SAPRAE INDUSTRIAL
Outline Plan

PANATTONI DEVELOPMENT COMPANY
August 2014

Regional Municipality of Wood Buffalo

Approved August 22, 2014

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Stantec

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1.0 introduction

1.1 PURPOSE

The purpose of the Saprae Industrial Outline Plan is to describe the development objectives for the Plan Area (NW ¼ Sec. 22 Twp. 88 Rge. 8, W4M), located east of the Fort McMurray Municipal Airport and southwest of the Saprae Creek community.

1.2 PROJECT HISTORY

The Saprae Industrial development stems from an existing need in the Regional Municipality of Wood Buffalo (RMWB) for additional commercial and industrial land. This need was reviewed and identified in the 2010 Commercial and Industrial Land Use Study (CILUS) further described later in this Plan.

In addition to the shortage of industrial land as recognized by the RMWB, existing businesses in the Plan Area have expressed a need to expand their operations by way of ownership of subdivided lots; this desire may lead to businesses moving out of the area should the development not be completed. It is intended for the Saprae Industrial development to relieve some of the aforementioned pressures currently present in the RMWB.

1.3 LOCATION AND SIZE

Located east of the Fort McMurray Municipal Airport and southwest of the Saprae Creek community, Saprae Industrial is within the Urban Development Sub-Region (UDSR) and expected to be included in the Urban Serive Area (USA) shortly. The Plan Area's location is as shown in **Figure 1.0 – Location Plan**.

The legal boundaries of the Plan Area are shown on **Figure 2.0 - Legal Boundary**; which encompasses approximately 93.52 ac (37.85 ha).

1.4 ACCESS

The Saprae Industrial Park is currently accessible via Range Road 83, which connects to Highway 69 south of the site. The intersection of Range Road 83 and Highway 69 has been operational since the Province of Alberta began leasing the land for industrial purposes in the 1970s.

Highway 69, in the vicinity of the proposed development is a two-lane, undivided roadway running in a northwest-southeast orientation, east of the proposed development with a proposed posted speed of 60 km/h.

Range Road 83 is currently a two-lane gravel roadway which connects to Highway 69. This road has been identified in the Fort McMurray Municipal Airport Development Plan as the future East Airport Boundary Road and may need to be upgraded to a paved road at such a time that this access is utilized for the Airport. Range Road 83 dead-ends north of the proposed subdivision.

1.5 EXISTING USE

The Plan Area has been used since the 1970s for unregulated industrial uses that primarily utilize the area for outdoor storage. This area has since become run-down, is not in compliance with the RMWB Land Use Bylaw, and has been given until the end of 2014 to cease and desist until such time as order (planning and construction to modern standards) can be brought to the land.

1.6 LAND OWNERSHIP

There are existing businesses operating inside of the Saprae Industrial development under temporary leases; however, the entire Plan Area is contracted for purchase and full development by a single purpose entity created by Panattoni Development Company. This transaction is expected to be completed in August 2014.

Site Location

N

Legend

Outline Plan Boundary

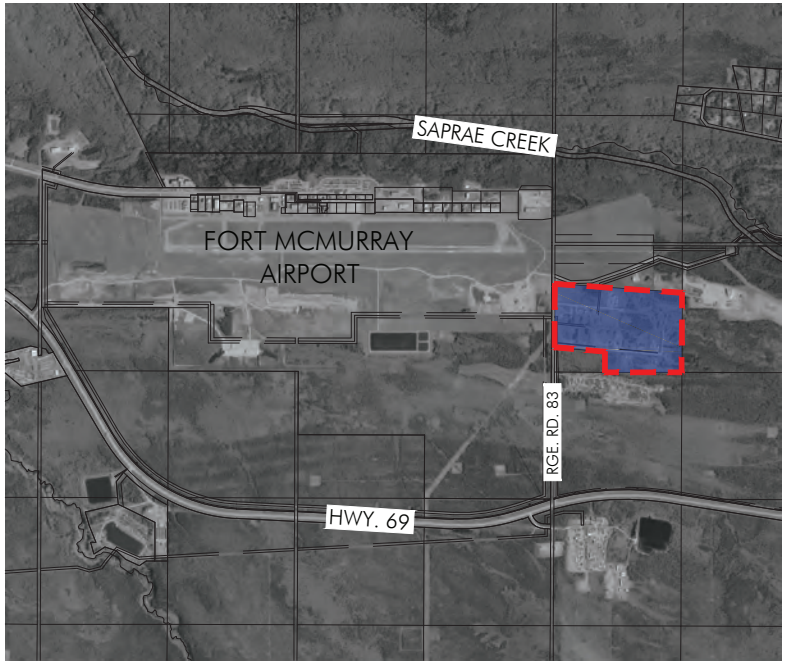

Figure 1.0 - Location Plan

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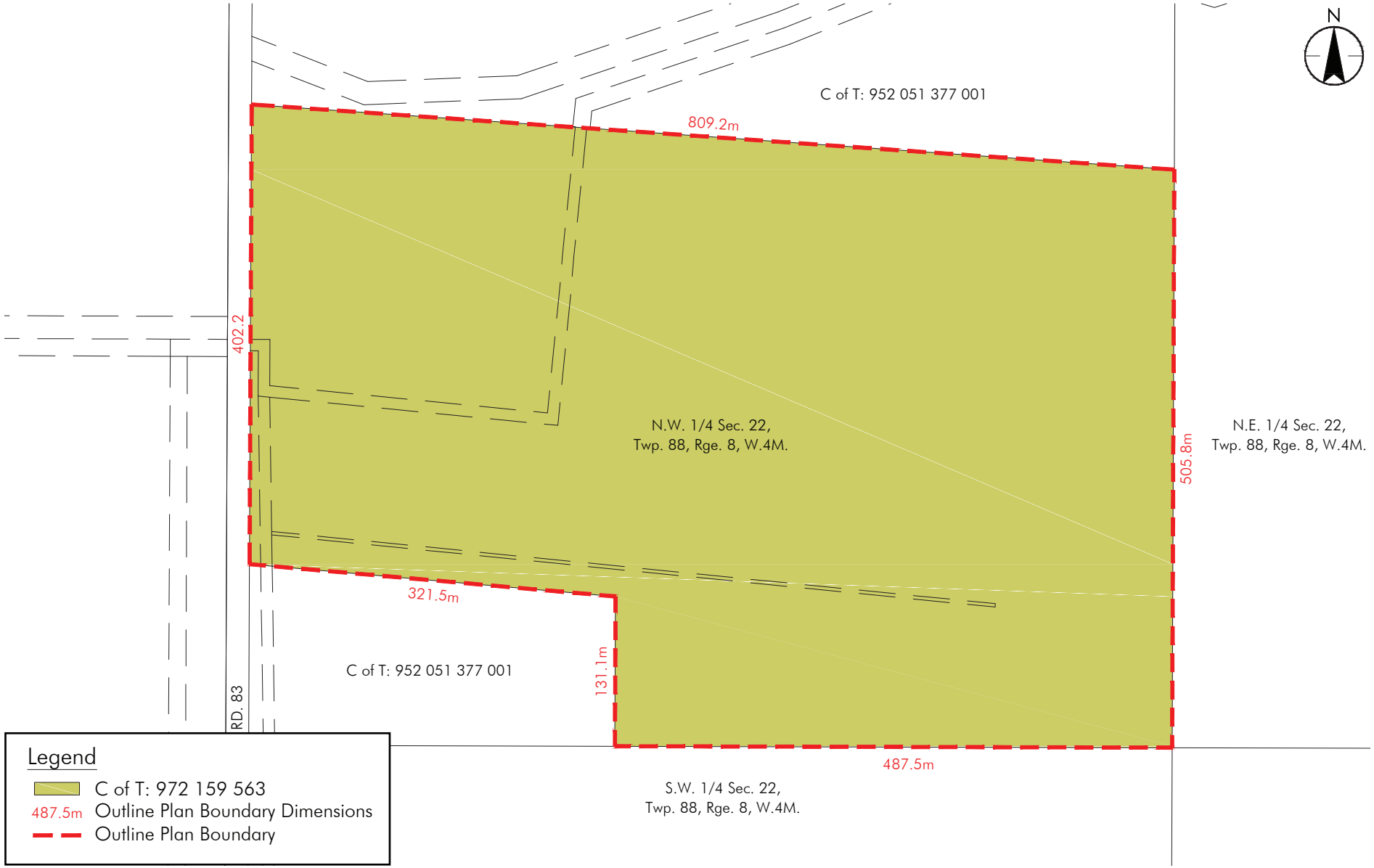

Figure 2.0 - Legal Boundary

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2.0 supporting documents

The Saprae Industrial Outline Plan has been prepared using the guidelines and policies set forth by the Regional Municipality of Wood Buffalo for the development of new areas.

2.1 POLICIES AND RELEVANT PLANNING

The following relevant documents have been reviewed and referenced in preparation of this Outline Plan.

- **General**
  - » Municipal Government Act (2000)
  - » RMWB Municipal Development Plan (2011)
  - » RMWB Land Use Bylaw (2012 Amendment)
  - » Highway 69/Clearwater River Valley Area Structure Plan (2012 Amendment)
  - » RMWB Commercial and Industrial Land Use Study (2010)
  - » RMWB Water Master Plan (2011)
  - » RMWB Wastewater Master Plan (2009)
  - » RWMB Engineering and Servicing Standards (2013)
  - » FireSmart: Protecting Your Community from Wildfire (2003)
  - » Alberta Bear Smart Program Manual (2011)
- **Airport Planning**
  - » Fort McMurray Airport Zoning Regulations (2014)
  - » YYM Master Plan (2011)
  - » Fort McMurray Municipal Airport Area Structure Plan (2012 Amendment)
  - » TP 1247 - Aviation - Land Use in the Vicinity of Airports (2005)

2.1.1 Policies for Consideration

Municipal Development Plan (2011)

A variety of preferences are identified within the MDP which will guide the development proposed within the Plan Area.

- The MDP identifies that the RMWB should support the expansion and economic development in the Airport Area
  - » The Saprae Industrial area could include businesses that are supportive or complementary to the airport.
- Support strong secondary industrial sectors
  - » The Saprae Industrial area will provide a location for these secondary industrial uses such as office space and storage space for construction and transportation businesses.

Highway 69/Clearwater River Valley Area Structure Plan Bylaw No 12/010 (2012)

The following policies within the Highway 69/Clearwater River Valley ASP directly apply to the development of the Saprae Industrial Area:

- Promote a land use pattern that does not inhibit present and future operations of the Fort McMurray Regional Airport
  - » The Saprae Industrial development is a compatible use that can be safely and appropriately located adjacent to the airport.
- Lands surrounding the airport are regulated by the Fort McMurray Municipal Airport Zoning Regulations C.R.C., c. 82, which protects the approach and take off area and the outer surface area of the airport and ensures no new development is built in a manner that will threaten the future safe and continued operation of the airport.
  - » All development within the Saprae Industrial area will be regulated by the associated regulations of the YMM Airport to promote a safe environment for all airport users.

Fort McMurray Municipal Airport Area Structure Plan (2012)

The Saprae Industrial Plan Area is identified in this ASP as being located in the Airport Vicinity which included the following regulations.

- All uses and developments in the Airport vicinity boundary shall be circulated to the Airport Authority for review and recommendation to the Development Authority.
- One of the important considerations for this area is to ensure there are no uses that may attract bird hazards, such as landfills or stormwater management with permanent standing pools of water.
- No land uses that can create smoke or steam, penetrate the take-off and approach and transition areas, attract birds or wildlife nor create any electrical interference will be permitted.
- The Saprae Industrial area will not include any land uses that are sensitive to noise.
- Stormwater management ponds will be located in safe areas and modified so as not to create an inviting place for birds.

2.2 ASSOCIATED STUDIES

The following studies have been completed to support the Saprae Industrial Outline Plan.

2.2.1 Biophysical Site Assessment (2011)

A biophysical site assessment was completed in July 2011 by EnviroMak Inc. Environmental Management Consultants. The purpose of the biophysical site assessment was to determine if there was any specific environmental features that would influence the development of the NW ¼ Sec. 22-88-08-W4M. The results of this study are discussed throughout **Section 3.0 - Existing Conditions**.

Recommendations

The following recommendations were made in the Biophysical Assessment:

- Additional assessments were to be considered including:
  - » an AESRD assessment of wetland ownership,
  - » determination of suitable buffer areas for riparian areas,
  - » development of a stormwater management plan,
  - » a plan to mitigate any harmful efforts such as an Environmental Protection Plan.
- Retention and/or incorporation of the mixedwood area in the north section of the property into the overall development to provide a habitat for wildlife.
- Retention and/or incorporation of wet areas into a stormwater management plan
- Should the wet areas not be retained, conditional approval will be required prior to further removal plans. Compensation would be determined by AESRD
- If wet areas are to be altered they will first require purchase from the Government of Alberta
- The removal of the bear den will require communication with AESRD to ensure bears are not in hibernation
- Removal of forested and wet areas will require mitigation measures to address nesting migratory birds

To follow up with this Biophysical Site Assessment, a Wetland Assessment was completed in 2014; this Assessment is described in **Section 2.3.6 - Wetland Assessment (2014)** and the *Saprae Industrial Stormwater Management Report (2014)*, available under separate cover, and briefly discussed in **Section 2.2.5 - Stormwater Management Report (2014)**.

2.2.2 Saprae Industrial Park Preliminary Geotechnical Investigation (2014)

Thurber Engineering Ltd. completed a Preliminary Geotechnical Investigation on the Plan Area in May 2014 to provide recommendations for general suitability of the proposed development. The investigation was labelled 'preliminary' to identify that it was for the purpose of subdivision construction, not specific foundation recommendations for individual lots.

The results of the geotechnical investigation indicated that the site was generally suitable for the proposed industrial and commercial development. Within the low lying areas, relatively high groundwater levels were anticipated coupled with relatively thick layers of peat/ organic soils and weak clays beneath the peat.

Recommendations

Based on the findings of this Investigation, removal of the peat soils and unstable material would be required for any development planned for the area. Additional site preparation guidelines are described in the report, available under separate cover. All site preparation recommendations will be utilized during the construction of the Saprae Industrial development.

2.2.3 Environmental Site Assessment (2014)

Worley Parsons completed a Phase One Environmental Site Assessment (ESA) for the Plan Area in June 2014 to

identify actual and potential sources of environmental contamination from on or off-site sources, considering current and historical uses.

The Phase I ESA identified historical and current on site operations of potential environmental concern in the northwest, west central and south portions of the Plan Area.

Recommendations

An additional soil and/or groundwater assessment was recommend for the Plan Area. As directed by this recommendation, a Phase 2 Environmental Site Assessment was completed for the Plan Area. The Phase 2 ESA should be available for review around August 1, 2014.

Any additional recommendations made for work within the Plan Area will be handled by isolating the identified areas from those which are certified as clean. In this way, further ground disturbance will be minimized as necessary clean-up work occurs.

2.2.4 Wetland Assessment (2014)

Stantec Consulting Ltd. completed a detailed wetland assessment of the Plan Area in July 2014 to provide an understanding of wetlands within the Study Area. The desktop review, aerial photography assessment, and field evaluations, indicated the presence of two fen/ swamp complexes but also long history of both soils and vegetation disturbances.

Over time, the ecology of the wetland communities have been significantly altered through processes of vegetation stripping, gravel mining, earthworks, and the construction of drainages. As a result of these disturbances, numerous open-water features developed, including a dugout that have since partially naturalized. During the site visit it was apparent that these open-water cells were connected via ditches and were being drained off-site. In addition, it was observed that the majority of the Study Area was disturbed and cleared. In summary, it was determined that the wet areas currently residing on the Study Area are not natural wetlands.

Recommendations

Historically, peatlands have commonly been exempt from compensation; however, approvals are still required.

In July 2014, AESRD provided formal approval to the Developer that stated the following:

> *"ESRD does not require an approval or compensation for the wetland disturbance at the site, as the wetlands are comprised of peat land and have already been disturbed. The only open water is presented as a result of anthropengenic processes as evidenced by the historical aerial photographs and have not been claimed by the Crown.*
>
> *It should be noted that activities will still need to be in compliance with the Water Act and any releases or disturbances to waterbodies (in this case, potentially downstream of any discharged water) should be reported to Compliance. The work involved with the stormwater pond will be handled under a separate approval."*

Other regulatory requirements under legislation such as the *Wildlife Act* and *Migratory Birds Convention Act* may need to be satisfied prior to development such as a breeding bird survey conducted prior to any clearing to minimize impact within the active nesting season.

2.2.5 Traffic Impact Assessment (2014)

A Traffic Impact Assessment (TIA) for the Saprae Industrial Park Plan Area has been completed by Stantec Consulting Ltd. to analyze the current transportation connection into the Plan areas and make projections about future roadway network requirements.

Recommendations

The TIA analyzed the intersection of Highway 69 / Range Road 83 and identified potential upgrades needed for the intersection to operate at acceptable levels. These upgrades include the following:

- The 2017 Alternative 1 scenario warrants a Type IVa intersection with an additional 15 m of left turn lane and 35 m of right turn lane storage at the intersection of Highway 69 / Range Road 83. All movements will operate at LOS C or better and v/c ratio less than 0.85.
- The 2017 Alternative 2 scenario warrants a Type IVa intersection with an additional 25 m of left turn lane and 35 m of right turn lane storage at the intersection of Highway 69 / Range Road 83. All movements will operate at LOS C or better and v/c ratio 0.85 or less.
- The 2034 Alternative 1 scenario warrants a Type IVa intersection with an additional 40 m of left turn lane and 35 m of right turn lane storage at the intersection of Highway 69 / Range Road 83. All movements will operate at LOS D or better and v/c ratio 0.85 or less.
- The 2034 Alternative 2 scenario warrants a signalized intersection with dual eastbound left turn lanes and a southbound free-flow right-turn lane. The storage required for the eastbound left turn is 110 m and 15 m for the westbound right turn lane. All movements will operate at LOS D or better and v/c ratio 0.85 or less.

- Illumination is not warranted for the Highway 69/ Range Road 83 intersection, except in the 2034 Alternative 2 scenario where signalization is warranted (full illumination is warranted with signalization).

These improvements will be completed at population horizons as identified in the TIA. Details of the analysis and the required improvements are included in the TIA available under a separate cover.

2.2.6 Stormwater Management Report (2014)

Stantec Consulting Ltd. completed a Stormwater Management Report in June 2014 for the Plan Area to complement the engineering design drawings prepared for the Saprae Industrial development. The objective of this study was to demonstrate that the proposed stormwater management facility will meet Alberta Environment and Sustainable Resource Development's (AESRD) criteria for permissible release rate and water quality improvement. It was also intended to outline the proposed configuration for the drainage systems within the development.

The Stormwater Management Report is further discussed in **Section 6.2 - Storm Sewer System**; however, the following conclusions and recommendations were made.

Recommendations

Due to the potential impacts that the Saprae Industrial development could have on the operations of the adjacent Fort McMurray Airport, the development will take steps to minimize wildlife and birds in the Plan Area. To do this, a dry pond is being proposed to reduce the desire for migratory birds to be attracted to the site, and any remaining forested areas will be removed to reduce the amount of wildlife habitat.

The dry pond will have an active depth of 1.5 m with no permanent storage and the interior slopes of the pond sides will be slightly steepened to be seen as less inviting to birds. The pond discharge will be controlled to the pre-development release rate of 3.5 L/s/ha, which is stated in the RMWB design guidelines for new developments.

The pond will discharge to the north into an existing drainage channel. With a few minor upgrades downstream, this outlet will not negatively impact the environment or adjacent land. Therefore this outlet is considered adequate.

The Single Event modeling demonstrates that the proposed dry pond will have adequate live storage to attenuate the peak flows resulting from a 24 hour duration, 1:100 year design storm event. A basic calculation using the available active storage and discharge rates also demonstrates that the facility will provide a detention time of greater than 24 hours.

Detail design will show that if there are any off-site flows; they can be routed around the proposed lots and continue to function as they do today.

The Saprae Industrial development will have an overland drainage storm system with roads, bioswales, and culverts. Overland drainage shall conform to the RMWB Guidelines, and also the water velocity and depth relations as outlined in the Alberta Environment Stormwater Management Guidelines.

3.0 existing conditions

3.1 TOPOGRAPHY

Regional topography in the vicinity of the Saprae Industrial Plan Area slopes north towards Saprae Creek and the Christina River which runs from east to west, approximately 2.5 km north of the Plan Area.

Plan Area topography has been modified through development activities since the 1970s. Overall, the site topography slopes to the northeast.

3.1.1 Existing Drainage

Currently, surface water runoff drains through infiltration or is directed to roadside ditches located parallel to the north and south site access roads. A haphazard drainage system comprised of a series of ditches was constructed in the north central and northeast portions of the Plan Area in the late 1970s. The drainage ditches direct surface water originating from in the Plan Area, northward off site.

3.2 SOILS

Regionally, soils are predominantly Grey Luvisols. As noted in the 2011 Biophysical Assessment, the area was characterized by Luvisolic and Brunisolic soils on mineral terrain with poorly drained areas containing Gleysolic and Organize soils.

Peat lands were found during the Geotechnical Investigation which ranged from 0.3m to 1.2m in depth. The natural moisture content of the peat ranged between about 28-389%.

Within the low lying areas, relatively high groundwater levels are anticipated coupled with relatively thick layers of peat/ organic soils and weak clays beneath the peat. Removal of the peat soils will be required for any development planned for the area.

3.3 VEGETATION

As noted in the 2011 Biophysical Assessment, the Plan Area is located within the Central Mixedwood Subregion of the Boreal Forest Natural Region which covered 32% of the Plan Area in 2011. The types of vegetation coverage within the mixedwood forest classification included the following broad associations of trees and shrubs:

- small-sized aspen, balsam poplar, and various shrubs
- clear cut with re-growth of mixedwood forest species
- white spruce dominated areas

In addition to mixedwood forest, 16.7% of the Plan Area was also covered by open grassland.

Based on historic aerial photographs, between 1967 and 1975 much of the area was stripped and cleared. Developed area in 2011 was noted as 46% of the Plan Area. Disturbance by other parties since that time has primarily denuded the entire Plan Area.

3.4 WET AREAS

3.4.1 Wetlands

In the 2011 Biophysical Assessment, four wetlands were noted inside the Plan Area, all of which were identified as Class IV. These wetlands included cattails, rush, sedge, bulrush, and willows and containing considerable aquatic including insects, amphibians, birds, and beavers; however, no fish.

In the 2014 Wetland Assessment, eight wet areas were noted inside the Plan Area. These areas were seen to be caused by excavations and stripping to gather borrow material, the result of which created low spots where water could pool. Each of the wet areas had been stripped

of vegetation with the soils also being disturbed. Much of the area had started to regenerate, but alterations to soils, organics and hydrology had caused an alteration of the apparent wetland ecology observed on site.

The majority of the wet areas on site were noted as being dominated by litter, brush, and slash with soil upturned.

3.4.2 Watercourses

The Biophysical Assessment completed in 2011 noted that there were two watercourses present in the Plan Area that were not well-defined and did not have flowing water. These courses were seen to flow water between wetlands and then off-site.

In the 2014 Wetland Study, these water courses were identified as man-made ditches, created sometime between 1975 and 1985.

Flooding

The Plan Area is not identified by the Alberta Flood Hazard Mapping.

3.4.3 AESRD Approval

The Saprae Industrial Plan Area was reviewed by AESRD in 2012. At this time it was stated that the Crown would not assert a claim under Section 3 of the Public Lands Act to any features within the Plan Area.

In 2014 the Saprae Industrial Plan Area was reviewed by the Lower Athabasca Approvals Manager for AESRD who stated,

> *Based on the Saprae Industrial Park Wetland Assessment, our discussions today and similar practices in the past, ESRD does not require an approval or compensation for the wetland disturbances at the site, as the wetlands are comprised of peat land and have already been disturbed. The only open water is present as a result of anthropeogenic processes as evidenced by the historical aerial photographs and have not been claimed by the Crown.*

A copy of both of the above noted correspondence is included in **Appendix A**.

3.5 WILDLIFE

A search of the Fisheries and Wildlife Management Information System indicated the presence of Woodland caribou within a 2km radius of the Plan Area. No other rare or endangered terrestrial plant of animal resources at this located were identified. According to the land capability for wildlife-waterfowl map, the area was classified as having severe limitations to the productions of waterfowl.

The undisturbed portion of the Plan Area was noted as providing wildlife habitat for moose, white-tailed deer, ruffed grouse, nesting migratory birds, cavity nesters, northern varying hare, raven, beaver, and various small mammals. In addition, one black bear den was identified.

The subsequent 2014 assessment and review noted the black bear den had been abandoned and, due to the massive disturbance of the site since 2011, indicated a much lower quality of habitat presence.

Due to the Plan Area's proximity to the airport, these habitat areas are not desirable and will not be maintained.

3.6 BUILT ENVIRONMENT

A dugout is located in the southeast portion of the Plan Area. Based on historic aerial photos, this dug out was created sometime between 1967 and 1975 as a borrow pit.

Two roadways are constructed in the Plan Area, both connecting to Range Road 83 and running west to east. The southern-most roadway extends north at its eastern extent.

3.7 RECENT CLEAN UP

Between 2010 and 2013, outside parties to this proposal oversaw the removal of approximately 1,000 to 2,000 vehicles and 7,000 to 8,000 tires. Historical buildings/ shacks were dismantled and the construction debris disposed off-site at the Regional Municipality of Wood Buffalo municipal landfill. All liquid wastes, assumed hazardous waste or un-characterized waste was removed and disposed off site in Nisku, Alberta. Any visually stained soil, soil exhibiting odours or areas with reduced vegetation growth were stripped and the material stockpiled. Areas of sand blasting sand accumulations were excavated to approximately 0.15 mbgs.

3.8 EXISTING UTILITIES

As shown on **Figure 3.0 - Existing Conditions**, there are three pipeline rights-of-way running through the Plan Area. Utility Rights-of-Way will not be developed on. A setback of their width will be used to allow for future access to these lines.

952 1227

This right-of-way runs along the southern boundary of the Plan Area and is registered to ATCO Gas and Pipelines Ltd. This right-of-way is 3m in width.

At the time of construction, the pipeline will be removed and replaced with a new line which services the Plan Area.

862 1516

This right-of-way runs parallel along the southwest boundary of the Plan Area. This right-of-way is registered to ATCO Gas and Pipelines Ltd and is 10m in width.

The pipeline associated with this right-of-way is abandoned.

862 1388

This right-of-way runs from the western boundary of the Plan Area east, then north out of the Plan Area. This right-of-way is registered to ATCO Gas and Pipelines Ltd and is 10m in width.

3.9 LAND USE

The Plan Area is currently zoned under the RMWB Land Use Bylaw as BI - Business Industrial. This district is to be used for industrial uses.

As shown on **Figure 4.0 - Existing Conditions**, the Plan Area has been utilized by a variety of businesses including auto body work, sandblasting, and recycling. There is also a significant amount of general refuse within the Plan Area including scraps from many demolished buildings.

3.9.1 Historic Use

Historic records review indicates that the Site was undeveloped forested land owned by the Crown prior to 1975. The Site was developed in the mid-1980s. Historical site operations included auto body work, sandblasting, and recycling but that the main operations were sales of scrap automotive parts. Former vehicles, tires, on site buildings, visually stained soils and solid and liquid wastes were removed from the Site between 2010 and 2013.

The current on-site tenants must vacate the Plan Area this year by order of the RMWB.

3.9.2 Surrounding Land Uses

Surrounding land use to the east and north has historically and currently been primarily natural forested land. As shown on **Figure 4.0 - Airport Vicinity Boundary**, the Fort McMurray airport is located immediately west of the Plan Area.

South of the Plan Area is a large lot being use for the storage and sale of auto body parts. This area stores approximately 1,000 non-functioning vehicles at a time and is noted as a general eyesore. A pump house and water reservoir is located north of the Plan Area.

3.10 HISTORICAL RESOURCES

The Alberta Listing of Historic Resources (March 2014) does not identify the Plan Area for historical resources. No Historical Resource Act Clearance will be required.

Figure 3.0 - Existing Conditions

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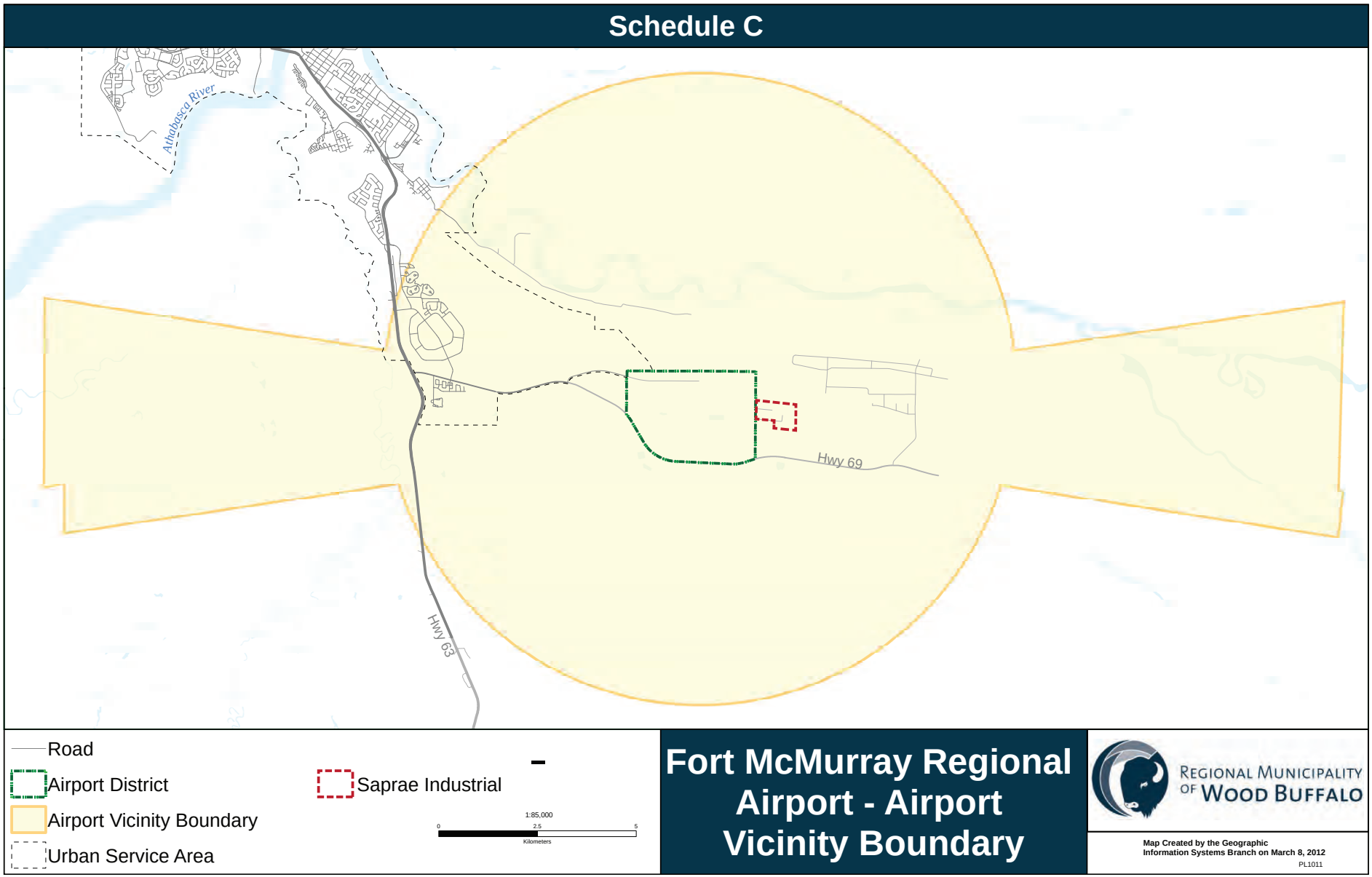


Figure 4.0 - Airport Vicinity Boundary

4.0 development concept

4.1 LAND USES

Panattoni Development Company is committed to redeveloping this industrial development by dramatically improving the site into a high quality and complete industrial subdivision.

The mass clean-up, subdivision of individual lots, construction of a paved roadway, and servicing will assist in achieving this goal of improving the function and aesthetics of the site.

4.1.1 Industrial Use

As shown on **Figure 5.0 - Concept Plan**, and **Figure 6.0 - Concept Plan with Aerial**, 30 industrial lots, as well as required public utility lots (PUL), comprise the Saprae Industrial Plan Area. These lots range in size from 1.5 to 5 acres with larger lots located toward the east side of the development. The linear layout allows large vehicles to maneuver the site and also provides business owners the flexibility to purchase one or more lots and expand their operations if required.

This design is intended to provide a range of industrial options and reduce the industrial land shortage currently experienced in the region. In addition, the proposed development will take advantage of the opportunities provided by its close proximity to the Airport and Highway 69, a main transportation route in the region.

Discretionary Uses

The Business Industrial District currently allows for a wide range of commercial businesses and general industrial uses which do not adversely affect surrounding non-industrial uses through the generation of emissions, noise, odors, vibrations, heat, bright light, or dust. All uses in this District are discretionary.

Saprae Industrial Park is envisioned to accommodate the following land uses:

- Storage (outdoor)
- Equipment
- Warehousing

Table 1.1 - Land Use Allocation.

Land Use Category	Hectares	Acres	% of NDA	# of Lots
Gross Plan Area	**38.43**	**94.97**		
--	--	--		
Net Developable Area (NDA)	**38.43**	**94.97**	**100.00%**	
Industrial	**30.14**	**74.47**	**78.4%**	**30**
BI - Business Industrial	*30.14*	*74.47*	*78.4%*	*30*
Public Utility Lot	**3.25**	**8.04**	**8.5%**	
Stormwater Management Facility (PUL)	*3.25*	*8.04*	*8.5%*	
Transportation	**5.04**	**12.46**	**13.1%**	
Collector Roadway	*5.04*	*12.46*	*13.1%*	

- Processing
- Distributions
- Sales
- Airport Support Services

4.1.2 Municipal Reserve

Due to the location of Saprae Industrial being adjacent the Fort McMurray airport, and the type of land uses envisioned in the development, a Municipal Reserve dedication has not been identified.

The Developer has agreed to provide money to the RMWB in place of municipal reserve lands. As outlined in the MGA, 10% of the Plan Area shall be dedicated. This amount will account for the value of 3.84ha (9.50ac).

4.1.3 Stormwater Management

As described in **Section 4.2.1 - Policies Surrounding the Airport**, all stormwater management ponds surrounding the airport must be designed in such a way that does not attract birds. To minimize its attraction of birds, the storm pond located in the Saprae Industrial development will be constructed as a dry pond with slightly steepened slopes. This area will be zoned as Public Utility Lot (PUL),and is further described in **Section 6.2.2 - Dry Pond**.

4.2 ADDITIONAL CONSIDERATIONS

The following items are identified as considerations for the development of Saprae Industrial development.

4.2.1 Policies Surrounding the Airport

The primary development consideration for Saprae Industrial is its proximity to the Fort McMurray Municipal Airport.

As outlined in the *TP 1247 - Aviation - Land Use in the Vicinity of Airports*, the following items must be reviewed as hazards to the airport:

- **Smoke, Dust, or Steam**

  Some industrial processes generate smoke, dust, or steam in sufficient volume to constitute a restriction to visibility under certain wind conditions and temperature inversion. Examples of the types of industries include pulp mills, steel mills, quarries, municipal or other incinerators, cement plants, sawmills (slash and sawdust burners), and refineries.

  An analysis of meteorological records at many airports has concluded that there is little doubt, locations to the east of the airport create the most significant conditions when poor weather prevails. In addition, it has been noted that such industries generating visibility restrictions be located at least four to five statute miles away from the easterly boundary of an airport; therefore, no such uses will be permitted in the Saprae Industrial development.

- **Height**

  Height restrictions are required surrounding the Airport's runway for several safety purposes.

  The *YMM Master Plan* identifies several regulations regarding building height and construction material within certain zones surrounding the Airport. These regulations will need to be reviewed on a per-lot basis to determine compliance.

  Regardless of written regulations, all new and modified development in the Saprae Industrial area will be reviewed by the Fort McMurray Municipal Airport Authority to prevent any potentially negative impacts on the Airport. These regulations may be identified in the new RMWB Land Use Bylaw or will be determined as part of the development permit process.

- **Electrical Interference**

  No land uses which have the potential for electrical interference with airport operations (air traffic control radar, weather radar, radio communications, navigation aids, or instrument landing systems) will be permitted. These interferences may include those that are receiving or transmitting signals, structures that can block signals, and structures that can reflect signals such as those with metallic surfaces.

  All large structures constructed in Saprae Industrial development must be reviewed by Transport Canada and the Fort McMurray Airport to ensure they will not interfere with the airport's operations.

- **Wildlife**

  No uses that have the potential to attract wildlife, specifically birds, will be permitted in the Saprae Industrial area. These uses include stormwater management ponds with a permanent water surface and landfills. In addition, standing water of any kind, exposed garbage containers, and planting vegetation that produces fruit or seeds is also discouraged.

- **Noise**

  As shown in the *YMM Master Plan*, the Saprae Industrial development is located primarily within the NEF 30 and 25 contour with the northwest portion of the site located in the 35 contour. These contours represent noise levels, as generated by aviation operations, and correspond to a Land Use Table within the *TP 1247 - Aviation - Land Use in the Vicinity of Airports*, by Transport Canada. This

table identifies types of development which are anticipated to be acceptable for location in each one of the contour zones, based solely on their impact from aviation noise.

Reference to the *TP 1247 - Aviation - Land Use in the Vicinity of Airports* will provide a guide to which uses may be permitted where throughout the Plan Area.

4.2.4 Built Form

The Saprae Industrial Development Site Development Guidelines (under separate cover) have been prepared to guide developers, builders, architects, engineers, and property owners in the design, development, and construction of projects within the Plan Area. This document will ensure Saprae Industrial will be developed as a cohesive area and completed in the manner in which it was envisioned.

The following topics are addressed in the Site Development Guidelines:

- Site Design
- Building Design
- Screening
- Parking
- Access
- Landscaping
- Signs
- Lighting

All recommendations in the Guidelines are to be completed on a voluntary basis and do not prevail over the RMWB's Land Use Bylaw.

4.3 BEAR SMART

The Alberta BearSmart program seeks to reduce human-bear conflicts and increase public stewardship in Alberta by raising awareness about how humans can become "BearSmart". These Bear Smart principles have been incorporated in the culture of living in the RMWB: how to minimize the chance of a bear encounter, making oneself and employees familiar with bears and how to deal with bear encounters, etc.

Fort McMurray is located in the black bear range and as such, the Saprae Industrial development will utilize the following BearSmart principles to minimize bear encounters in the Plan Area:

- encourage enclosed garbage containers
- maintain clean storage areas
- avoid landscaping that includes fruit-bearing trees
- encourage fencing of individual lots
- promote education of employees regarding bear safety

4.4 FIRESMART

FireSmart's main goal is to educate the public on how to minimize the risk of wildfire. Key elements of the FireSmart initiative are: landscaping, access, and architectural controls.

In accordance with FireSmart principles, the Plan Area will be cleared of all vegetation to minimize wildfire fuel. In addition, all lots should be designed utilizing FireSmart guidelines to reduce the risk of wildlife. This should include a 10m priority zone around all buildings which does not contain flammable vegetation, and a fire break area 10-30m from the building with thinned vegetation, and utilizing noncombustible construction materials.

4.5 EMERGENCY SERVICES

Emergency services will be provided for the Saprae Industrial area by the RMWB Regional Emergency Services. The closest Fire Hall to the Saprae Industrial Plan Area is Fort McMurray Fire Hall 5, located along Airport Road.

Figure 5.0 - Concept Plan

Stantec

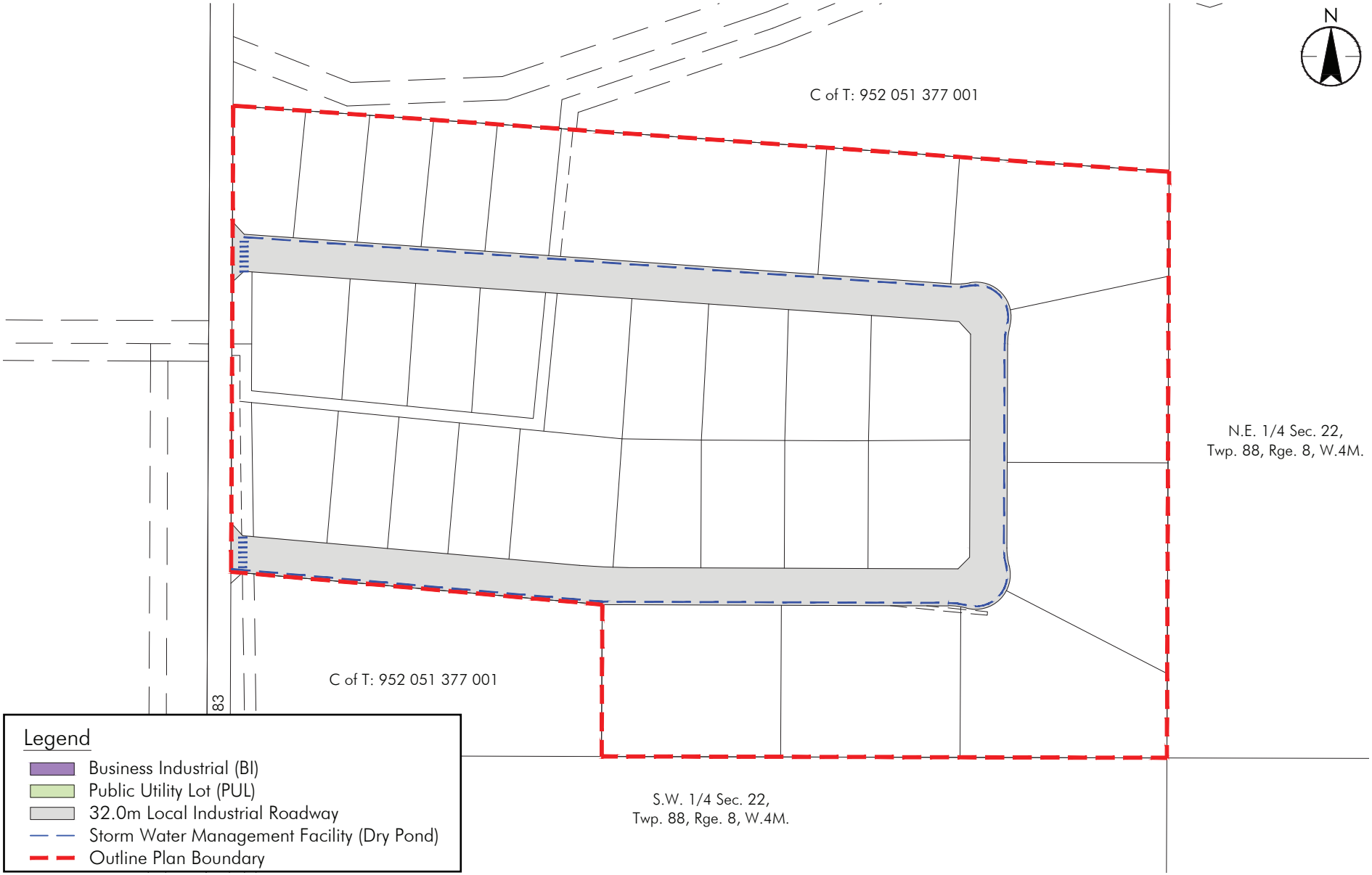


Figure 6.0 - Concept Plan with Aerial

Stantec

5.0 transportation network

5.1 ACCESS

Access to the Saprae Industrial Area will be via Range Road 83. This road has been identified in the Fort McMurray Municipal Airport Development Plan as a future East Access Road and will be fully upgraded to a paved road adjacent to the development when future traffic volumes warrant the improvements. This project will construct full width improvements on the project frontage portion. Due to the limited amount of land existing, and having no additional land available to widen the road, this roadway will be designed as an urban industrial collector with a 20.12m wide right-of-way and 9.0m wide carriageway.

5.1.1 Range Road 83

As discussed in **Section 2.3.4 - Traffic Impact Assessment**, Range Road 83 will be utilized to access the Saprae Industrial development.

To facilitate use of this roadway, a number of required improvements were identified in the TIA. Two of these improvements include the following:

- upgrading the roadway, along Saprae Industrial development's west boundary to an Urban Collector standard with 9.0m wide paved carriageway with curb and gutter.
- upgrading the intersection of Range Road 83 and Highway 69.

These upgrades will be completed by the Developer of Saprae Industrial.

These upgrades have been identified based upon future needs and potential traffic volumes. The timing and cost sharing for the improvement will be negotiated with the RMWB during the Development Agreement stage.

5.2 ROADWAY NETWORK

As shown on **Figure 7.0 - Transportation Network**, one looping roadway has been used to provide access to the Saprae Industrial area. This roadway will be designed as a rural industrial local road with bioswales, within a 32.0m wide right-of-way, and 8.0m wide carriage and paved surface.

The roadway design of the development was chosen to provide convenient access to large vehicles which may frequent the area, maximize efficiency of the development, and ensure emergency vehicle access.

Drainage ditches, designed as bioswales, flank both sides of the roadway to accommodate overland drainage, as shown on **Figure 8.0 - Transportation Details**.

Utilizing bioswales along the roadway will provide a sustainable way to manage stormwater run-off. Unlike typical stormwater sewer systems, bioswales promote infiltration while filtering out pollutants, enhance aesthetic appeal of the roadway and provide a location for snow storage.

An asphalt trail will be provided within the roadway right-of-way to primarily provide employees within the Saprae Industrial Area a safe and direct walking environment. Two pedestrian crossing have been identified along the west boundary.

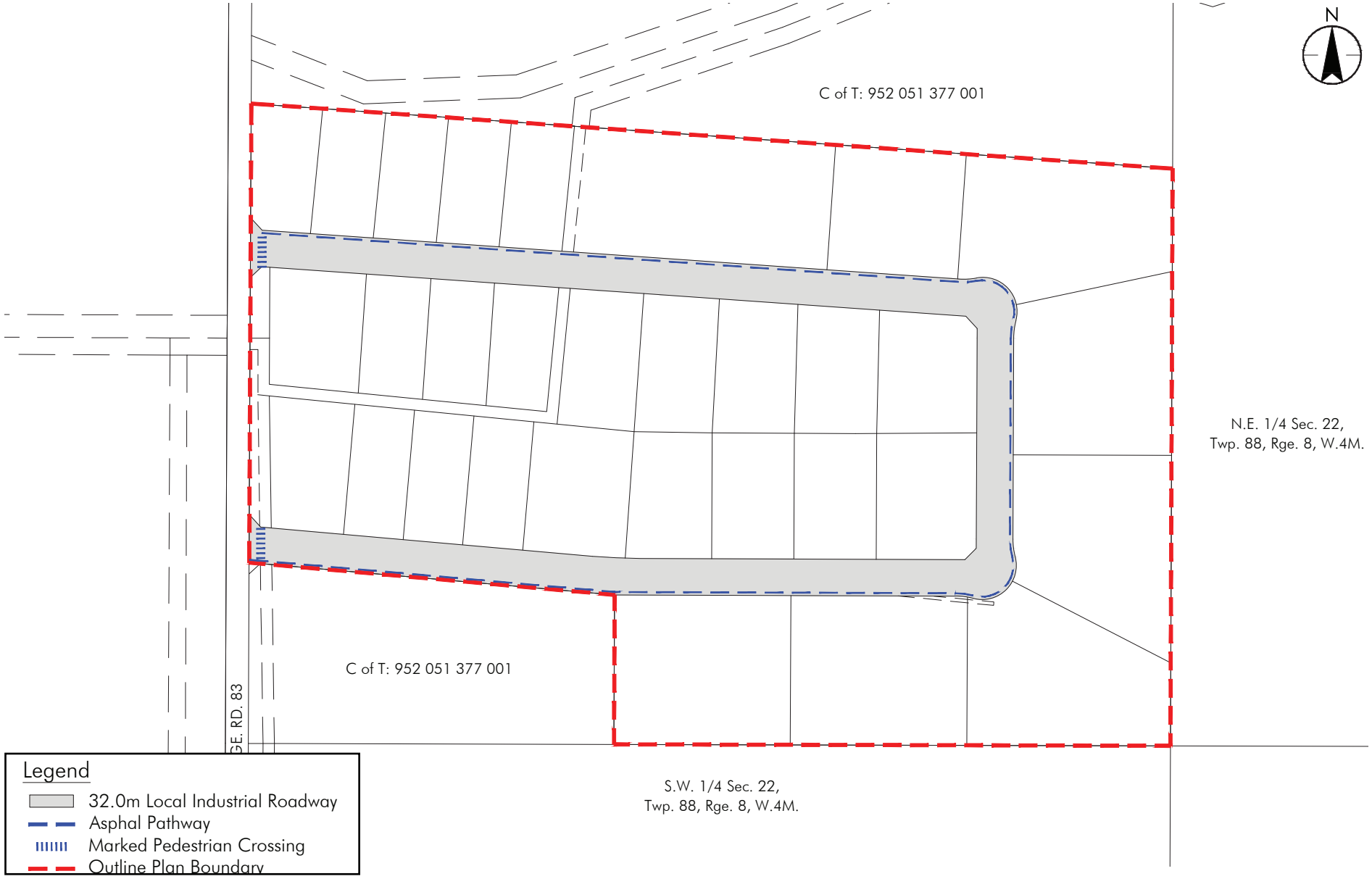
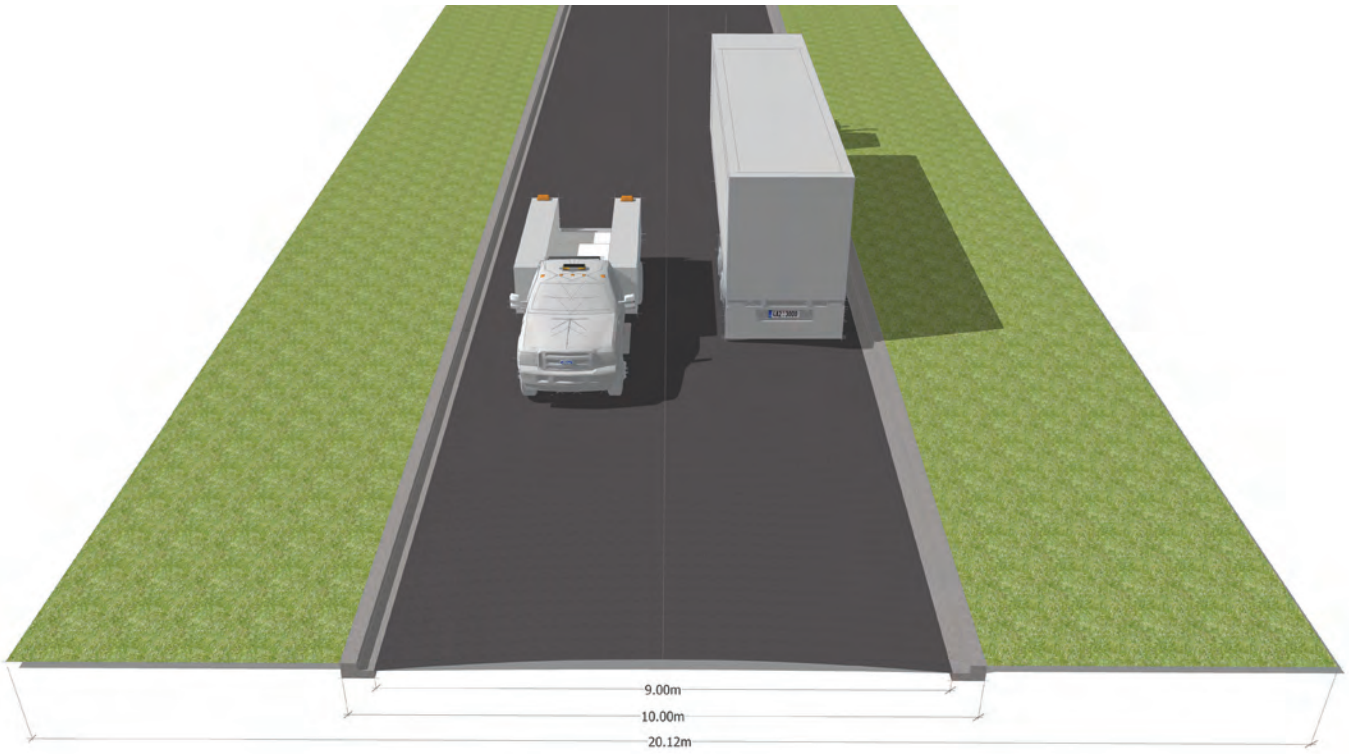
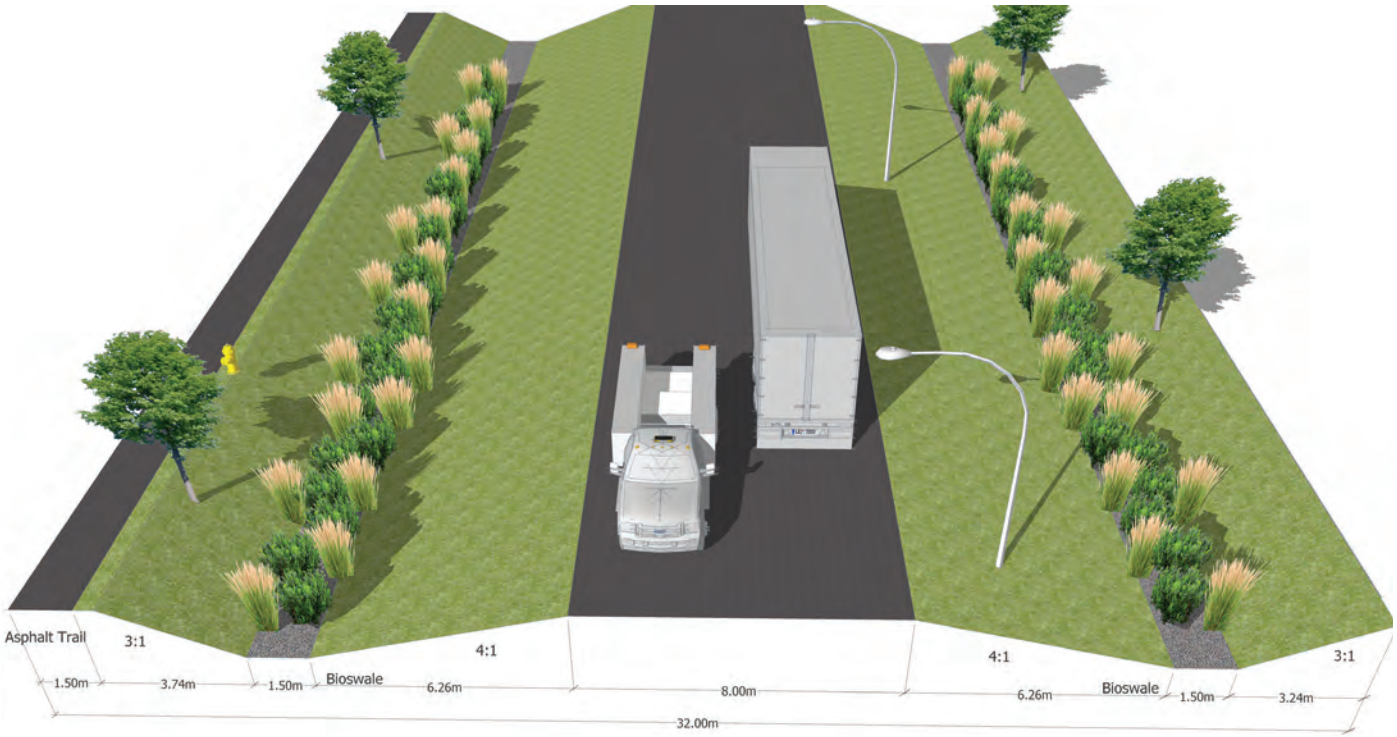


Figure 7.0 - Transportation Network

Stantec





32.0m Local Industrial Cross-Section

Figure 8.0 - Transportation Details

Stantec

6.0 utility services

6.1 EXISTING CONDITIONS

The proposed development is fronted by Range Road 83 which contains a 400mm water main. The site is also serviced with gas, electricity, and telephone services.

6.2 STORM SEWER SYSTEM

As detailed in the *Saprae Industrial Stormwater Management Report*, available under separate cover, the Saprae Industrial development will consist of an internal overland stormwater drainage network and an offsite storm main system. The proposed development will be graded such that the majority of the development will utilize overland flows drainage through bioswales and culverts into the proposed stormwater management facilities.

All stormwater management facilities will be designed in accordance with the RMWB Engineering and Servicing Standards. The Developer will be responsible for the dry pond for a two year maintenance period, after which it will be transferred to the RMWB.

6.2.1 Bioswales

Drainage ditches along roadway will be designed as bioswales to filter overland flows prior to their release into the stormwater management facility, and eventual release into Saprae Creek. Bioswales are similar to traditional open ditches, but densely vegetated with water tolerant plants. Water is directed into the bioswale and is slowly moved down a gradual slope. Design, grade, and plant selection will be further defined at the time of Detail Design.

The proposed bioswales will contribute to meeting Alberta Environment's requirement for removing 85% of Total Suspended Solids for particles greater than or equal to 75 microns in diameter.

6.2.2 Dry Pond

Location

As shown on **Figure 9.0 - Storm Sewer Servicing**, a stormwater management pond has been proposed for location along the north boundary of the Plan Area. This location is the existing discharge point where the existing overland drainage leaves the quarter section and enters the roadway ditch to the north.

Size

The stormwater management facility will be 100m x 220m in size with an active (fluctuating) depth of approximately 1.5m. This pond will be sized to accommodate a 1:100 year stormwater event.

Design

The proposed stormwater management facility will be dry in nature as to not attract any wildlife and potentially harm the operation of the adjacent airport. The dry pond will not have any permanent water at the bottom; this will be achieved by the pond having a minimum slope of 2.0% which will provide positive drainage to the outlet.

The dry pond will have side slopes no steeper than 5:1 with all side slopes and the bottom being covered with topsoil and seeded with appropriate materials.

The pond will discharge into a piped storm sewer system. A piped storm system was chosen as the existing ground is too high for gravity surface flows.

A control vault will be installed on the pond discharge. An outlet control device (OCD) will be installed in the vault to attenuate the outflow to the RMWB's discharge rate of 3.5l/s/ha.

An oil/grit separator manhole will be installed downstream of the control vault. The oil/grit separator manhole will ensure that the discharge meets Alberta Environment

and Sustainable Resource Development's requirement for removing 85% of total suspended solids for particles greater than or equal to 75 microns in diameter.

Wildlife Mitigation

To minimize the likelihood that wildlife, particularly birds, will be attracted to this dry pond, the following initiatives will be used:

- Ponds will have banks graded to at least a 4:1 slope.
  - » Steep banks are said to discourage birds by blocking their line of sight and making them feel threatened by possible predators.
- Grass will be well maintained surrounding the pond to reduce potential habitat area.
- All vegetation that provides food or cover for wildlife in or around the stormwater pond will be removed.
- Plant species permitted in the landscaping of Saprae Industrial will not include fruit or seed producing plants which are seen to attract wildlife.

6.2.3 Discharge

The piped storm system will discharge into the existing downstream ditch that subsequently drains through a series of ditches approximately 1.0km northeast to the Saprae Creek.

Some improvements will have to be made to a few locations in this drainage ditch to better enhance the drainage. Erosion of the existing ditches is not expected to be an issue; however, riprap will be placed at the outlet to minimize potential erosion.

6.3 SANITARY SEWER SYSTEM

The Saprae Industrial Lands will be designed with a 250mm sanitary sewer main and 200mm sanitary service connections to each lot. The sanitary sewers will provide a simple connection into the RMWB's sanitary trunks once the infrastructure is extended adjacent to the Plan Area. The proposed alignment of the sanitary sewer lines within Saprae Industrial is illustrated on **Figure 10.0 - Sanitary Sewer Servicing.**

For the interim period, the collection system will utilize the sanitary sewers to direct wastewater into a holding tank, or several holding tanks, sized to accommodate a wide variety of potential industrial uses with regular pump outs. Once Saprae Industrial is connected into the RMWB sanitary system, this holding tank will be removed and any reclamation to the site will be completed. The interim water collection system shall be in accordance with current Alberta Environment standards and regulations.

All sanitary sewer facilities will be designed in accordance with the RMWB Engineering and Servicing Standards. The Developer will be responsible for the infrastructure for a two year maintenance period ,after which it will be transferred to the RMWB.

6.4 WATER DISTRIBUTION SYSTEM

The Saprae Industrial Lands will be serviced with a 200mm or 300mm water main. Each lot will be serviced with a 50mm water main to meet the needs for fire flow and drinking water requirements. Additionally, hydrants will be provided at 150m spacing with a minimum 100m from the hydrants to the proposed building setback to meet the fire code. The proposed alignment of the water lines within Saprae Industrial is illustrated on **Figure 11.0 - Water Distribution Servicing**.

All water servicing facilities will be designed in accordance with the RMWB Engineering and Servicing Standards. The Developer will be responsible for the infrastructure for a two year maintenance period, after which it will be transferred to the RMWB.

6.4.1 Fire Protection

Fire flow will be provided to the development. As an addition measure, the RMWB should work with applicants during the development permit stage to ensure all sites are designed in a manner in which they are fully accessible by fire trucks.

Proposed fire hydrant locations are shown on **Figure 11.0 - Water Distribution Servicing**.

6.5 SHALLOW UTILITIES

The Saprae Industrial Lands will be provided with 3-phase power, street lighting, telephone lines, natural gas service, and fibre optic lines (if available and feasible) for high speed internet. As shown on **Figure 12.0 - Utility Alignment**, all franchise utility lines will be buried so that there is no conflict with potential over-dimensional highway loads.

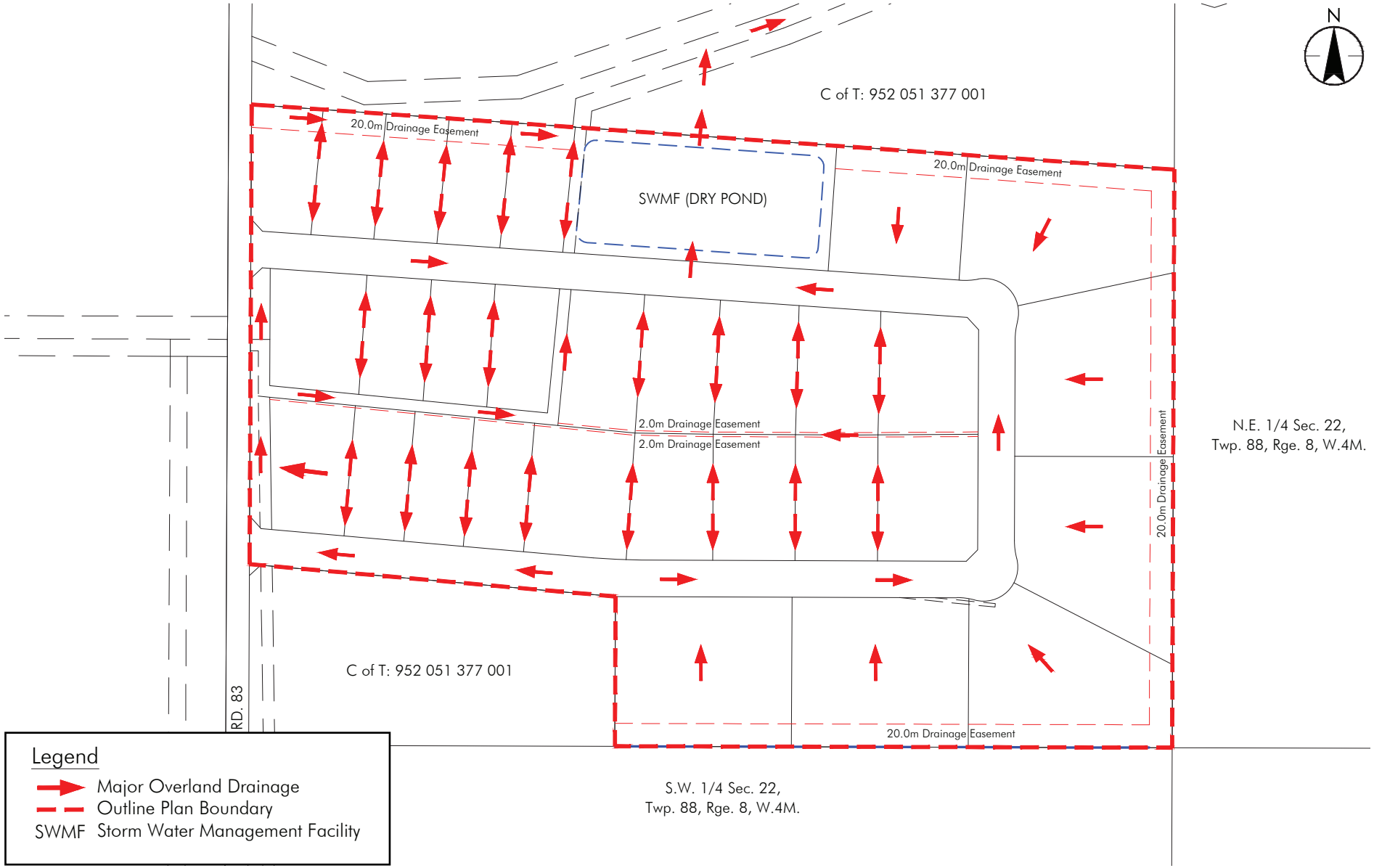


Figure 9.0 - Storm Sewer Servicing

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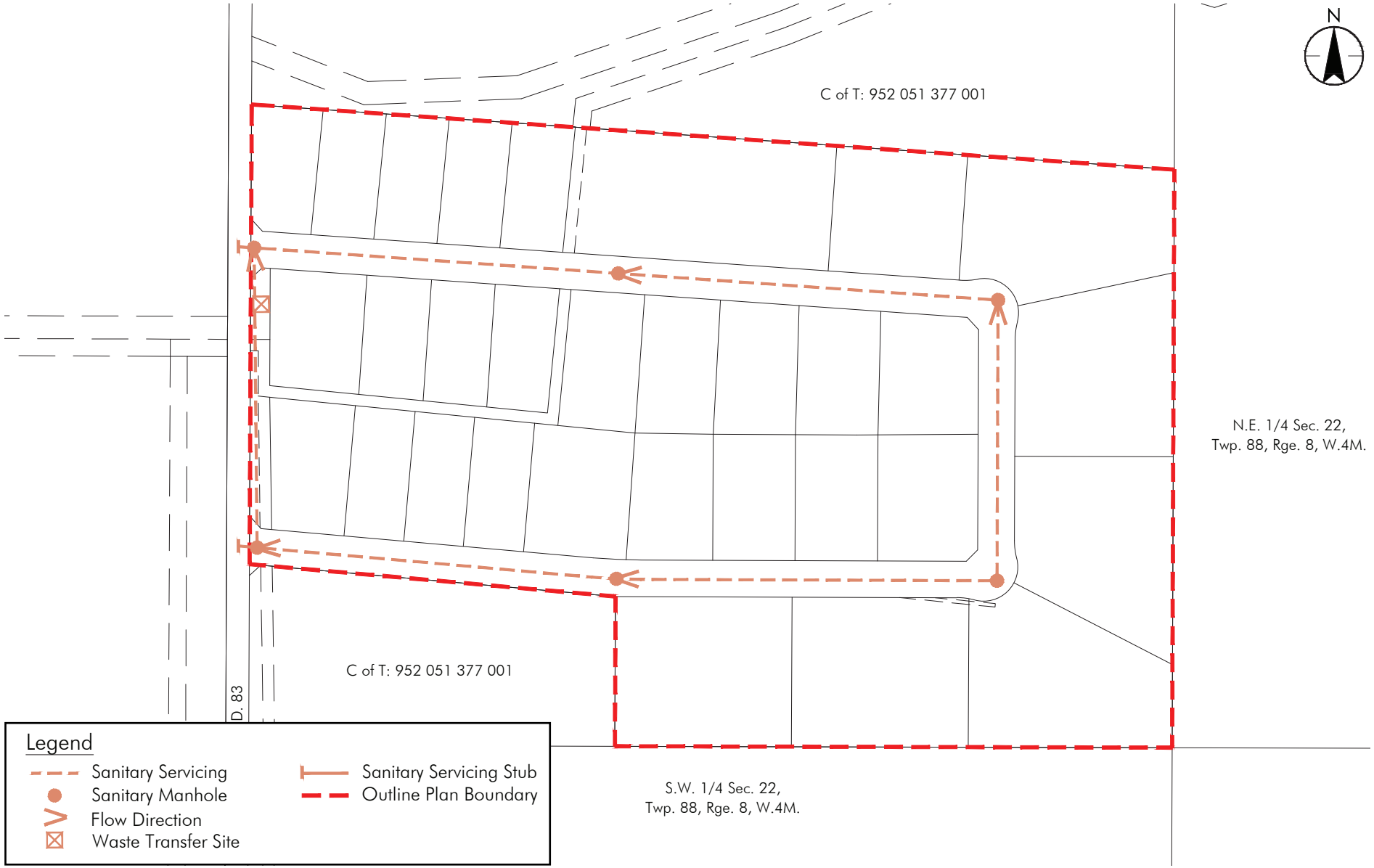

Figure 10.0 - Sanitary Sewer Servicing

Stantec

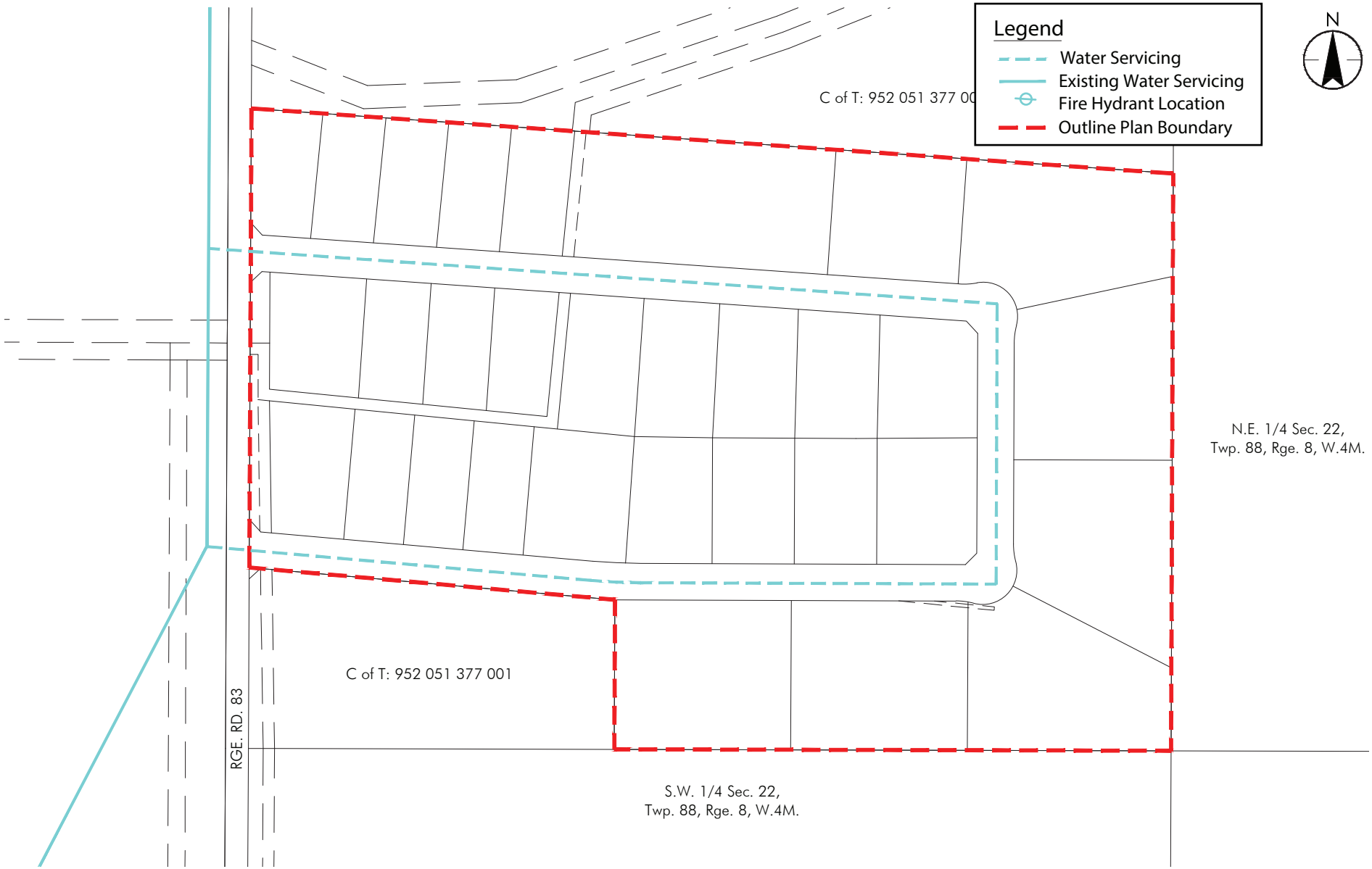

Figure 11.0 - Water Distribution Servicing

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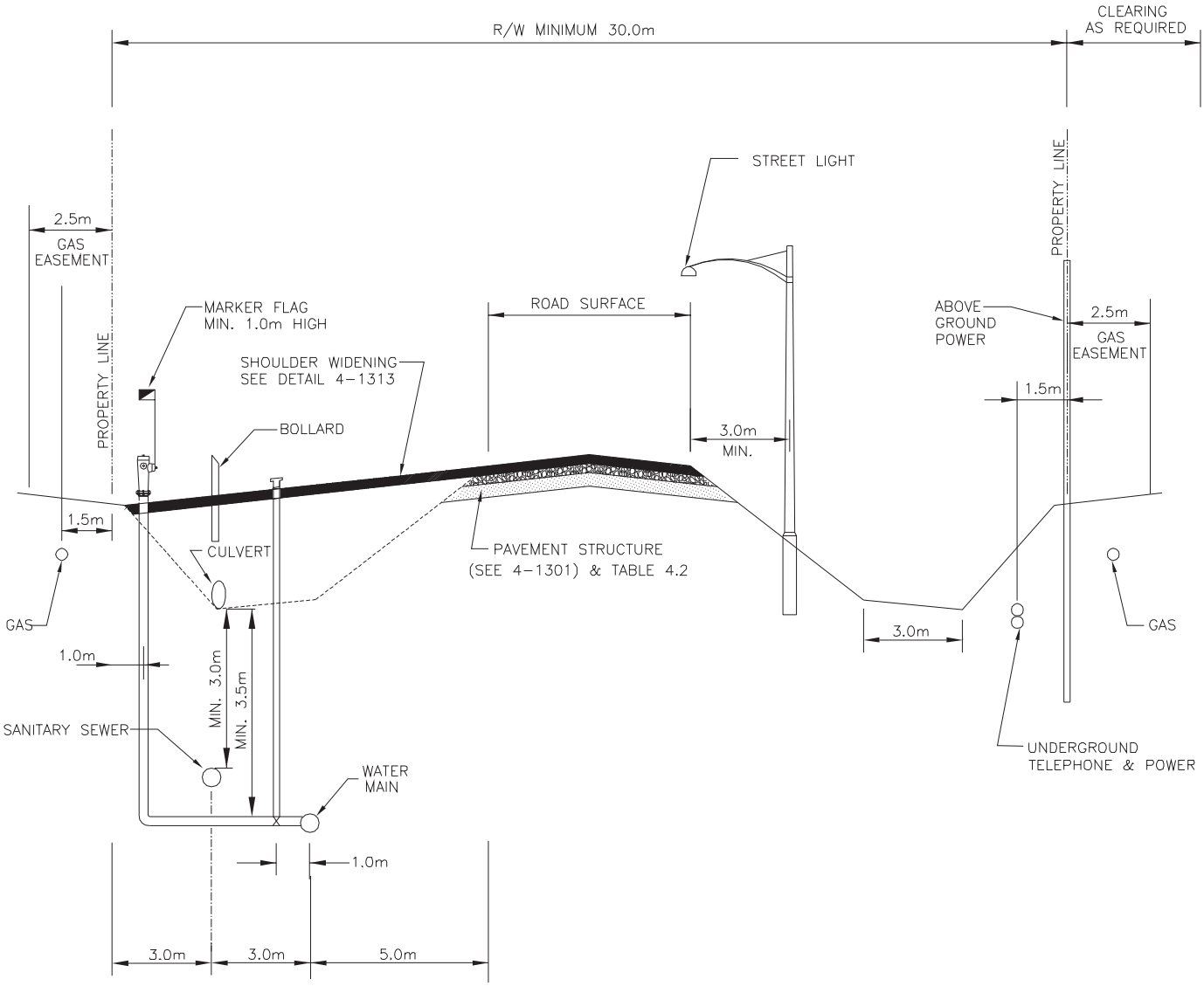

NOTES:

(1) WATERMAIN AND HYDRANT MAY BE LOCATED EITHER SIDE OF ROAD.

(2) UNDERGROUND POWER OR POWER POLES WITH STREET LIGHTS TO BE OPPOSITE SIDE TO WATERMAIN.

(3) LUMINARIES SUPPORTS TO BE OF THE FRANGIBLE BASE, SLIP BASE OR FRANGIBLE COUPLING TYPE.

32.0m Local Industrial Cross-Section

Figure 12.0 - Utility Alignment

Stantec

7.0 implementation

7.1 PLAN APPROVAL

The following process was undertaken to approve the Saprae Industrial Outline Plan:

- Pre-Application Meeting
- Submittal of Outline Plan to RMWB
- RMWB circulation of Outline Plan internally and externally for review and comment
- Airport Authority's review and comment
- Approval via RMWB Administration

Due to the Plan Area's location within the Airport Vicinity Area, the Outline Plan will need to be reviewed by the Airport Authority prior to its approval. Subsequent to their review, the Authority will provide recommendations to the RMWB about its approval.

7.2 REDESIGNATION AND SUBDIVISION

The Saprae Industrial area has already been designated as industrial lands within the RMWB Land Use Bylaw and will not require further redesignation.

The following process will be undertaken to subdivide the Saprae Industrial Outline Plan:

- Submittal of Subdivision Application to RMWB
- RMWB circulation of application internally and externally for review and comment
- Presentation to Planning and Development Standing Committee for recommendation
- Subdivision Application conditional approval given through administration
- Development Agreement with RMWB

7.3 DETAILED DESIGN

The Saprae Industrial development will undergo a process of detailed design to determine all servicing alignments, stormwater management and grading, roadway design, etc.

7.4 OFF-SITE IMPROVEMENTS

Range Road 83 will be upgraded as discussed in **Section 5.1.1 - Range Road 83.**

7.5 SINGLE PHASE CONSTRUCTION

The Saprae Industrial Development will be completed in one phase. It is the intention of the Developer to begin construction of the Saprae Industrial area in 2014. Items not fully constructed by the turn in the weather will be constructed as early in 2015 as possible. All required permits and approvals will be obtained prior to the constriction on the site.

7.5.1 Existing Dug Out and Wetlands

During the grading of the site, the existing dug out and wetlands will be filled and incorporated into the overall Plan Area for future development, in accordance with geotechnical specifications.

7.6 LOT OWNERS

Subsequent to the completion of the Developer's land development process for the Saprae Industrial Plan Area, lots will be sold to individual owners. These lot owners will be required to obtain a development permit from RMWB prior to beginning construction on their sites.

During this process, the RMWB will require them to describe how development of their site will be completed. Requirements during this development agreement are outlined in the RMWB Land Use Bylaw and may include the following details: location of all proposed buildings, proposed parking areas, a lot grading plan, landscape

Appendix A

CORRESPONDENCE WITH AESRD

Derek Sinclair

From: Chisholm, Meghan <Meghan.Chisholm@stantec.com>
Sent: Thursday, July 17, 2014 9:38 AM
To: Derek Sinclair; Brad Hoffman
Cc: Obert, Marc; Adams, Dale; Spyksma, Nick
Subject: Fw: Saprae Industrial Park Wetland Assessment

Good Morning Derek/Brad,

Please see below the email from ESRD. They are waiving the approval requirements for your property but the activities must comply with the Water Act and EPEA in terms of releases into downstream waterbodies/wetlands.

Let us know if you have questions.

Thanks!

Meghan Chisholm
Stantec Consulting Ltd.
P:780-917-7253
F:780-917-7249
Sent from my Blackberry

From: Adams, Dale
Sent: Thursday, July 17, 2014 08:06 AM
To: Chisholm, Meghan; Obert, Marc
Cc: Steele, Ben
Subject: FW: Saprae Industrial Park Wetland Assessment

July 17, 2014

Looks like our client has the green light to start filling on the property once they acquire title to the land.

As was discussed in the meeting it was suggested that that client construct a temporary dugout at the location where drainage leaves the property. The dugout would act as a sedimentation pond for any dewatering that occurs on the property. Water could then be pumped off site at a controlled rate.

A migratory bird nest search would also be required.

Dale

From: Michael Lapointe [mailto:michael.lapointe@gov.ab.ca]
Sent: Wednesday, July 16, 2014 4:29 PM
To: Adams, Dale
Subject: Saprae Industrial Park Wetland Assessment

Hi Dale,

Based on the Saprae Industrial Park Wetland Assessment, our discussions today and similar practices in the past, ESRD does not require an approval or compensation for the wetland disturbance at the site, as the wetlands are comprised of

peat land and have already been disturbed. The only open water is present as a result of anthropogenic processes as evidenced by the historical aerial photographs and have not been claimed by the crown.

It should be noted that activities will still need to be in compliance with the Water Act and any releases or disturbances to waterbodies (in this case, potentially downstream of any discharged water) should be reported to Compliance. The work involved with the stormwater pond will be handled under a separate approval.

As the wetland policy is implemented, similar activities may require an approval in the future, as we re-assess peat lands and requirements for compensation, so this decision should not be taken to interpret future decisions under the new wetland policy.

Please let me know if you have any questions or require any additional information.

Sincerely,

Michael Lapointe, P.Eng.
Approvals Manager
Environment and Sustainable Resource Development – Lower Athabasca Region
111 4999 98 Avenue Edmonton AB T6B 2X3
Phone: (780) 427-7556 Fax: (780) 427-7824
Michael.Lapointe@gov.ab.ca

Sarina Sibbio

From: Sarina Sibbio
Sent: Wednesday, September 19, 2012 4:24 PM
To: 'emtech1@telus.net'
Subject: RE: 11-27 Waterbody Ownership NW22-88-8-W4M

Hi Katie!

Further to your email request, I have completed my review of our documentation and air photo review into the ownership of the wetlands affecting the subject Lots 1 and 2 of C.of T. 972 159 563 located within the NW 22-88-8-4. I have reviewed the air photo record from 1949 to 2008 as well as the satellite imagery from 2003 to 2011 inclusive. The subject lots 1 and 2 are not affected by any claimable features ie: waterbodies that meet the criteria of a waterbody or permanence within the Provincial Crown claimability. As such, the Crown would not assert a claim under Section 3 of the Public Lands Act to any features within Lots 1 and 2 of C. of T. 972 159 563 with the above subject lands.

The subject wetlands appear to contain open water in a couple years of the air photo record which was spring photography. The remaineder of the years the subject lands were either dry or had a wetland appearance.

I hope I have answered your question. If you need further assistance or clarification, do not hesitate to contact me at 780-415-4625 or email at Sarina.Sibbio@gov.ab.ca.

R. Sarina Sibbio
Senior Land Research Analyst
Riparian Land Management & Water Boundaries Unit
Industrial & Commercial Land Use Section
Public Lands Division,Land Management Branch
Alberta Environment & Sustainable Resource Development

From: Katie Thompson [mailto:emtech1@telus.net]
Sent: Wednesday, September 19, 2012 9:29 AM
To: Sarina Sibbio
Subject: 11-27 Waterbody Ownership NW22-88-8-W4M

Hello Sarina,

I believe the attached are the items you were looking for when you called yesterday? Please advise if you require anything else.

Thanks,

Katie Thompson, B.Sc.
EnviroMak Inc. Environmental Management Consultants

101-18331 105 AVE NW
EDMONTON AB T5S 2K9

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