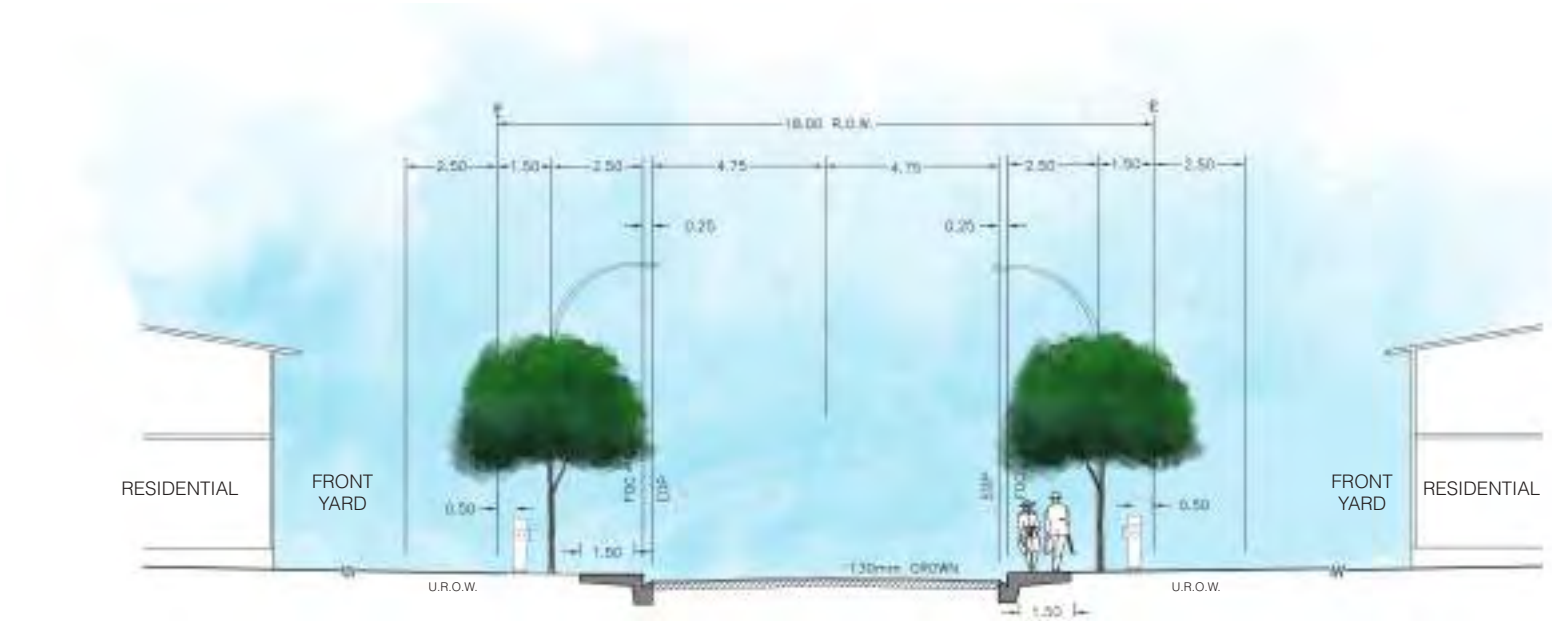
25.00 m Two-Lane Major Collector, Undivided
Incl. 2 Parking Lanes - Multi Use Trail On One Side

Note: Preliminary only, subject to detailed design.

Rotary Lands Outline Plan - Saline Creek Plateau

Section B'-B'

IBI GROUP



Section C-C

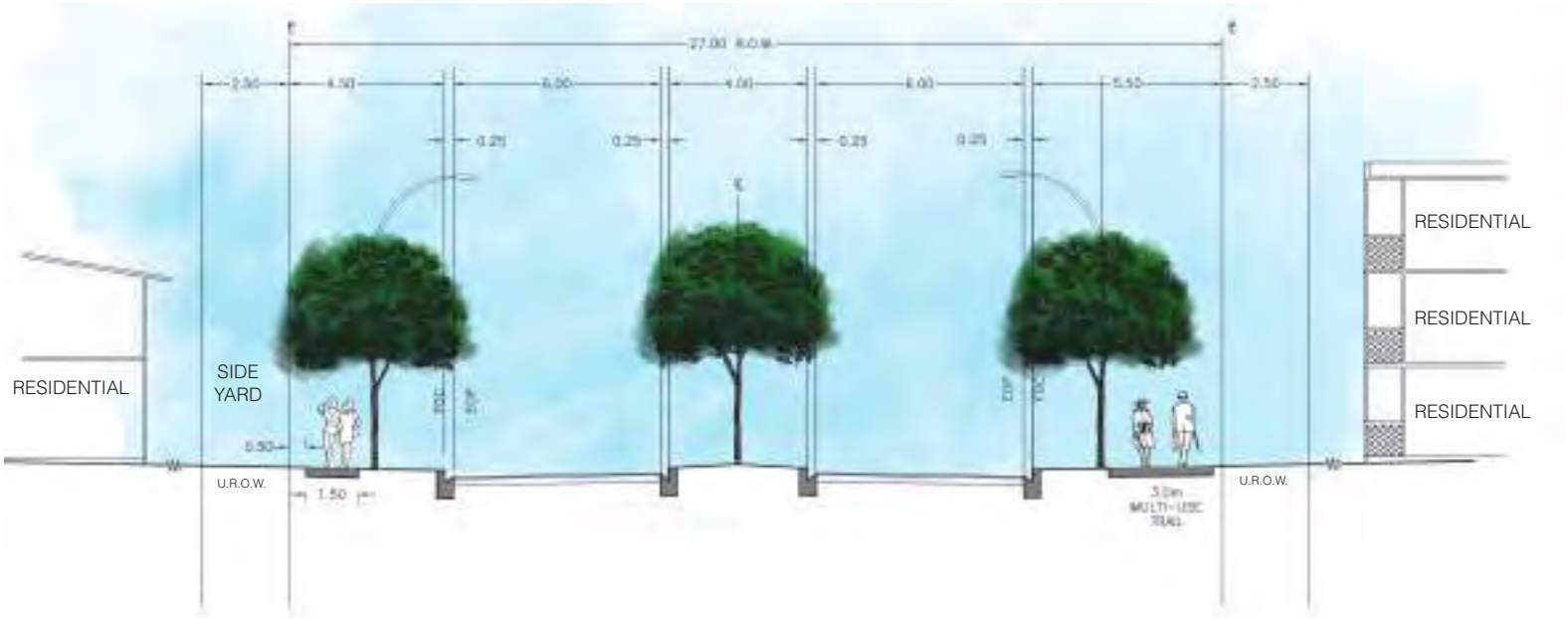
18.00 m Two-Lane Residential
Mono Walk(s)

Note: Preliminary only, subject to detailed design.

Rotary Lands Outline Plan - Saline Creek Plateau

Section C-C

IBI GROUP



Section D-D

2 Lane Residential - Divided - 27.0 m R.O.W.
Separate Sidewalks Including Multi-Purpose Trail on one side.

Note: Preliminary only, subject to detailed design.

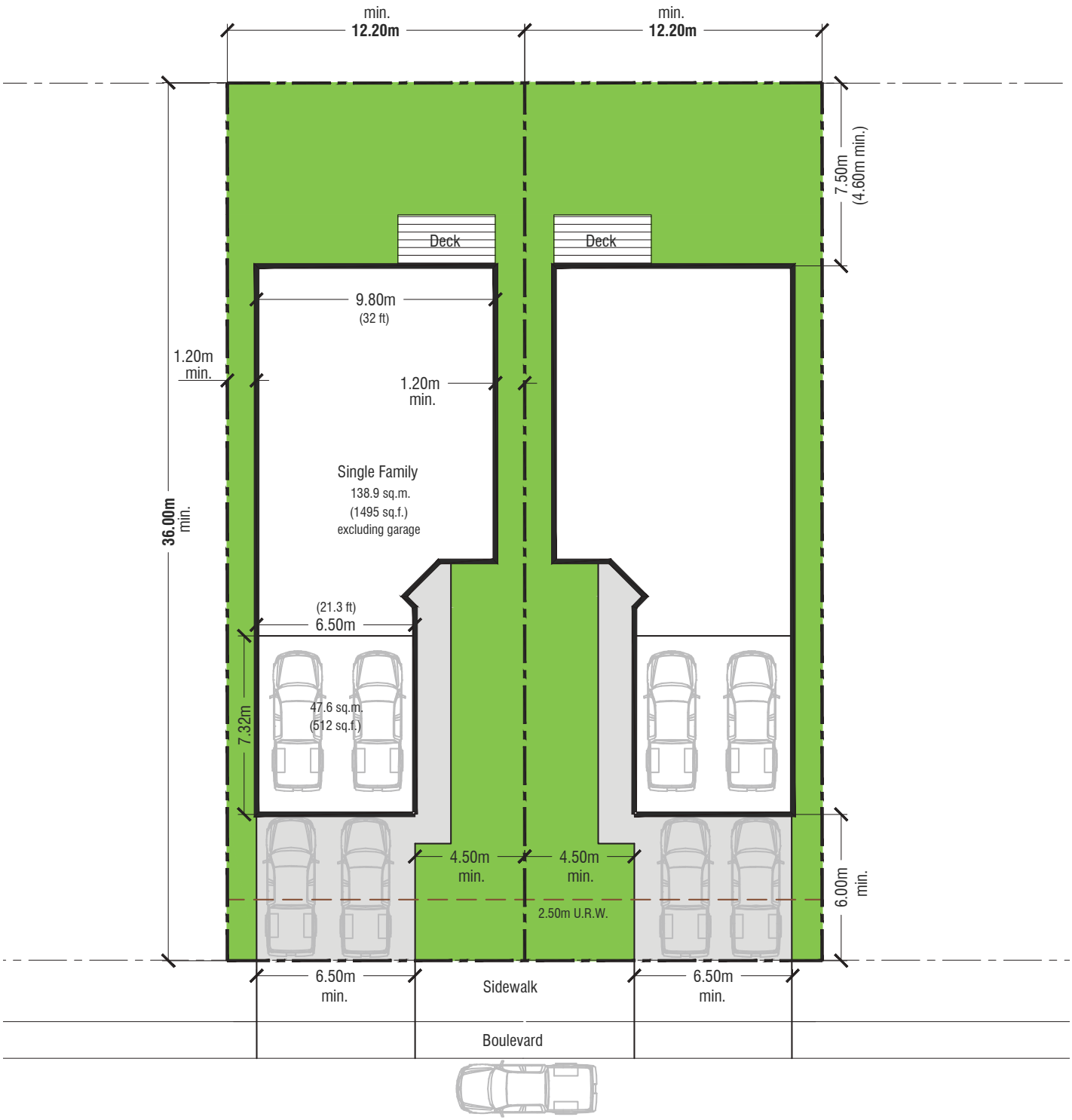
Rotary Lands Outline Plan - Saline Creek Plateau

Section D-D

IBI GROUP

APPENDIX C

LOT DEVELOPMENT TYPOLOGY OPTIONS



MIN. SIDE YARD SETBACK FOR EXTERNAL LOT = 3.0 M

Rotary Lands Outline Plan

Lot Development Typology Option 1 - Single Family with Front Garage

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MIN. SIDE YARD SETBACK FOR EXTERNAL LOT = 3.0 M

Rotary Lands Outline Plan

Lot Development Typology Option 2 - Single Family Detached with Rear Lane Access

IBI GROUP

MIN. SIDE YARD SETBACK FOR EXTERNAL LOT = 3.0 M

Rotary Lands Outline Plan

Lot Development Typology Option 3 - Semi-Detached with Front Garage

IBI GROUP

MIN. SIDE YARD SETBACK FOR EXTERNAL LOT = 3.0 M

Rotary Lands Outline Plan

Lot Development Typology Option 4 - Semi-Detached with Rear Lane Access

IBI GROUP

APPENDIX D.1
BACKGROUND INFORMATION

SALINE CREEK PLATEAU

AREA STRUCTURE PLAN AMENDMENT

Map 6 - Development Concept

NOT TO SCALE

LEGEND

- LOW DENSITY RESIDENTIAL
- MEDIUM DENSITY RESIDENTIAL
- CONVENIENCE COMMERCIAL
- GOLF COURSE
- OPEN SPACE / PARKS / SCHOOLS
- TOP OF BANK SETBACK
- 30m LANDSCAPE BUFFER
- COMMUNITY RECREATION
- VILLAGE COMMERCIAL
- VILLAGE LOW DENSITY RESIDENTIAL
- REGIONAL COMMERCIAL
- AIRPORT COMMERCIAL
- STORMWATER MANAGEMENT FACILITY
- DEVELOPMENT LIMITATIONS
- ENVIRONMENTAL RESERVE
- FIRESMART FIREBREAK
- ASP BOUNDARY
- FUTURE ROAD CONNECTION
- NOISE EXPOSURE CONTOUR
- TOP OF BANK LINE
- REGIONAL TRAIL
- # TRANSIT NODE
- LOCAL ROAD
- EXISTING TRANSMISSION TOWER

IBI GROUP

JUNE 2012

BRAPER ROAD
CLEARWATER RIVER
SALINE CREEK PARKWAY
SALINE CREEK
HIGHWAY 63
MACKENZIE INDUSTRIAL
27
TP 88 R 9
26
PRAIRIE CREEK
HIGHWAY 69
AIRPORT ROAD
CLEARWATER RIVER

J:\29395_KeyanoCollege\5.9 Drawings\59planning\current\ASP Amendment Dwgs\CON34_ASP_amendment_2012-06-14.dwg

APPENDIX D.2
SUPPORTING INFORMATION

Appendix D.2
Supporting Information

D.2.1 EXISTING CONDITIONS

The site is heavily forested with a number of muskeg bogs and marshlands. The Rotary Park campground is located in the south-west corner and an archery range is located in the south-centre. A sand and gravel pit operation is also located in the north-west corner. The Rotary lands are accessed from Range Road 90 which connects to an existing roadway leading to the archery range and a series of cut lines. The site is bound by Airport Road (Township 884A) . The Fort McMurray Rgional Airport is located to the south-east and Keyano College Industrial Training Area (Keyano College Outline Plan area) is the west. Saline Creek is located to the south and the Clearwater River is located to the north. The surrounding area is heavily forested

D.2.2 NATURAL FEATURES

The Rotary Outline Plan lands are bound by the Clearwater River valley Outline Plan area to its north and Saprae Creek valley to its east. The Outline Plan area is comprised of upland areas in the northeast and southwest, and a wetland complex in the centre.

D.2.3 TOPOGRAPHY, SOILS, & VEGETATION

Lands within the Rotary Outline Plan indicate gentle slope towards south and east directions. The lands with the highest elevation of around 375.0 m above sea level (ASL) are located in the northernmost portion of the Plan area. From this highest point, the lands slope towards the Saline Creek and Saprae Creek valleys to the south and east respectively. The lowest elevation along the south and west boundaries is around 360.0 m ASL and 355.0 m ASL in the southeast corner of the Outline Plan area. The centrally located muskeg lands in the Plan area are at an elevation of around 370.0 m ASL and gently slopes in the southwest direction. The slope gradient in the Outline Plan area varies approximately from 5.5% to 2.9%.

The general soil profile was, in descending order: topsoil, muskeg or fill, sand or gravel deposits; and till. A topsoil layer 100 mm to 200 mm thick was encountered to the south of the Golf Course area. Muskeg along the south edge of the Golf Course ranged between 0.7 m and 2.7 metre. A silty clay was found in some areas and ranged up to 1 m in thickness. The clay fill was silty with a firm to stiff consistency. The fill was low to medium plastic, brown and moist. Thickness of silty sand deposits varied between 0.5 m and 1.3 m. The thickness of gravel deposits ranged between 0.7 m to 3.0 m. The deposits were fine to coarse grained, well graded, and dense. The moisture content ranged from 5% to 17%. Glacial clay deposits were encountered bellow the sand and gravel deposits. Presence of water soluble sulphate was identified on the Rotary lands. The concentrations of sulphate are found to be negligible to moderate, posing potential sulphate attack on buried concrete in direct contact with soil.

The subsurface conditions at this site are considered to be suitable for the proposed residential development. Development recommendations are described in the Geotechnical Investigation, Rotary Golf Course Development, Section 30-88-8-W4M (Parkland Geotechnical Consulting Ltd., September 2010). The report identifies the subsurface conditions suitable for the proposed eater features on the Golf Course and provides the development recommendations.

APPENDIX E

LIST OF TECHNICAL STUDIES UNDERTAKEN

	LIST OF TECHNICAL STUDIES	PREPARED BY	YEAR
1	Saline Creek Plateau Outline Plan - Traffic Impact Assessment	Bunt & Associates	2012
2	Geotechnical Investigation - Rotary Golf Course and Land Development Section 30-88-8-W4M	Parkland Geotechnical Consulting Ltd.	2010
3	Supplementary Geotechnical Investigation - Preliminary Letter, Rotary Golf Course and Land Development	Parkland Geotechnical Consulting Ltd.	2011
4	Rotary Club Wetland Assessment, Fort McMurray, Alberta	Stantec Consulting Ltd.	2010
5	Species at Risk Inventory for Proposed Golf Course Location	Stantec Consulting Ltd.	2010
6	Migratory Bird Mitigation Plan for Stormwater Pond and Golf Course Water Feature Development at Rotary Lands (Pts. of 88-8-W4M)	EnviroMak Inc. Environmental Management Consultants	2013
7	Rotary Lands Saline Creek Water Servicing Design Brief - DRAFT	IBI Group	2013
8	Rotary Lands (Saline Creek) - Fort McMurray, AB Stormwater Management Plan	IBI Group	2012