Pembina NGL Corporation

Summary of the Project Description for the Redwater Facility Rail Yard Expansion Project Redwater, Alberta

Prepared by:
Pembina NGL Corporation

Prepared for:
Canadian Environmental Assessment Agency

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Acronyms

AER	Alberta Energy Regulator
AEP	Alberta Environment and Parks
CEAA	Canadian Environmental Assessment Agency
CEAA 2012	*Canadian Environmental Assessment Act* 2012
CN	Canadian National
EPEA	*Environmental Protection Enhancement Act*
GHG	Greenhouse Gas
NCIA	Northeast Capital Industrial Association
NGL	Natural Gas Liquids
NSR	North Saskatchewan River
NWR	NorthWest Refinery
RFS	Redwater Fractionation and Storage
RNMP	Regional Noise Management Plan

1.0 GENERAL INFORMATION AND CONTACTS

1.1 Name, Nature and Location of the Project

Pembina NGL Corporation (Pembina), a wholly-owned subsidiary of Pembina Pipeline Corporation, currently operates the Redwater Fractionation and Storage (RFS) Facility located near Redwater, Alberta, in Section 1, Township 56, Range 22, West of the Fourth Meridian (1-56-22 W4M) within Sturgeon County (Figure 1). Figure 2 provides the regional project location. RFS is approved in Alberta under the *Environmental Protection and Enhancement Act* (EPEA) Approval No. 9995-02-00 (as amended).

Pembina is proposing to expand an existing rail yard at the RFS site. The activities included in this rail expansion (the project) are as follows:

- the construction of approximately 36 km of new track
- the realignment (*changes in the direction or changes in the track's elevation to match with the new yard configuration*) of approximately 9 km of existing track.
- addition of three (3) stormwater ponds
- salvaged and subsequent re-use of approximately 6 km of existing track for the Project's construction of new track.

The majority of the Project will be sited on lands previously zoned for heavy industrial use while a small portion is currently zoned as Agricultural Heartland. The purpose of the Project is to facilitate the existing RFS operations by providing additional rail capacity. The Project will allow for increased efficiency in handling of rail car volumes, as well as being able to safely operate within the constraints of new federal railway regulations.

The Project will be constructed on previously disturbed freehold land, with the majority of the rail constructed adjacent to existing tracks. Figure 1 provides the site plan for the Project.

1.2 Proponent Contact Information

<table>
<tr><td colspan="3">Name of the Project
Pembina Redwater Fractionation and Storage (RFS) Facility Rail Yard Expansion</td></tr>
<tr><td rowspan="2">Name of the Proponent
Pembina NGL Corporation</td><td colspan="2">Address of the Proponent</td></tr>
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Principal Contact for Project Description	**Contact Information**
Ms. Sarah Penny Specialist, Environment	1.403.233.4520 spenny@pembina.com Pembina Pipeline Corporation 4000, 585 8th Avenue S.W. Calgary, Alberta T2P 1G1

1.3 Jurisdictions That Were Consulted

Pembina has had ongoing consultation associated with RFS operations in the form of open houses and community associations meetings. In March 2015, Pembina notified stakeholders of this Project via notification packages to landowners, residents, occupants, industry, local authorities, and municipalities, located within a radius of 1.6 km of the RFS site. This radius was selected to be consistent with the Alberta Energy Regulator (AER) Directive 056 notification radius, thus similar for other infrastructure at RFS. The Project was also presented at Life in the Heartland's Public Information Night in Redwater, Alberta on October 21, 2015.

Agencies and parties that were notified and/or consulted as part of the Provincial and Municipal approvals processes include:

- AER;
- Sturgeon County;
- Alberta Culture;
- Alberta Environment and Parks (AEP);
- Industrial Landowners and Operators; and
- Area Landowners and Residents.

Consultation has been and continues to be conducted with stakeholders in an effort to provide information about the Project, as well as respond to concerns and questions. Comments and questions received by stakeholders are being recorded by Project team members. Feedback will be documented in a record of consultation (ROC) and shared with the Project team to ensure comments, concerns and feedback from stakeholders is considered. Consultation will be ongoing. For more information on Stakeholder Consultation, refer to section 7 of this document.

Aboriginal groups have been notified of the Project as per the direction of the Canadian Environmental Assessment Agency (CEAA). A list of the groups notified is present in Section 6 of this summary. To date throughout ongoing consultation, Pembina has not yet received any claim to traditional land or impacts to

traditional land use. Pembina is committed to addressing any concerns surrounding the Project and should a federal regulatory requirement be identified Pembina will engage in the appropriate level of consultation.

1.4 Environmental Assessment and Regulatory Requirements

In addition to the required submission of this Project Description to the CEAA on behalf of the *Canadian Environmental Assessment Act, 2012* (CEAA 2012), the Project is also subject to other regulatory requirements from federal, provincial and municipal jurisdictions. Those considered included the following:

Federal

- *Fisheries Act*
    - The *Fisheries Act* focuses on conservation and protection of fish habitat essential to sustaining freshwater and marine fish species.
    - Pembina been communicating with Sturgeon County regarding the outfall structure being developed as part of the Sturgeon County stormwater management program. The outfall is to be approved by the Department of Fisheries and Oceans (DFO) due to having activities below the low water mark and effluents entering the North Saskatchewan River (NSR). Sturgeon County will apply for approval, own, operate and maintain the stormwater outfall. The outfall structure will be constructed by Pembina on behalf of Sturgeon County and due to the Projects' ability to impact the outfall system, Pembina has been actively working with the Sturgeon County on the design and regulatory aspects, including the Projects' relationship to the outfall system.
- *Migratory Birds Convention Act*, 1994 (MBCA, 1994)
    - The MBCA ,1994 strictly prohibits the harming of migratory birds and the disturbance or destruction of their nests and eggs.
- *Species at Risk Act* (SARA)
    - SARA listed species must not be harmed by the construction, operation, or decommissioning of Project works. It is illegal to kill, harm, harass, capture, or take in any way any species listed under the SARA.
- *Railway Safety Act*
    - See below under Provincial "*Alberta Railway Act.*"
- *Transportation of Dangerous Goods Act*
    - See below under Provincial "*Alberta Railway Act.*"

Provincial

The Project is not considered an energy resource activity (as defined in the *Responsible Energy Development Act* Section 1(1)(i/j); as such, Alberta Environment and Parks (AEP) has authority over any of the Project's EPEA and the *Water Act* requirements that occur outside of the upstream RFS, AER and EPEA approved lands.

- EPEA
    - The Project has overlap with an existing Pembina project regulated by the AER under the EPEA (Approval No. 9995-02-00, as amended). Notification of the portion of the Project to be located within EPEA lands was submitted to the AER on August 17, 2015. This notification highlighted the Project and its inclusion under EPEA within the existing EPEA Approved lands.

  - The Project is an activity as defined within the EPEA Schedule of Activities, Section 9 (1), due to the need for a *Water Act* approval for wetland disturbance. Approval was received on July 5th, 2016 (Approval No. 00380751-00-00)
  - The Project is not included as an activity identified in Schedule 1 (Divisions 1, 2, and 3) of the EPEA Activities Designation Regulation; no industrial approval is required.
  - The Project is not a mandatory or exempted activity, as defined within the EPEA Environmental Assessment (Mandatory and Exempted Activities) Regulation. No provincial Environmental Impact Assessment (EIA) is required.
  - The EPEA Division 1 on Releases of Substances Generally, Section 110(1) requires the Project to report any release of substance to the environment.
  - The three stormwater management ponds associated with the Project will require an EPEA registration. The registration application was submitted in June 2016 and is currently under review.
- Alberta Environment and Parks
  - Pembina has been communicating with Sturgeon County regarding the outfall structure being developed as part of the Sturgeon County stormwater management program. The outfall is to be approved by Alberta Environment and Parks (AEP) under the *Water Act* Codes of Practice. Sturgeon County will apply for approval, own, operate and maintain the stormwater outfall. The outfall structure will be constructed by Pembina on behalf of Sturgeon County and due to the Projects' ability to impact the outfall system, Pembina has been actively working with the Sturgeon County on the design and regulatory aspects, including the Projects' relationship to the outfall system.
- *Public Lands / Water Act* Joint Application to AEP for wetland disturbance
  - The Project is anticipated to impact wetlands; a Joint Application (*Public Lands Act and Water Act* to AEP) is required.
  - The impacted wetlands have been deemed as not Crown-claimable (triggering the *Public Lands Act)* as per discussions with AEP in April 2016.
  - The application has been submitted to AEP for *Water Act* approval for Pembina to provide wetland compensation for the loss resulting from the Project. Approval was received on July 5th, 2016 (Approval No. 00380751-00-00)
- Directive 056 License to AER
  - The Project is not a petroleum industry energy development as defined in the Directive; no license is required. However, the Project occurs in the same area of an existing facility which is licensed through Directive 56. The Project was mentioned as a part of the Direction 56 notification package as additional information sent out for the existing RFS facility when it was being planned.
- *Alberta Railway Act* Industrial Operating Certificate
  - This Project will require an approval under the *Railway (Alberta) Act* to allow for the construction and operation of the additional rail lines.
  - The *Alberta Railway Act* includes federal requirements within Transport Canada's *Transportation of Dangerous Goods Act* and the *Railway Safety Act*.
- *Historical Resources Act* (HRA) Clearance from ACT
  - Alberta Culture provided *Historical Resource Act* Clearance for the stormwater management and entire Project scope on February 3, 2016 and February 12, 2016, respectively.

Municipal

- Sturgeon County
    - A Development Permit Application has been submitted to Sturgeon County, to receive approval for the construction of the additional rail lines by the local governing municipality.
    - Pembina will work with the County to obtain road use agreements and establish emergency response planning.

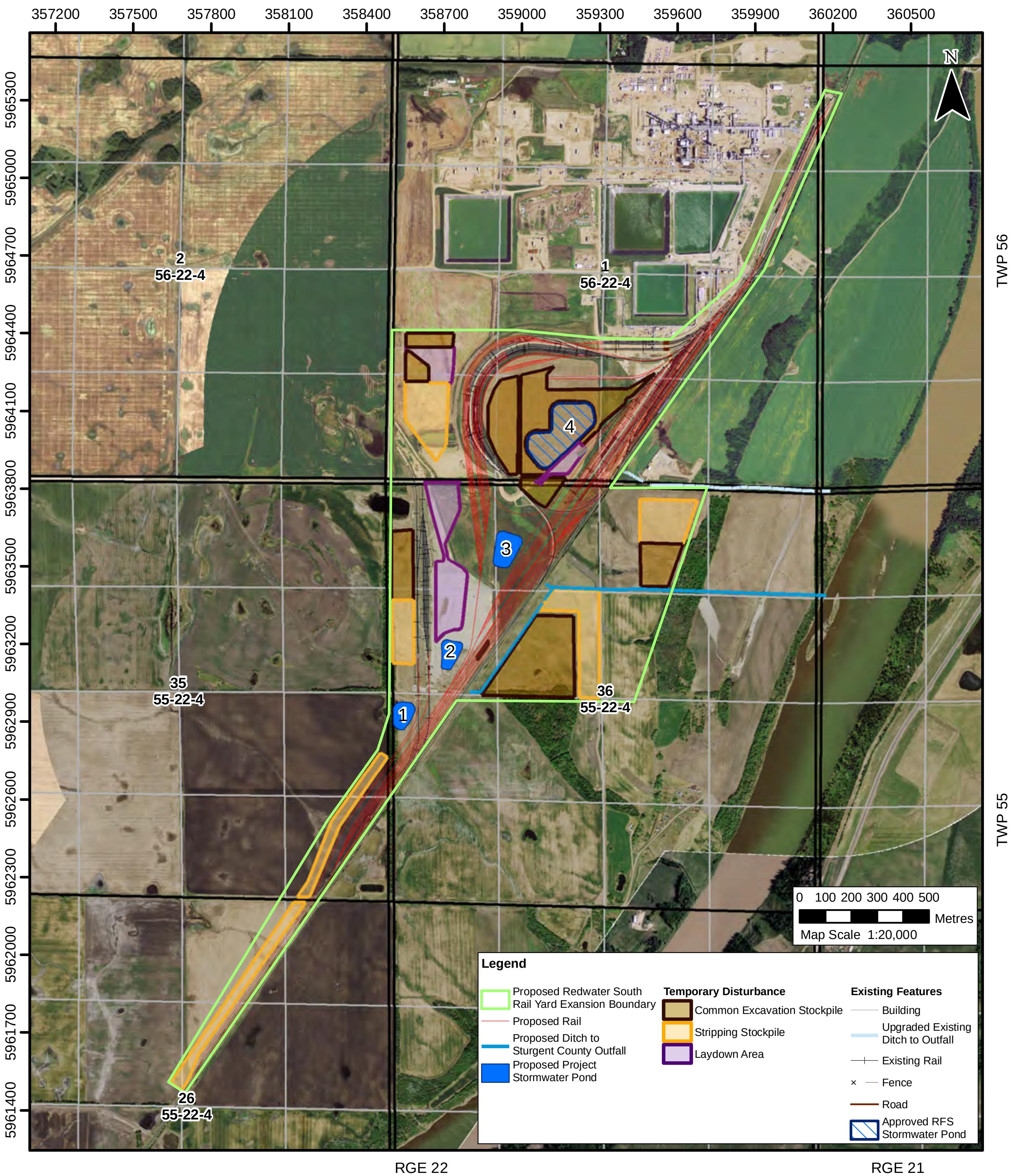
1.5 Regional Environmental Studies

There have been no environmental studies conducted as per Section 73 and 74 of CEAA 2012. in the Project's region. The Project is part of Sturgeon County located within the Alberta Industrial Heartland and the Capital Region (a group of 24 municipalities including Sturgeon County), which is an area zoned for heavy industrial use. A number of regional environmental frameworks were created and officially adopted in 2007 to guide decision making in the region focusing on cumulative effects management. The existing frameworks are as follows:

- Water Management Framework
- Industrial Heartland Regional Noise Management Plan (RNMP)
- Air Quality Management Framework
- Capital Region Growth Plan

Since 2007, regional environmental studies have been completed through the aforementioned frameworks and plans to investigate environmental elements such as wetlands, groundwater, and water quality, amongst others.

The Project is also located partly within the boundaries of another existing Pembina project which is regulated by the AER under EPEA, and current EPEA Approval requires Pembina to complete various environmental studies. This data and analysis is reported to the AER on an annual basis.



PEMBINA

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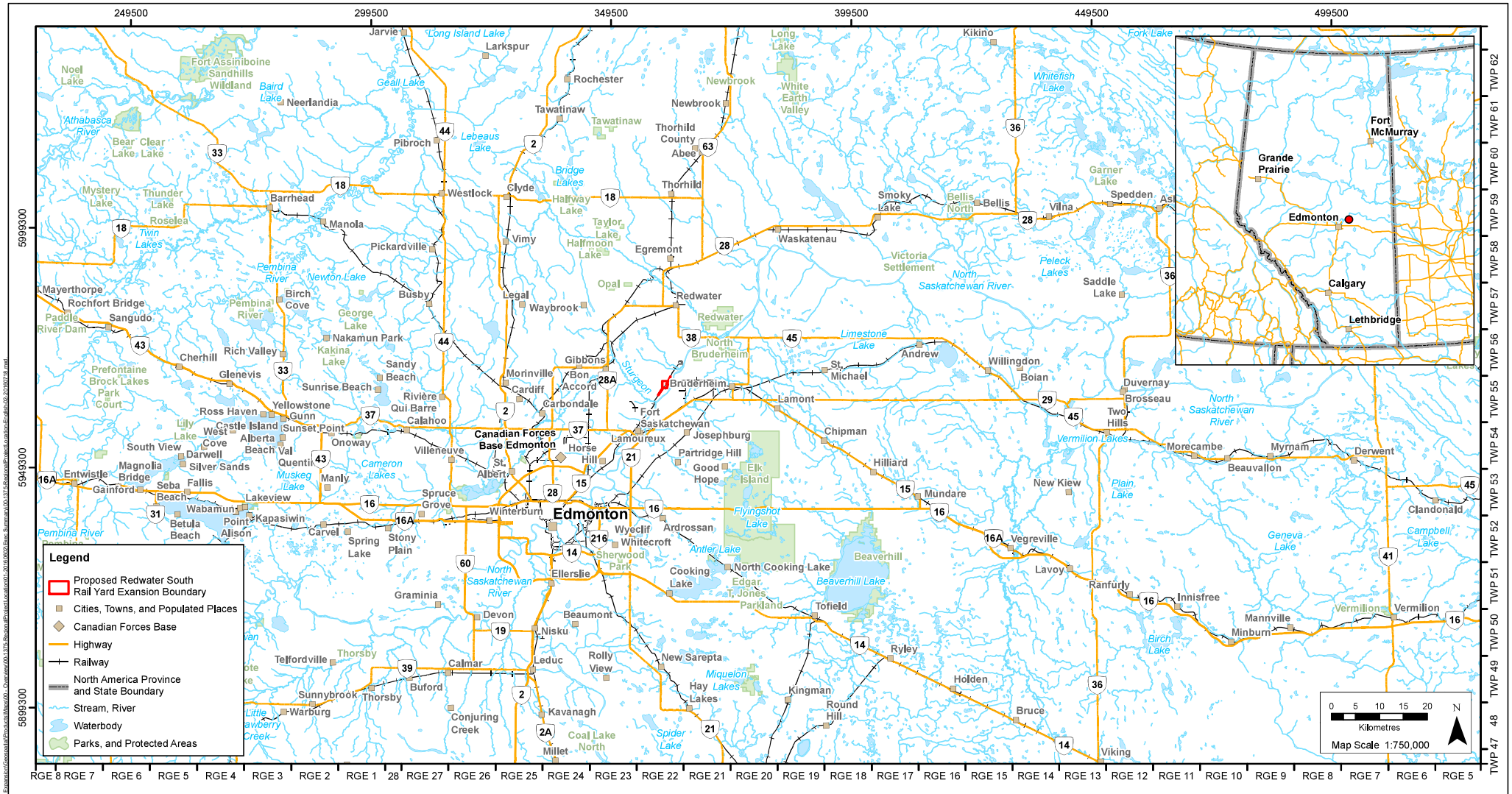
Pembina Redwater South Rail Yard Expansion
Township 56 and 55-20 W4M
Site Plan

Projection: NAD 1983 UTM Zone 12N
When printed on 8.5" X 11" sheets, scale is 1:20,000

Figure Number	1	IEL Project Number	16415

Revision	Date	Created by
00	20 MAY 2016	IY
01	2 JUN 2016	IY
02	18 JUL 2016	IY

Imagery: Valtus imagery (2013) and ESRI Aerial Basemap



Pembina Redwater South Rail Yard Expansion
Township 56 and 55-20 W4M
Regional Project Location

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Figure Number	2	IEL Project Number	16415

Revision	Date	Created by
00	20 MAY 2016	IY
01	02 JUN 2016	IY
02	18 JUL 2016	MEG

Source: CanVec, Alberta Parks, and GeoBase

Projection: NAD 1983 UTM Zone 12N
When printed on 11" X 17" sheets, scale is 1:750,000

2.0 PROJECT INFORMATION

2.1 General Description

The Project's purpose is to accept empty rail cars and organize rail cars that have been filled at the existing RFS facility into trains. At which point, Canadian National Rail (CN) will take them off site to their respective destinations. The Project would increase product distribution design from approximately 184 cars per day to peak of approximately 260 cars per day.

This Project is being developed to support existing Pembina RFS operations, and other projects that have previously received approval and are under construction. These such operations include the following:

- RFS Existing – Pembina Fractionation Site that is currently operational; the Project will connect to an existing yard that will be extended and/or realigned.
- NWR (Northwest Refinery) Diesel – Pembina is providing the rail for the NWR Diesel project, located north west of the Project. Pembina is not manufacturing or producing diesel
- RFS II – Pembina Fractionation site that has been approved under EPEA, constructed and is under operation and located to the north of the existing RFS site.
- RFS 3 – Pembina Fractionation site that has been approved under EPEA, and is currently under construction.

The majority of the Project will be constructed on Pembina-owned land (pending final land acquisition). Pembina will be responsible for the construction, operation, and decommissioning of all tracks associated with this Project. Pembina will maintain the classification yard portion of the Project, and CN will maintain the six departure and receiving tracks, with the exception of snow removal and vegetation control, which will be Pembina's responsibility. However, Pembina is responsible for construction, operation and decommissioning of the track.

There are no loading or transloading facilities associated with the Project. Pembina has existing, operating loading facilities, and some currently under construction associated with other projects outside of the scope of this Project Description, which have previously been approved by regulators.

Overall the Project would involve the construction of approximately 36 km of track and the realignment (changes in the direction or changes in the track's elevation to match up with the new yard configuration) of approximately 9 km of existing track. The departure and receiving tracks (the first six linear tracks parallel to the CN Beamer spur) and the classification yard portion of the Project (all remaining tracks) are included as the approximately 36 km of track. As part of this build, approximately 6 km of existing track will be salvaged and re-used in the construction of new track. The Project will be constructed on previously disturbed freehold land, with the majority of the rail constructed adjacent to existing tracks.

Additional Project activities include the construction of three surface water control ponds connecting to the planned Sturgeon County outfall structure, the relocation of subsurface utilities as required and the expansion of an existing at-grade road/rail crossing at Township Road 555.

2.2 Regulations Designating Physical Activities

In the *Regulations Designating Physical Activities* Section 2, Subsection 25b of the Schedule the following provision that describes the Project as a designated activity:

> *The construction, operation, decommissioning and abandonment of a new railway yard with seven or more yard tracks or a total track length of 20 km or more.*

The Project includes the construction of approximately 36 km of new track and therefore is classified as a designated activity according to the CEAA 2012 Regulations.

2.3 Components and Activities

Additional Rail

There will not be transloading stations associated with this rail. The Project would include construction of the following:

- Approximately 36 km of new track on to the approximate 21 km of current existing track, and the realignment of approximately 9 km of the currently existing track;
    - Repurposing, extension and realignment of the 10 existing condensate loop tracks into inbound classification yard tracks;
    - 4 additional in-bound classification yard tracks in the existing condensate loop (14 tracks total);
    - 4 new set-out tracks;
    - 2 new pull-back tracks;
    - Locomotive storage and one bad order track;
    - 1 turn around wye;
    - The repurposing, and extension of the existing 14 Liquid Petroleum Gas yard tracks into:
        - 6 receiving/departure tracks; and
        - 8 outbound classification yard tracks;
- Leads, turnouts and cross-overs connecting various parts of the yards or tracks described above.

Site Grading and Stormwater Management

Site preparation consists of topsoil stripping, construction of railway grades using common excavation material, placing of granular sub-ballast, ballast and other granular material. Several temporary laydown areas and stockpile areas will be constructed as part of the Project.

The stormwater management system will include the addition and modification of ditches, culverts, sub-drains, stormwater pipes and catch basins linked to three new stormwater ponds to capture on-site stormwater and release at a rate equivalent to existing undeveloped conditions. These ponds will be connected to a new Sturgeon County outfall structure via a network of ditches and culverts before discharging stormwater to the NSR.

The outfall structure will be constructed as part of a regional stormwater management program being developed by Sturgeon County, to be approved by AEP. The County outfall structure is not part of the Project, but due to the influence the Project could have on the stormwater system Pembina has been working closely with the County to make sure the outfall design is properly planned and is regulatory approved in a sufficient manner to handle the impacts associate with the Project which is within the catchment area in which the County's outfall system would support.

Utilities

- Permanent electrical power for proposed buildings, indoor and outdoor lighting and cameras.
- Potable water and sanitary services will be provided via tanks.
- Data connections will be provided from the existing plant using above and/or below ground cabling.

Buildings

- Railway Operations Building
    - Single storey building for management and supervisory staff, including offices, lunch room, and washrooms.
- Warming Huts
    - Two single storey buildings to allow field staff to shelter from weather on breaks, use the washroom, and obtain switch lists and other data without travelling back to the Railway Operations Building.
- Railway Maintenance Building
    - Building with space for repairs and maintenance to one locomotive including an overhead crane and space for storage of spare parts.

Other Functional Elements

- Lighting and Operations Cameras
    - Pole mounted fixtures to illuminate the yard area.
    - Pole mounted cameras to view yard operations from the Rail Operations Building.
- Automatic Equipment Identification (AEI) Readers and Track Scale
    - AEI readers to read equipment tags on railway cars as they enter, and at certain locations within the facility.
    - Track scale to calculate weight of select inbound railway cars.
- Utility Crossings
    - A number of buried pipelines may require relocation or protection (thicker wall pipe, casing, or protection slabs). The scope of this work will depend on the utility operator requirements.
    - A high voltage AltaLink transmission line will be relocated.
- Security and Fencing
    - Fencing and access control will be provided to limit access to the yard, where feasible, to the stormwater management ponds.
    - CCTV cameras will be installed to provide video surveillance of the yard.

Temporary Facilities during Construction

- Modular Offices
  - A number of temporary modular office facilities are required for security, engineering and construction management team, and construction contractors.
- Toilet Facilities
  - Several self-contained toilet facilities will be provided on-site for use.
- Power
  - During construction, power to temporary facilities will be provided via generator or temporary line connections.

Anticipated Size and Capacity

The Project would increase design product distribution from approximately 184 cars per day to peak of approximately 260 cars per day. Products being transported would include the addition of diesel and biodiesel to the current product stream of ethane, propane, butane alky feed, propylene and condensate. The disturbance area of the Project is approximately 52 ha.

2.4 Emissions, Discharges and Waste

2.4.1 Air Emissions

The Fort Air Partnership (FAP) is responsible for the maintenance and operation of an ambient air quality monitoring network in the Industrial Heartland, within which the Project will occur and where Pembina's existing RFS facility is located. The data collected from approximately 65 passive and continuous monitoring stations located within the FAP boundaries is compared against Ambient Air Quality Objectives (AAQO) set by AEP, and is reported to the applicable regulatory bodies if objectives are exceeded. Data is also made available for public viewing on the FAP's website.

During the construction, decommissioning and reclamation phases of the Project, air emissions would include dust and emissions associated with the construction equipment. Dust reduction will be accomplished by use of water trucks. Construction power will be provided by diesel generators.

During operation, emission sources will include the diesel emissions from the locomotives and fugitive emissions from light duty vehicles.

Greenhouse Gas Emissions

The amount of greenhouse gas emissions associated with the Project operations and construction were estimated using activity-based fuel consumption rate and activity-specific average emission factors.

During the three-year construction period, construction is expected to emit a total of 12,730 tonnes CO_{2e} to the atmosphere, which accounts for 0.0047% of the 2013 provincial GHG emissions, and 0.0018% of the 2013 national GHG emissions (Environment Canada, 2015a).

Once in operation, the Project is expected to emit 4,564 tonnes CO_{2e} annually to the atmosphere, which accounts for 0.0017% of the 2013 provincial GHG emissions, and 0.0006% of the 2013 national GHG emissions (Environment Canada, 2015a).

2.4.2 Liquid Discharges

The only anticipated liquid discharges associated with the Project are stormwater runoff. Management of stormwater runoff within the development area of the Project will occur during all three Project life cycle phases: construction, operations and decommissioning/reclamation. Runoff during Project construction will be managed with a runoff collection system in place for existing facilities and the addition of temporary runoff collection ditches.

During operations, stormwater runoff will be captured before release to the environment by three stormwater retention ponds proposed as part of the Project. Runoff from the Project area north of the allowance for Township Road 560 will be captured by the RFS stormwater pond. Runoff from the remaining Project area, south of the Township 560 Road allowance, will be collected by the three other planned stormwater ponds. Existing facility operations in this catchment area are such that they are not expected to adversely affect the quality of runoff aside from increased suspended solids. The stormwater management ponds will have a combined retention capacity of approximately 48,400 m^3 and were designed to manage the runoff expected from a 1:100 year storm event (SamEng, 2016). The purpose of the ponds is to allow the suspended solids to settle, improving the quality of captured runoff before it is discharged to the environment in accordance with Alberta Municipal Stormwater Guidelines of 85% particulate removal >75 um. As there will be no transloading, or railcar washing, loading, or maintenance in the Project area and no spills or leaks of products are expected from normal operations that would cause an adverse effect to runoff captured and discharged.

Pembina has developed an emergency response plan to mitigate environmental impacts in the event of upset conditions causing an accidental spill. Each of the stormwater management ponds has a discharge control structure at the outlet, which can be closed in the event of upset conditions. If spilled fluids are captured by the runoff management system, or if stormwater runoff becomes affected by the spill, the captured fluids can be contained and tested before appropriate disposal.

The ponds will drain via a network of ditches and culverts before discharging the clarified runoff to the NSR. The conveyance of drainage from Pembina lands and the outfall structure at the NSR are owned by Sturgeon County, and are therefore not included in this Project. Pembina has worked closely with the County regarding regulatory approval and design of the outfall structure as stormwater from the Project will move through the outfall and ultimately to the NSR. This included Advisian (2016) completing a fisheries assessment in the area for the proposed County Outfall. This assessment concluded the stormwater runoff generated from the Project and discharging through a ditching system to the County outfall has low potential for aquatic impacts. The outfall will also be subject to approval through the DFO due to having activities below the low water mark and effluents entering the NSR. It will also need approval provincially by AEP through the *Water Act* and follow the Water: Codes of Practice.

As there is no wastewater produced from the Project, there are no other liquid discharges.

2.4.3 Types of Waste and Waste Management

During construction, operations, decommissioning and reclamation, the Project will generate both recyclable and non-recyclable waste. Overall, waste management will be integrated into the existing Pembina RFS waste management program and procedures, which is regulated under Pembina's existing EPEA approval. All waste streams will be contained and disposed of according to the Alberta *EPEA Waste Control Regulation* (Alberta

Regulation 192/1996) and the requirements for each specific waste as classified in the *Alberta User Guide for Waste Managers* (Alberta Environmental Protection). Recyclable material will be separated into various containers and removed from RFS for recycling by a licensed third-party supplier. Non-recyclable domestic waste will be stored on-site prior to being transported to an approved landfill by a licensed third-party supplier.

2.5 Estimated Schedule and Main Activities

The main activities related to the Project consist of five phases: Pre-Construction, Construction, Operation, Decommissioning/Reclamation and Abandonment. The table below provides the Project timeline. These dates are subject to change based on the timing of regulatory approval, procurement of materials and current economic status.

Estimated Project Schedule

Project Phase	Estimated Schedule
Pre-Construction	Q2 2016 – Q3 2016
Construction	Q3 2016 – Q3 2018
Operations	Q3 2017 – 2042
Decommissioning/Reclamation	2042 – 2047
Abandonment	2048

To allow for continued operation of the existing rail facility at RFS, the Project will be constructed in several years.

Construction Phases Schedule

Project Phase	Estimated Start Date
South Yard and Stormwater Ponds	August 2016*
Inbound Classification Yard	July 2017
Outbound Classification Yard	May 2018

*pending regulatory approval

During the various project phases Pembina will be required to maintain regulatory approvals including various monitoring and reporting requirements.

2.5.1 Pre-Construction

Pre-construction activities will include:

Land Clearing

Area requires little to no standing timber but any vegetation will be removed, with the majority of the vegetation consisting of shrubs and grasses. No merchantable timber exists. Woody vegetation will be chipped into mulch that can be used for future reclamation.

Soil Salvage

Soil salvage activities will be in accordance with applicable provincial and municipal regulatory requirements including the separate salvaging and storage of topsoil and subsoil permanent approved features.

Grading

The site will be graded with various cut and fills including the initial excavation of the three surface water control ponds. The Project will require a similar grade to the existing rail infrastructure and grading will be completed to meet design requirements.

2.5.2 Construction

As part of the construction activities Pembina will continue to comply with the *Alberta Weed Control Act* by enforcing the requirement that all construction equipment arriving on the Project site is free of mud, vegetation and seeds to help limit the opportunity for noxious weeds to establish on site. Ongoing monitoring will occur during and post construction to identify areas of concern and apply appropriate mitigation. The following are the main construction items:

Construction Support

- Access roads will be constructed during the grading of the site.
- Construction laydown areas to store building materials, equipment, fabrication and office space.
- Subsurface infrastructure will be installed prior to track installation.

Rail Subgrade

- Post site grading and survey subgrade construction can begin.
- This subgrade is made up of 12 inches of sub-ballast which consists of 3 inch minus pit run granular material.

Rail Installation

- Track material will be continuously arriving on site where it will be sorted and stored in laydown areas.
- Track will be constructed directly on the previously installed sub-ballast.
- Upon completion of the “skeletonized track” the track is flooded with railway ballast (2” minus heavily fractured rock), then lifted, lined and tamped to final alignment and elevation.

Rail Removal

- The existing Condensate Wye will be removed.
- The land in which this rail line was located on will be reclaimed to provincial guidelines.
- Track materials will be salvaged and re-used in the construction of new track when practical.

2.5.3 Operation

The Project will enter service under staged construction with commissioning, testing, and operation ongoing to allow continual transportation of product. An operating plan has been completed for each operational phase. The expected Project life is 30 years.

It is forecasted that when the Project is completed in 2018, pending all necessary regulatory approvals, the yard will handle 260 cars per day, which will be made up of approximately 195 cars per day carrying Williams/Pembina products and 65 cars per day NWR products. The Pembina rail contractor will organize rail cars in the classification yard according to the commodity the car will carry. The rail car will subsequently be moved from the classification yard, in Project area, over to the loading tracks. Following loading, the cars will return to the classification yard where Pembina rail contractor will organize the full cars into assembled trains for pick up by CN.

There are no loading or transloading facilities associated with this Project. Pembina has existing, operating loading facilities and some currently under construction associated with projects outside of the scope of this Project Description, which have previously been approved by regulators.

Pembina is currently a participant of the Emergency Response Assistance Canada (ERAC) program. This requires Transport Canada approval of the Facilities Emergency Response Assistance Plan (ERAP).

2.5.4 Decommissioning and Reclamation

At the time the rail yard is no longer required for everyday operations at the RFS site, the decommissioning phase will commence. During this time, utilities would be disconnected and surface infrastructure would be removed or recycled to various approved third-party licensed facilities. Salvaging, recycling or re-using materials is Pembina's preferred decommissioning method, if these options exist. Following the removal of surface infrastructure, subsurface infrastructure can be removed.

When remediation activities are completed, the rail yard will be regraded in an effort to blend with adjacent lands and to allow for natural drainage to occur. Stockpiled subsoil and topsoil will be replaced throughout the site and vegetation will be re-established as per provincial regulatory requirements and approved end land use plans.

The portion of the Project that falls within lands contained by the current EPEA Approval will require to be reclaimed as per outlined in the EPEA reclamation plan and subsequent approval. The Project lands that are outside of the current EPEA approved lands will be reclaimed to equivalent land capability. End land use for the rail yard will remain as heavy industrial use or as amended by Sturgeon County.

3.0 PROJECT LOCATION

3.1 Site Coordinates

The Project is related to the existing RFS facility located in Sturgeon County southwest of Redwater, Alberta. The disturbance area of the Project is approximately 52 ha. Coordinates and legal land description for the Project are as follows:

Coordinates (From the middle of the Project)	**Legal Land Description The Project will be located within portions of:**	
Latitude N 53° 48' 21.9" Longitude W 113° 08' 23.9"	NE 26 – 55 – 22 W4M SE 35 – 55 – 22 W4M SW 36 – 55 – 22 W4M NW 36 – 55 – 22 W4M	SW 1 – 56 – 22 W4M SE 1 – 56 – 22 W4M NE 1 – 56 – 22 W4M NW 6 – 56 – 21 W4M

Photos of the site location are available in Appendix A.

3.2 Permanent, Seasonal or Temporary Residences

The nearest permanent residence to the Project is approximately 1.4 km to the south. There are no residences on adjacent properties.

3.3 Cities, Towns and Hamlets

- The hamlet of Josephburg is approximately 9 kms south east of the Project
- The city of Fort Saskatchewan is approximately 10 kms south of the Project
- The town of Gibbons, Alberta is approximately 12 kms west of the Project
- The town of Bruderheim is approximately 13 kms east of the Project
- The Hamlet of Redwater is approximately 15 kms north of the Project

3.4 Traditional Territory of Aboriginal Groups

The Project is located entirely within Treaty 6 and within Métis Nation of Alberta Region 4 (Figure 3). However, Aboriginal groups in Treaty 6, 7 and 8 who may have asserted Traditional territory in the Project area have been notified; a full list of these groups was provided in Section 6 of this summary.

3.5 Federal Designated Lands

The Project is not located within federal designated lands. Elk Island National Park is located approximately 25 km to the southeast of the Project. The Enoch Cree Nation reserve lands are located 48 kms from the Project and the Canadian Forces Base in Edmonton is located approximately 26 kms south east of the Project.

3.6 Applicable Land Use, Water Use (including groundwater), Resource Management and Conservation Plans

The Project falls under the Sturgeon County Alberta's Industrial Heartland Area Structure Plan (ASP) Bylaw No 1118/07. As part of Sturgeon County's Municipal Development Plan (Bylaw 1313/13, April 22, 2014) and Land Use Bylaw 819/96 the existing and proposed sites for the rail yard are zoned for Heavy Industrial Use and Agricultural Heartland.

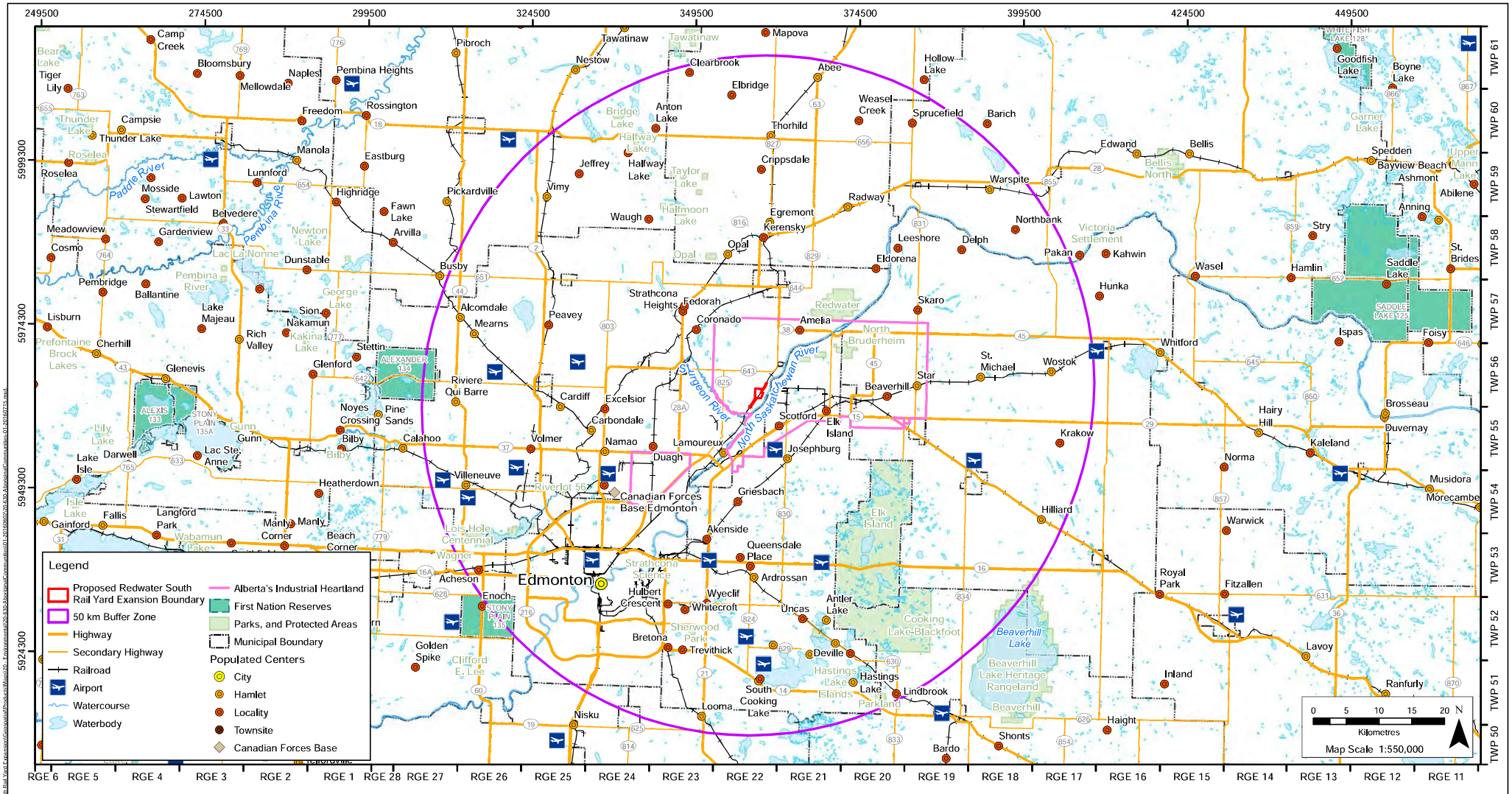
All guidelines for this Policy Area were considered during the Project's development application process to Sturgeon County.

The Project is also within the North Saskatchewan land use planning region defined by AEP. The North Saskatchewan Regional Plan is currently not complete. Phase 1 consultation (with "the Regional Advisory Council, First Nations and Métis groups, stakeholders, municipalities and the public") is complete. Regional Advisory Council is preparing Recommendation to Government report. (AEP, 2016).

3.7 Traditional Lands

Considering the private ownership[1] and the level of existing long-term industrial development immediately surrounding the Project, it is not anticipated that the Project will impact land or water currently used for Traditional purposes. Pembina notified Aboriginal groups who may have asserted Traditional territory in the Project area (Figure 3); to date through ongoing consultation, Pembina has not yet received any claim to Traditional land or impacts to traditional land use. This is further discussed in Section 6 of this document.

[1] Pembina has ownership data for each parcel of land. According to this data the lands have been privately owned for varying lengths of time ranging from 1963 to 1987.



PEMBINA

Pembina Redwater South Rail Yard Expansion
Township 56 and 55-20 W4M
Aboriginal Communities and Industrial Heartland

Integrated Environments
Planning • Integration • Management

Projection: NAD 83 UTM Zone 12N
When printed on 11" X 17" sheets, scale is 1:550,000

Figure Number	3	IEL Project Number	16415

Revision	Date	Created by
00	20 MAY 2016	IY
01	18 JUL 2016	IY

Sources: Parks: AltaLIS 2008; Hydrology: AltaLIS 2014; Railroad: Natural Resources Canada 2013; Highways, Municipal Boundary, Hamlets, Populated Area: AltaLIS 2015

4.0 FEDERAL INVOLVEMENT – FINANCIAL SUPPORT, LANDS AND LEGISLATIVE REQUIREMENTS

No proposed or anticipated federal financial support that federal authorities are, or may be, providing are required to support the carrying out the Project. There are no federal lands required in support of the Project and no additional federal regulatory requirements associated.

5.0 ENVIRONMENTAL EFFECTS

5.1 Physical and Biological Setting

This section summarizes the baseline environmental information collected for the Project.

5.1.1 Soil

The Project area is comprised of approximately half disturbed and half undisturbed land. Landscapes vary from cultivated agricultural fields to heavily industrialized developments consisting of gravel pads, gravel piles, existing rail lines, existing access roads and current disturbances related to pipeline installation. Undisturbed land is comprised of moderately fine textured Rego Black Chernozems that are found primarily in the southwest corner of the Project and Orthic Black Chernozems along the north boundary of the proposed footprint. The disturbed areas would be of similar soil quality based on predominantly the Peace Hills soil series (AGRASID, 2015). The majority of the Project has a low reclamation suitability rating due to the stoniness, low pH and inherent soil characteristics for water holding capacity.

Land use is heavy industrial and Pembina has been and will continue to practice all applicable topsoil and subsoil salvage and conservation techniques in an effort to reclaim soil conditions to an equivalent capability once operations cease.

5.1.2 Vegetation and Wetlands

The Project is within the Boreal Forest Natural Region and the Dry Mixedwood subregion of Alberta. Roughly half of the Project has been previously disturbed and the undisturbed areas consist of cultivated land. No tree cover exists in the Project area. Agronomic perennial crops are found on the cultivated lands and limited vegetation is found within the disturbed areas including clover, slough grass, Kentucky bluegrass, wire rush and common cattails. One temporary graminoid marsh, with an area of 0.39 hectares, was field verified and an application has been submitted to AEP for *Water Act* approval for Pembina to provide wetland compensation for the loss resulting from the Project.

Presence of invasive species was identified in areas of disturbance and consisted of perennial sow thistle and Canada thistle. Pembina has a weed management policy for all of their sites and continues to address any noxious weed issues with the appropriate actions in order to mitigate weed occurrences.

No federally or provincially listed vegetation species were observed on Project area. At the end of the operational life of the Project, Pembina will develop a reclamation plan in accordance with the applicable legislation and regulations at the time decommissioning and reclamation activities are to take place. The plan will be reflective of local end land use objectives and adjacent land use. Vegetation cover will be re-

established with provincial regulator approved certified weed free seed mix in an effort to achieve equivalent land capability.

5.1.3 Hydrology

No Class A – C waterbodies intersect the Project area. The closest waterbody is the NSR (Class C), located approximately 1.0 km to the east of the Project. The NSR is one of the largest watersheds in Alberta with a total drainage area of approximately 131,800 km^2 and an effective drainage area of 68,800 km^2. RFS and the Project are part of many regional plans providing various frameworks for managing the North Saskatchewan watershed to minimize industrial impacts. Regional plans that provide guidance for the protection of the watershed include: Water Management Framework for the Industrial Heartland, Northeast Capital Industrial Association and the North Saskatchewan River Regional Plan.

The construction and operation of the Project does not require any surface water withdrawals. The three surface water control ponds are designed to limit local erosion and ensure water quality to minimize sediment load discharge. These ponds are being constructed to remove 85% of particles 75 µm or greater (Alberta Environment, 2001) and to handle a 1:100 year storm event per the Alberta (Alberta Environmental Protection, 1999), as per Alberta stormwater management guidelines.

5.1.4 Hydrogeology

The uppermost bedrock unit in the region consists of sandstones, siltstones, and shales of the Belly River Formation (Stein, 1976). Regionally, groundwater yields from fractured and weathered bedrock units is sufficient for it to be considered a modest groundwater resource. Roughly parallel to, and underlying, the modern-day NSR is the Beverly Channel, a pre-glacial buried valley. The sands and gravels of the Beverly Channel create high-yield (up to 7.6 L/s) and important regional aquifers, and are often hydraulically connected to the NSR.

The Project is not expected to cause an adverse environmental effect on the quantity of groundwater in local resources, as no groundwater is going to be extracted and there is no major subsurface work associated with the Project.

As there will be no or railcar washing, loading, or maintenance in the Project area, no spills or leaks of products are expected from normal operations. Pembina has best-management-practices for handling petroleum products and wastes to prevent instances of leaks and spills, including routine equipment inspections, use of vehicle spill kits, policy to immediately address any leaks, and proper waste and chemical identification and disposal. If leaks or small spills do occur, the fine-grained surficial sediments are of sufficient thickness and impermeability to offer protection to underlying groundwater resources. Pembina has developed an emergency response plan to mitigate environmental impacts in the event of upset conditions causing an accidental spill. The existing aspects of RFS, surrounding and north of the Project, are currently monitored for groundwater conditions per EPEA Approval No. 9995-02-00 (as amended). Since much of the Project is within areas currently monitored, any unnoticed Project releases in those areas will be detected by the groundwater monitoring program.

Changes to groundwater quantity from the stormwater management facility is expected to be negligible. The ponds will be clay-lined, which will impede infiltration and prevent the ponds from being significant

groundwater recharge areas. Considering surficial sediments are also fine-grained, the low infiltration rates from the ponds are not expected to reduce the natural groundwater recharge rates for the Project area.

Negative effects to the quality of groundwater resources are not expected from the stormwater management facility proposed as part of the Project. Stormwater draining to the three ponds is expected to carry suspended sediment, but not otherwise be adversely affected by the Project activity under normal operating conditions. The suspended sediment will settle out and collect in the ponds, and will not infiltrate to groundwater resources.

5.1.5 Wildlife

The Project is located adjacent to, and partially within a Provincial Key Wildlife and Biodiversity Zone (KWBZ) which runs along the NSR. An environmental site assessment completed for the proposed Project (Stantec 2015) characterized habitat as lacking significant native vegetation cover, surrounded by large expanses of disturbance and ongoing industrial activity. The Project footprint is generally considered to be of low quality for wildlife. Small areas of grass and weeds as well as a narrow strip of windrow trees would be capable of providing nesting and foraging habitat for birds, as well as providing cover and foraging habitat for some mammal species. Existing ephemeral wetlands may provide breeding habitat for some amphibian species in wet years. The Project is not within any federal wildlife areas or reserves.

A desktop review identified 47 mammal species, 189 bird species, 6 amphibian species, and 2 reptile species that have geographic ranges overlapping with the Project area (Federation of Alberta Naturalists 2007; Smith 1993; Russel and Bauer 2008). Based on the habitat preferences of those species, it is anticipated that 103 wildlife species may use patches of available habitat within the Project area to satisfy certain life requisites on a seasonal or year-round basis.

The Project will result in a small amount of direct habitat loss due to the construction of new railway tracks and associated infrastructure. Sensory disturbances during construction and operation will lead to indirect habitat loss for wildlife in areas proximal to the Project. The high amount of existing disturbance and altered landscape has likely already reduced the habitat effectiveness for many wildlife species in the area. The Project and associated components, are not likely to significantly contribute to wildlife habitat loss in the area, and therefore adverse effects are not anticipated.

A small amount of the Project area falls within a KWBZ associated with the NSR, intended to protect ungulate winter habitat and maintain movement corridors along the river. The Project is located above the river valley, with the footprint falling within an industrial development area, and is not expected to reduce wildlife's ability to use habitat within the KWBZ or impact wildlife movement within the zone.

The Project is not anticipated to significantly contribute to local wildlife mortality. Although new rail lines and some road construction are part of the planned activities, existing rail infrastructure, roads and industrial development have likely already reduced local wildlife use, in turn lowering wildlife encounters and mortality risks. If wildlife is observed during construction and operation of the Project, mitigation will be developed to reduce the likelihood of mortality as a result of project activities where required. See Terrestrial Wildlife Species That Have Ranges Which Overlap the Project Area in Appendix B and Birds Covered Under The MCBA That Have Ranges Which Overlap With The Project Area in Appendix C. See the List of Species Covered Under The MCBA That May Be Found In The Project Area Based On Species Habitat Preferences and Ranges in Appendix D.

5.1.6 Aquatics

No Class A to C waterbodies intersect the Project. The closest waterbody is the NSR (Class C), located approximately 1.0 km to the east of the Project.

A fisheries assessment was completed in the area for the proposed County Outfall. The assessment was based on the Fish and Wildlife Management Information System (FWMIS). The Fish and Wildlife Division of the AEP deemed that there was sufficient information to determine likely fish presence within the potentially affected reach portion of the NSR (Advisian, 2016). The review of the FWMS identified a total of 36 fish present in the NSR, of which 20 were confirmed to be present within a 5 Km radius of the proposed outfall Project area.

Over 1000 fish surveys have taken place within 5 km of the Project (FWIMT, 2015). Survey sites were located for the majority on the NSR, Astotin Creek and unnamed tributaries. Surveys resulted in the identification of 20 different species including: longnose dace, pearl dace, brook stickleback, fathead minnow, quillback, lake chub, emerald shiner, shorthead redhorse, silver redhorse, longnose sucker, white sucker, sauger, trout-perch, walleye, goldeye, mooneye, mountain whitefish, northern pike, sturgeon and burbot. However, fisheries assessment completed in the area of the proposed County outfall reported that downstream of the outfall the immediate receiving habitat does not provide suitable spawning habitat for fish known to inhabit this reach of the NSR. Therefore, the stormwater runoff generated from the Project and discharging through a ditching system to the County outfall has low potential for aquatic impacts. A list of fish species reported in the North Saskatchewan River can be viewed in Appendix E.

As there will be no railcar washing, loading, or maintenance in the Project area, no spills or leaks of products are expected from normal operations. Pembina has best-management-practices for handling petroleum products and wastes to prevent instances of leaks and spills, including routine equipment inspections, use of vehicle spill kits, policy to immediately address any leaks, and proper waste and chemical identification and disposal. Pembina has developed an emergency response plan to mitigate environmental impacts in the event of upset conditions causing an accidental spill.

5.1.7 Air

Construction of the Project is anticipated to contribute to local and temporary increases in dust and exhaust emissions. Project operations emissions are expected to include typical diesel locomotive operational emissions; these have the potential to impact local air quality only.

GHG emissions from both Project construction and operations are anticipated to be negligible compared to industrial practices in the Project vicinity and Provincial emissions.

In consideration of the regional air quality data, industrial zoning of the Project, and similar operations in the Project vicinity, air emissions due to Project operations are not expected to impact regional air quality and no adverse effects on air quality due to the Project are anticipated. FAP continues to monitor air quality in the region encompassing the Project.

5.1.8 Noise

The Industrial Heartland, including the Project is subject to the Regional Noise Management Plan (RNMP). The AER determined that traditional noise management practices are not practical due to the high concentration of industrial activity in the Industrial Heartland. Noise compliance in the region is verified through the RNMP

which is jointly developed by the AER and the Northeast Capital Industrial Association. During the life of the Project noise will be emitted from construction machinery, the locomotives and rail cars as well as associated light duty vehicles.

The Noise Impact Assessment for the Project, performed by Stantec in March, 2016, identified the noise sources associated with the Project as well as the nearby receptors of concern. The study determined the baseline sound levels at the nearby receptors to be between 47.5 and 56.8 dBA daytime and 44.4 to 55.2 dBA night-time. The expected noise levels due to the Project are expected to increase the baseline sound levels at the receptors by between 0.0 and 0.3 dBA, which is considered "no net increase" and therefore compliant with the AER's Directive 038: Noise Control (Stantec, 2016). The RFS site will continue to comply with RNMP objectives by applying best practices for noise management and performing compliance noise monitoring as directed by the NCIA.

5.1.9 Archaeological

In accordance with the Alberta *Historical Resources Act* a historical resource desktop review of the Historic Resources Management Branch database, as part of the provincial Department of Culture and Tourism, was completed for the Project site and no Historical Resource Value notations or historical resources were identified. Clearance for the Project has been obtained.

If a historic resource is encountered during the construction and or operation of the Project, Pembina will stop activities in the area and will contact Alberta Culture and Tourism. Pembina will work with Alberta Culture and Tourism to develop an appropriate mitigation plan based on the historical resource found.

5.2 Potential Changes to the Environment Related to the Project

5.2.1 Fish and Fish Habitat (*Fisheries Act*)

No adverse effect on fish, or fish habitat due to the Project are anticipated (see Section 5.1.6 *Aquatics*).

The Federal Government, through DFO, has developed a number of Pathways-of-Effects (PoE) models and Measures to Avoid Causing Harm to Fish and Fish Habitat to assist proponents (DFO, 2013). A PoE was conducted for the proposed County outfall location in support of the County's regulatory applications (Advisian, 2016). The PoE assessment did not identify any residual effects if measures to avoid harm are followed during construction of the outfall.

5.2.2 Marine Plants (*Fisheries Act*)

The Project is not located in an area where marine plants occur and therefore no marine plants will be effected by this Project.

5.2.3 Migratory Birds (Migratory Birds Convention Act, 1994)

The Project is located in bird nesting Zone B4 with a restricted activity period (RAP) of mid-April to end of August. If vegetation clearing activities fall within the RAP, a bird nest survey will be conducted to ensure nests and young are protected as required by the *Migratory Bird Convention Act, 1994*. If nests are found within the construction area, the qualified biologist will provide appropriate setbacks from the nest to avoid disturbance until such time as the young have fully fledged.

The high amount of existing disturbance and altered landscape has likely reduced the habitat effectiveness for many migratory birds in the area. The Project and associated components, are not likely to significantly affect migratory birds or their habitat and therefore adverse effects on migratory birds are not anticipated.

Mitigation will be put in place to reduce any attraction to storm water ponds created as a result of the Project, specifically to address the unlikely exposure to potential contaminants. Vegetation management and removal will be initiated as required along the perimeter of the ponds to reduce the likelihood of birds using the area. Other deterrents will be put in place should migratory birds including waterfowl be observed using the ponds during periods of water retention

5.2.4 Species at Risk Act

A desktop assessment identified 20 federally listed species, 13 of which are SARA listed (GOC 2016) that have ranges which overlap the Project area (Federation of Alberta Naturalists 2007; Smith 1993; Russel and Bauer 2008).

Based on habitat preferences, there is potential for 11 federally listed species, 7 of which are SARA listed (GOC 2016; Federation of Alberta Naturalists 2007; Smith 1993; Russel and Bauer 2008) to use habitat in the project area however, these habitats are generally highly disturbed and considered to be of low quality for these species.

5.3 Potential Environmental Effects to Federal Lands Related to the Project

There are no changes to federal lands anticipated during the construction or operations of the Project. The closest federal property is Elk Island National Park, located approximately 25 km to the east – southeast. During the construction and operation of the Project no associated negative affects to Elk Island National Park or any other federal land in the region is expected. There are no First Nations reserve lands within 10 km of the Project and the closest First Nation Reserve or settlement is located approximately 48 km south west.

There are no potential effects to any province other than Alberta or another country other than Canada.

5.4 Potential Environmental Effects to Aboriginal Peoples Related to the Project

Effects on Aboriginal peoples due to changes in the biophysical and socio-economic environment, caused by the Project are not anticipated, considering the following reasons:

- The Project is located within Alberta's Industrial Heartland, within Sturgeon County, and the majority of the Project area is zoned Heavy Industrial Use with a small portion zoned as Agricultural Heartland;
- The majority of the land used for the Project is owned by Pembina. Pembina is working on land acquisitions with the landowners of the other parcels that are not privately owned by Pembina, allowing the development to occur;
- The land to be used for the Project has been privately owned for decades[2]; and
- The degree of existing long-term industrial development immediately surrounding the Project

[2] Pembina has ownership data for each parcel of land. According to this data the lands have been privately owned for varying lengths of time ranging from 1963 to 1987.

Based on the outcome of assessments on potential environmental effects associated with this Project (see section 5 of this report and associated references) it is not anticipated that Aboriginal peoples' health will be effected.

The socio-economic conditions of Aboriginal peoples could be positively impacted by the Project as Pembina seeks to engage Aboriginal contractors and businesses in their developments; for this Project specifically, an Aboriginal business has already been sourced to facilitate Project planning and development.

Any physical and cultural heritage, and the current use of lands and resources for traditional purposes, are not anticipated to be effected by the Project considering the degree of heavy industrial development immediately surrounding the Project site, and pre-disturbance and/or cultivation of the Project site itself. Based on the private ownership of the Project site, long-term existing development surrounding the site, pre-disturbance and/or cultivation of the site, it is not anticipated that the site is currently being used for traditional purposes.

Additionally, it is not anticipated that the Project will impact any structure, site or thing that is of historical, archaeological, paleontological or architectural significance as the Project was granted clearance from Alberta Culture and Tourism under the Historical Resources Act (HRA) for the stormwater management and rail expansion areas on February 3, 2016 and February 12, 2016, respectively. The Project does not contain any HRV listings indicating potential historical resource concerns. It is not anticipated there would be any effects on any structure, site or thing that is of historical, archaeological, paleontological or architectural significance.

However, any potential effects to Aboriginal Peoples not yet considered by Pembina may be identified as an outcome of the Aboriginal Consultation Plan outlined in section 6.4 *Consultation Plan*, at which time Pembina will work to mitigate effects where feasible.

6.0 PROPONENT ENGAGEMENT AND CONSULTATION WITH ABORIGINAL GROUPS

This Project will take place on freehold land located within the Alberta Industrial Heartland (Figure 3). Considering the level of long-term heavy industrial development immediately surrounding the Project, it is not anticipated the Project will impact any Aboriginal groups' asserted traditional territory or traditional land uses in the Project area. However, Pembina notified Aboriginal groups, listed below, who may have asserted Traditional territory in the Project area, and to date throughout ongoing consultation has not yet received any claim to traditional land or impacts to traditional land use. Responses to the notifications were received by Tsuut'ina Nation, Samson Cree Nation, Piikani Nation, and Stoney Nakoda Nation. Pembina's Aboriginal relations team had initial phone calls and subsequently met with these groups, to discuss the Project and provide further information as to Project location and Project details. Pembina has also spoken with, and organized a meeting with Ermineskin Cree Nation. Pembina commits to continue to meet with Aboriginal groups to ensure meaningful engagement, and is organizing site visits as requested. At this time no concerns have been expressed. Communication with groups will be ongoing.

- Alexander First Nation
- Alexis Nakota Sioux Nation
- Beaver Lake Cree Nation
- Blood Tribe
- Buffalo Lake Métis Settlement
- Chipewyan Prairie Dene Nation
- Enoch Cree Nation
- Ermineskin Cree Nation
- Foothills Ojibway First Nation
- Fort McMurray First Nation
- Gunn Métis Local #55
- Kikino Métis Settlement
- Louis Bull Tribe
- Métis Nation of Alberta - Region 1
- Métis Nation of Alberta - Region 2
- Métis Nation of Alberta - Region 4
- Montana First Nation
- Paul First Nation
- Piikani Nation
- Saddle Lake Cree Nation
- Samson Cree Nation
- Siksika Nation
- Stoney Nation (including Bearspaw, Chiniki and Wesley First Nations)
- Tsuut'ina Nation
- Whitefish Lake First Nation #128

Pembina is committed to addressing any concerns surrounding the Project. If it is determined that Consultation with Aboriginal groups is required, by Federal or Provincial regulatory bodies, Pembina has developed a Consultation Plan to ensure that open and meaningful communication and engagement is established between all involved parties. The Aboriginal Consultation Plan outlines the processes and approaches used to collect and share information, as well as the feedback mechanism for input to be meaningfully considered, inform the Project, and then be shared back to interested groups. Consultation will commence as soon as possible, after notification of necessity by the regulatory body, prior to Project construction. The consultation schedule will be developed with input from regulators and Aboriginal communities.

Where feasible, information, with the Aboriginal community and any other parties identified by the community who would have an interest in the Project, will be shared primarily by telephone, in-person meetings, and via email. Notifications will be sent out by registered mail and documents would include any policy information related to the Project of interest to the community, and or individual. Additionally, email, telephone and the Pembina website will be used to ensure that information is accessible to any interested parties.

Through open communication and meaningful consultation, Pembina will collect feedback and assess the needs and requests of the Aboriginal community, for information, engagement, consultation, and possible accommodation where applicable. Pembina will take all concerns raised in discussions into consideration and work to identify appropriate approaches to address such matters. The appropriate approach will vary and may include (but not be limited to) providing additional information, undertaking necessary studies, and potential modification to the Project design, where feasible.

Pembina is maintaining a record of consultation, which includes a record of documentation issued and information shared, as well as feedback received through all forms of communication. This record will also include the approaches identified to address comments or concerns raised during engagement and consultation with Aboriginal communities.

7.0 CONSULTATION WITH THE PUBLIC AND OTHER PARTIES

Consultation has been, and continues to be conducted with stakeholders in an effort to provide RFS site information, as well as respond to concerns and questions. Records of any consultation related activities are retained to document the open dialogue, and to manage any commitments or agreements that should develop based on these discussions. Feedback from the Sturgeon County included the feedback of landowners in the county. Comments received to date included comments generally related to infrastructure associated with the Project like roads and buildings, impacts to wildlife and Project operations.

Consultation with other jurisdictions that have environmental assessment or regulatory decisions to make with respect to the Project include:

- Sturgeon County; Planning and Development Department → Development Permit;
- AER → notification under the current EPEA Approval for the activities on the RFS site;
- Alberta Transportation and the local emergency response agency → in relation to obtaining approval under the *Railway (Alberta) Act*; and
- AEP → in relation to the *Alberta Water Act* and its association to the site wetlands and the surface water control ponds.

Pembina has begun the consultation and approval processes to obtain the above listed required approvals. To date the following updates can be provided:

- Sturgeon County has been very receptive to the Project and discussions are ongoing in an effort to obtain a Development Permit (expected in June 2016);
- AER was notified under EPEA Approval 9995-02-00 was submitted to the AER on August 17, 2015 in order to allow for the development of the Project;
- The Provincial *Railway (Alberta) Act* notice of construction is scheduled for submission in Q2 of 2016; and
- Applications under the *Water Act* for any affected wetland, will be submitted to the AEP; a *Water Act* Approval for the surface water control ponds is required as these structures (requirements of Sturgeon County's Development Permit) will temporarily divert the natural flow of water in an effort to help control local erosion.

All necessary approvals will be obtained prior to the start of construction activities.

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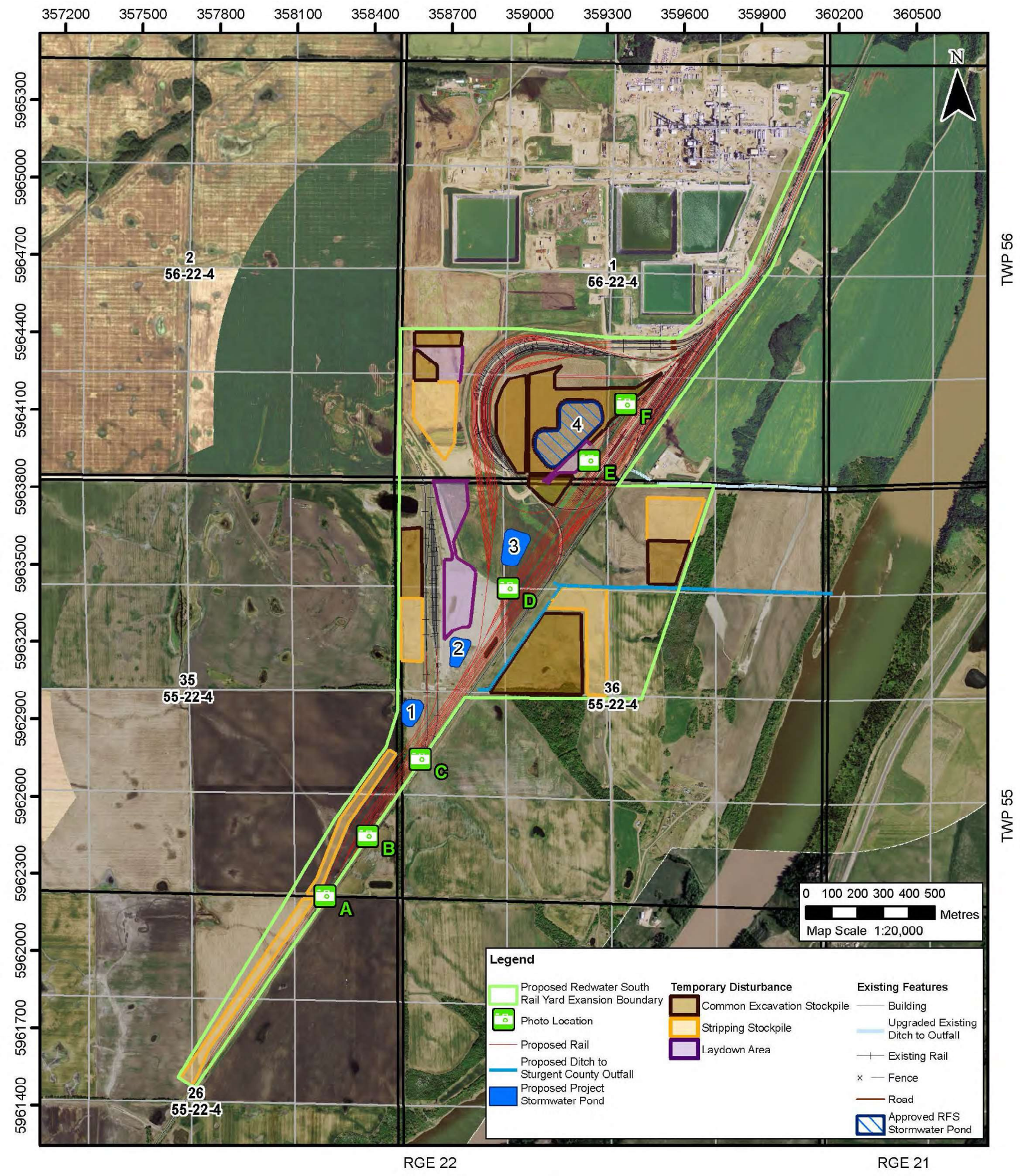
APPENDIX A - SITE PHOTOGRAPHS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Map Scale 1:20,000
Legend
Proposed Redwater South Rail Yard Exansion Boundary
Photo Location
Proposed Rail
Proposed Ditch to Sturgent County Outfall
Proposed Project Stormwater Pond
Temporary Disturbance
Common Excavation Stockpile
Stripping Stockpile
Laydown Area
Existing Features
Building
Upgraded Existing Ditch to Outfall
Existing Rail
Fence
Road
Approved RFS Stormwater Pond

Photograph A - facing Northeast

Photograph B - facing Northeast

Photograph C - facing Northeast

Photograph D - facing Northeast

Photograph E - facing West

Photograph F - facing Southwest

APPENDIX B - TERRESTRIAL WILDLIFE SPECIES THAT HAVE RANGES WHICH OVERLAP THE PROJECT

Common Name	Scientific Name	Suitable Habitat Within Project Area	– GSOAWS Status[3]	–COSEWIC Status[4]	SARA Schedule[5]	SARA Status[6]
Mammals						
Arctic shrew	*Sorex arcticus*		Secure			
American Badger	*Taxidea taxus*	✓	Sensitive	Special Concern	No Schedule	No Status
American beaver	*Castor canadensis*		Secure			
American mink	*Mustela vison*		Secure			
Big brown bat	*Epesicus fuscus*	✓	Secure			
Canada lynx	*Lynx canadensis*		Sensitive	Not at Risk		
Common porcupine	*Erethizon dorsatum*	✓	Secure			
Coyote	*Canis latrans*	✓	Secure			
Deer mouse	*Peromyscus maniculatus*	✓	Secure			
Dusky (montane) shrew	*Sorex monticolus*	✓	Secure			
Heather vole	*Phenacomys intermedius*	✓	Secure			
Hoary bat	*Lasiurus cinereus*	✓	Sensitive			
Eastern Red Bat	*Lasiurus borealis*	✓	Sensitive			
Franklin's ground squirrel	*Spermophilus franklinii*	✓	Undetermined			
Least weasel	*Mustela nivalis*	✓	Secure			
Little brown myotis	*Myotis lucifugus*	✓	Secure	Endangered	Schedule 1	Endangered
Least chipmunk	*Tanias minimus*	✓	Secure			
Long eared myotis	*Myotis evotis*	✓	Secure			
Long-legged myotis	*Myotis volans*	✓	Undetermined			
Long-tailed weasel	*Mustela frenata*	✓	May be at Risk			
Masked shrew	*Sorex cinereus*	✓	Secure			

[3] 2010 General Status of Alberta Wild Species (Alberta Environment and Parks, 2016)

[4] Committee on the Status of Endangered Species (GOC, 2016)

[5] Species at Risk Public Registry. Schedule 1 (GOC, 2016).

[6] Species at Risk Public Registry. (GOC, 2016).

Common Name	Scientific Name	Suitable Habitat Within Project Area	–GSOAWS Status[3]	–COSEWIC Status[4]	SARA Schedule[5]	SARA Status[6]
Meadow jumping mouse	*Zapus hudsonius*	✓	Secure			
Meadow vole	*Microtus pennsylvanicus*	✓	Secure			
Moose	*Alces americanus*	✓	Secure			
Mule deer	*Odocoileus hemionus*	✓	Secure			
Muskrat	*Ondatra zibethicus*		Secure			
Northern bog lemming	*Synaptomys borealis*	✓	Secure			
Northern flying squirrel	*Glaucomys sabrinus*		Secure			
Northern myotis	*Myotis septentrionalis*	✓	May be at Risk	Endangered	Schedule 1	Endangered
Northern pocket gopher	*Thomomys talpoides*	✓	Secure			
Prairie shrew	*Sorex haydeni*	✓	Secure			
Prairie vole	*Microtus ochrogaster*	✓	Secure			
Pygmy shrew	*Sorex hoyi*	✓	Secure			
Raccoon	*Procyon lotor*	✓	Secure			
Red Fox	*Vulpesvulpes*	✓	Secure			
Red squirrel	*Tamiasciurus hudsonicus*	✓	Secure			
Richardson's ground squirrel	*Spermophilus richardsonni*	✓	secure			
Short-tailed weasel	*Mustela erminea*	✓	Secure			
Silver-haired bat	*Lasionyceteris noctivagans*	✓	Sensitive			
Snowshoe hare	*Lepus americanus*	✓	Secure			
Southern red-backed vole	*Clethrionomys gapperi*	✓	Secure			
Striped skunk	*Mephitis mephitis*	✓	Secure			
Thirteen-lined ground squirrel	*Spermophilus tridecemlineatus*	✓	Undetermined			
Water shrew	*Sorex palustris*	✓	Secure			
White-tailed deer	*Odocoileus virginianus*	✓	Secure			

Common Name	Scientific Name	Suitable Habitat Within Project Area	–GSOAWS Status[3]	–COSEWIC Status[4]	SARA Schedule[5]	SARA Status[6]
White-tailed jackrabbit	*Lepus townsendii*	✓	Secure			
Woodchuck	*Marmota monax*	✓	Secure			
Amphibians						
Boreal chorus frog	*Pseudacris maculata*	✓	Secure			
Canadian toad	*Bufo hemiophrys*	✓	May be at Risk			
Northern leopard frog	*Rana pipiens*	✓	At Risk	Special Concern	Schedule 1	Special Concern
Tiger salamander	*Ambystoma mavortium*	✓	Secure	Special Concern	No Schedule	No Status
Western toad	*Anaxyrus boreas*	✓	Sensitive	Non-active	Schedule 1	Special Concern
Wood frog	*Rana sylvatica*	✓	Secure			
Reptiles						
Plains garter snake	*Thamnophis radix*	✓	Sensitive			
Red-sided garter snake	*Thanmophis sirtalis*	✓	Sensitive			
Birds						
Alder flycatcher	*Empidonax alnorum*	✓	*Secure*			
American avocet	*Recurvirostra americana*		*Secure*			
American bittern	*Botaurus lentiginosus*		*Sensitive*			
American coot	*Fulica americana*		*Secure*	*Not at Risk*		
American crow	*Corus brachyrrhynchos*	✓	*Secure*			
American goldfinch	*Carduelis tristis*		*Secure*			
American green-winged teal	*Anas crecca*		*Sensitive*			
American kestrel	*Falco columbarius*	✓	*Sensitive*			
American redstart	*Setophaga ruticilla*		*Secure*			
American robin	*Turdus migratorius*	✓	*Secure*			

Common Name	Scientific Name	Suitable Habitat Within Project Area	–GSOAWS Status[3]	–COSEWIC Status[4]	SARA Schedule[5]	SARA Status[6]
American three-toed woodpecker	*Picoides dorsalis*		*Secure*			
American white pelican	*Pelecanus erythrorhyncynchos*		*Sensitive*	*Not at Risk*		
American wigeon	*Anas americana*		*Secure*			
Bald eagle	*Haliaeetus leucocephalus*		*Sensitive*	*Not at Risk*		
Baltimore oriole	*Icterus galbula*		*Sensitive*			
Bank swallow	*Riparia riparia*		*Secure*	*Threatened*	*No Schedule*	*No Status*
Barn swallow	*Hirundo rustica*	✓	*Secure*	*Threatened*	*No Schedule*	*No Status*
Barred owl	*Strix varia*		*Sensitive*			
Barrow's goldeneye	*Bucephala islandica*		*Secure*			
Belted kingfisher	*Ceryle alcyon*		*Secure*			
Black tern	*Chlidonias niger*		*Sensitive*	*Not at Risk*		
Black-and-white warbler	*Mniotilta varia*		*Secure*			
Black-billed cuckoo	*Coccyzus erthropthalmus*		Undetermined			
Black-billed magpie	*Pica hudsonia*	✓	*Secure*			
Black-capped chickadee	*Poecile atricapillus*	✓	*Secure*			
Black-crowned night-heron	*Nycticorax nycticorax*		*Sensitive*			
Blackpoll warbler	*Dendroica striata*		*Secure*			
Blue jay	*Cyanoncitta cristata*	✓	*Secure*			
Blue-headed vireo	*Vireo solitaries*		*Secure*			
Blue-winged teal	*Anas discors*		*Secure*			
Bobolink	*Dolichonyx oryzivorus*	✓	*Sensitive*	*Threatened*	*No Schedule*	*No Status*
Bonaparte's gull	*Larus philadelphia*		*Secure*			
Boreal chickadee	*Poecile hudsonica*	✓	*Secure*			
Brewer's blackbird	*Euphagus cyanocephalus*	✓	*Secure*			

Common Name	Scientific Name	Suitable Habitat Within Project Area	–GSOAWS Status[3]	–COSEWIC Status[4]	SARA Schedule[5]	SARA Status[6]
Broad-winged hawk	*Buteo platypterus*		*Sensitive*			
Brown creeper	*Certhia Americana*		*Sensitive*			
Brown thrasher	*Toxostoma rufum*	✓	*Secure*			
Brown-headed cowbird	*Molothrus ater*	✓	*Secure*			
Bufflehead	*Bucephala albeola*		*Secure*			
California gull	*Larus californicus*		*Secure*			
Canada goose	*Branta canadensis*		*Secure*			
Canada warbler	*Wilsonia canadensis*		*Sensitive*	*Threatened*	*Schedule 1*	*Threatened*
Canvasback	*Aythya valisineria*		*Secure*			
Cape may warbler	*Dendroica tigrina*		*Sensitive*			
Cedar waxwing	*Bombycilla cedrorum*		*Secure*			
Chipping sparrow	*Spizella passerine*	✓	*Secure*			
Cinnamon teal	*Anas cyanoptera*		Secure			
Clay-colored sparrow	*Spizella pallida*	✓	*Secure*			
Cliff swallow	*Petrochelidon pyrrhonota*		*Secure*			
Common goldeneye	*Bucephala clangula*		*Secure*			
Common grackle	*Quiscalus quiscula*		*Secure*			
Common loon	*Gavia immer*		*Secure*	*Not at Risk*		
Common merganser	*Mergus merganser*		*Secure*			
Common nighthawk	*Chordeiles minor*	✓	*Sensitive*	*Threatened*	*Schedule 1*	*Threatened*
Common raven	*Corvus corax*		*Secure*			
Common Redpoll	*Carduelis flammea*	✓	*Secure*			
Common tern	*Sterna hirundo*		*Secure*	*Not at Risk*		
Common yellowthroat	*Geothlypis trichas*		*Sensitive*			

Common Name	Scientific Name	Suitable Habitat Within Project Area	–GSOAWS Status[3]	–COSEWIC Status[4]	SARA Schedule[5]	SARA Status[6]
Connecticut warbler	*Oporornis agilis*	✓	*Secure*			
Cooper's hawk	*Accipiter cooperii*		*Secure*			
Dark-eyed junco	*Junco hyemalis*	✓	*Secure*			
Double-crested cormorant	*Phalacrocorax auritus*		*Secure*	*Not at Risk*		
Downy woodpecker	*Picoides pubescens*	✓	*Secure*			
Eared grebe	*Podiceps nigricollis*		*Secure*			
Eastern kingbird	*Tyrannus tyrannus*	✓	*Secure*			
Eastern phoebe	*Sayornis phoebe*	✓	*Sensitive*			
European starling	*Sturnus vulgaris*	□	*Exotic*			
Evening grosbeak	*Coccothraustes vespertinus*		*Secure*			
Forster's tern	*Sterna forsteri*		*Sensitive*			
Fox sparrow	*Passerella iliaca*		*Secure*			
Franklin's gull	*Larus pipixcan*		*Secure*			
Gadwall	*Anas strepera*		*Secure*			
Golden eagle	*Aquila chrysaetos*		*Sensitive*	*Not at Risk*		
Golden-crowned kinglet	*Regulus satrapa*		*Secure*			
Gray catbird	*Dumetella carolinensis*	✓	*Secure*			
Gray jay	*Perisoreus canadensis*		*Secure*			
Gray partridge	*Perdix perdix*		*Exotic*			
Great blue heron	*Ardea herodias*		*Sensitive*			
Great crested flycatcher	*Myiarchus crinitus*	✓	*Sensitive*			
Great gray owl	*Strix nebulosa*		*Sensitive*			
Great horned owl	*Bubo virginianus*	✓	*Secure*			
Hairy woodpecker	*Picoides villosus*	✓	*Secure*			
Hermit thrush	*Catharus guttatus*	✓	*Secure*			
Herring gull	*Larus argentatus*		Secure			

Common Name	Scientific Name	Suitable Habitat Within Project Area	–GSOAWS Status[3]	–COSEWIC Status[4]	SARA Schedule[5]	SARA Status[6]
Hooded merganser	*Lophodytes cucullatus*		Secure			
Horned grebe	*Podiceps auritus*		*Sensitive*	*Special Concern*	*No Schedule*	*No Status*
Horned lark	*Eremophila alpestris*	✓	*Secure*			
House Finch	*Carpodacus mexicanus*	✓	*Secure*			
House sparrow	*Passer domesticus*	✓	*Exotic*			
House wren	*Troglodytes aedon*	□	*Secure*			
Killdeer	*Charadrius vociferus*	✓	*Secure*			
Le Conte's sparrow	*Ammodramus loconteii*	✓	*Secure*			
Least flycatcher	*Empidonax minimus*	✓	*Sensitive*			
Least sandpiper	*Calidris minutilla*		*Secure*			
Lesser scaup	*Aythya affinis*		*Sensitive*			
Lesser yellowlegs	*Tringa flavipes*		*Secure*			
Lincoln's sparrow	*Melospiza lincolnii*	✓	*Secure*			
Loggerhead shrike	*Lanius ludovicianus*		*Sensitive*	*Threatened*	*Schedule 1*	*Threatened*
Long-eared owl	*Asio ostus*		*Secure*			
Magnolia warbler	*Dendroica magnolia*		*Secure*			
Mallard	*Anas platyrhynchos*		*Secure*			
Marbled godwit	*Limosa fedoa*		*Secure*			
Marsh wren	*Cistothorus palustris*		*Secure*			
Merlin	*Falco columbarius*	✓	*Secure*			
Mountain bluebird	*Sialia currucoides*	✓	*Secure*			
Mourning dove	*Zenaida macroura*	✓	*Secure*			
Mourning warbler	*Oporornis Philadelphia*		*Secure*			

Common Name	Scientific Name	Suitable Habitat Within Project Area	–GSOAWS Status[3]	–COSEWIC Status[4]	SARA Schedule[5]	SARA Status[6]
Nelson's sharp-tailed sparrow	*Ammodramus nelsoni*		*Secure*	*Not at Risk*		
Northern flicker	*Colaptes auratus*	✓	*Secure*			
Northern goshawk	*Accipiter gentilis*		*Sensitive*	*Not at Risk*		
Northern harrier	*Circus cyaneus*	✓	*Sensitive*			
Northern hawk owl	*Surnia ulula*		*Sensitive*			
Northern pintail	*Anas acuta*		*Sensitive*			
Northern rough-winged swallow	*Stelgidopteryx serripennis*		*Secure*			
Northern saw-whet owl	*Aegolius acadicus*		*Secure*			
Northern shoveler	*Anas clypeata*		*Secure*			
Northern waterthrush	*Seiurus noveboracensis*		*Secure*			
Olive-sided flycatcher	*Contopus cooperi*		*May be at Risk*	*Threatened*	*Schedule 1*	*Threatened*
Orange-crowned warbler	*Vermivora celata*		*Secure*			
Osprey	*Pandion haliaetus*		*Sensitive*			
Ovenbird	*Seiurus aurocapilla*		*Secure*			
Palm warbler	*Dendroica palmarum*		*Secure*			
Peregrine falcon	*Falco peregrinus*		*At Risk*	*Special Concern*	*Schedule 1*	*Special Concern*
Philadelphia vireo	*Vireo philadelpicus*		*Secure*			
Pied-billed grebe	*Podilymbus podiceps*		*Sensitive*			
Pileated woodpecker	*Dryocopus pileatus*		*Sensitive*			
Pine Siskin	*Carduelis pinus*		*Secure*			
Purple finch	*Carpodacus purpureus*		*Secure*			
Purple martin	*Progne subis*		*Sensitive*			
Red-breasted merganser	*Mergus serrator*		*Secure*			

Common Name	Scientific Name	Suitable Habitat Within Project Area	–GSOAWS Status[3]	–COSEWIC Status[4]	SARA Schedule[5]	SARA Status[6]
Red-breasted nuthatch	*Sitta canadensis*	✓	*Secure*			
Red-eyed vireo	*Vireo olivaceus*		*Secure*			
Redhead	*Aythya americana*		*Secure*			
Red-necked grebe	*Podiceps grisegena*		*Secure*	*Not at Risk*		
Red-tailed hawk	*Buteo jamaicensis*	✓	*Secure*			
Red-winged blackbird	*Agelaius phoeniceus*		*Secure*			
Ring-billed gull	*Larus delawarensis*		*Secure*			
Ring-necked duck	*Aythya collaris*		*Secure*			
Ring-necked pheasant	*Phasianus colchicus*	✓	*Exotic*			
Rock pigeon	*Columba livia*	✓	*Exotic*			
Rose-breasted grosbeak	*Pheucticus ludovicianus*	✓	*Secure*			
Ruby-crowned kinglet	*Regulus calendula*		*Secure*			
Ruby-throated hummingbird	*Archilochus colubris*	✓	*Secure*			
Ruddy duck	*Oxyura jamaicensis*		*Secure*			
Ruffed grouse	*Bonasa umbellus*		*Secure*			
Rusty blackbird	*Euphagus carolinus*		*Sensitive*	*Special Concern*	*Schedule 1*	*Special Concern*
Sandhill crane	*Grus canadensis*		*Sensitive*			
Savannah sparrow	*Passerculus sandwichensis*	✓	*Secure*			
Say's phoebe	*Sayornis saya*	✓	*Secure*			
Sedge wren	*Cistothorus platensis*		*Sensitive*			
Sharp-shinned hawk	*Circus cyabeus*		*Secure*			
Sharp-tailed grouse	*Tympanuchus phasianellus*		*Sensitive*			
Short-billed dowitcher	*Limnodromus griseus*		*Undeter mined*			

Common Name	Scientific Name	Suitable Habitat Within Project Area	–GSOAWS Status[3]	–COSEWIC Status[4]	SARA Schedule[5]	SARA Status[6]
Short-eared owl	*Asio flammeus*	✓	*May Be At Risk*	*Special Concern*	*Schedule 1*	*Special Concern*
Solitary sandpiper	*Tringa solitaria*		*Secure*			
Song sparrow	*Melospiza meodia*	✓	*Secure*			
Sora	*Porzana carolina*		*Sensitive*			
Spotted sandpiper	*Actitis macularius*		*Secure*			
Sprague's pipit	*Anthus spragueii*	✓	*Sensitive*	*Threatened*	*Schedule 1*	*Threatened*
Spruce grouse	*Falcipennis canadensis*		*Secure*			
Swainson's hawk	*Buteo swainsoni*	✓	*Sensitive*			
Swainson's thrush	*Catharus ustulatus*		*Secure*			
Swamp sparrow	*Melospiza georgiana*		*Secure*			
Tennessee warbler	*Vermivora peregrine*		*Secure*			
Three-toed woodpecker	*Picoides dorsalis*		Secure			
Tree swallow	*Tachycineata bicolor*		*Secure*			
Trumpeter swan	*Cygnus buccinator*		*At Risk*	*Not at Risk*		
Upland sandpiper	*Bartramia longicauda*	✓	*Sensitive*			
Veery	*Catharus fuscescens*		*Secure*			
Vesper sparrow	*Pooecetes gramineus*	✓	*Secure*			
Virginia rail	*Rallus limicola*		*Undeter mined*			
Warbling vireo	*Vireo gilvus*		*Secure*			
Western grebe	*Aechmophorus occidentalis*		*Sensitive*	*Special Concern*	*No schedule*	*No Status*
Western meadowlark	*Surnella neglecta*	✓	*Secure*			
Western tanager	*Piranga ludoviciana*		*Sensitive*			

Common Name	Scientific Name	Suitable Habitat Within Project Area	–GSOAWS Status[3]	–COSEWIC Status[4]	SARA Schedule[5]	SARA Status[6]
Western wood-pewee	*Contopus sordidulus*		*Sensitive*			
White-breasted nuthatch	*Sitta carolinensis*		*Secure*			
White-throated sparrow	*Zonotrichia albicollis*		*Secure*			
White-winged crossbill	*Loxia leucoptera*		*Secure*			
White-winged scoter	*Melanitta fusca*		*Sensitive*			
Willet	*Tringa semipalmata*		*Secure*			
Wilson's phalarope	*Phalaropus tricolor*		*Secure*			
Wilson's snipe	*Gallinago delicata*		*Secure*			
Winter wren	*Troglodytes troglodytes*		*Secure*			
Yellow rail	*Coturnicops noveboracensis*		*Undetermined*	*Special Concern*	*Schedule 1*	*Special Concern*
Yellow-bellied flycatcher	*Certhia americana*		*Undetermined*			
Yellow-bellied sapsucker	*Sphyrapicus varius*		*Secure*			
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*		*Secure*			
Yellow-rumped warbler	*Dendroica coronate*		*Secure*			

APPENDIX C - BIRDS COVERED UNDER THE MCBA THAT HAVE RANGES WHICH OVERLAP WITH THE PROJECT AREA

Common Name	Scientific Name	COSEWIC Status	SARA Schedule	SARA Status
Alder flycatcher	*Empidonax alnorum*			
American avocet	*Recurvirostra americana*			
American bittern	*Botaurus lentiginosus*			
American coot	*Fulica americana*	Not at Risk		
American goldfinch	*Carduelis tristis*			
American redstart	*Setophaga ruticilla*			
American robin	*Turdus migratorius*			
American three-toed woodpecker	*Picoides dorsalis*			
American Wigeon	*Anas americana*			
Baltimore oriole	*Icterus galbula*			
Bank swallow	*Riparia riparia*	Threatened	No Schedule	No Status
Barn swallow	*Hirundo rustica*	Threatened	No Schedule	No Status
Barrow's goldeneye	*Bucephala islandica*			
Black tern	*Chlidonias niger*	Not at Risk		
Black-and-white warbler	*Mniotilta varia*			
Black-billed cuckoo	*Coccyzus erthropthalmus*			
Black-billed magpie	*Pica hudsonia*			
Black-capped chickadee	*Poecile atricapillus*			
Black-crowned night-heron	*Nycticorax nycticorax*			
Blackpoll warbler	*Dendroica striata*			
Blue-headed vireo	*Vireo solitaries*			
Blue-winged teal	*Anas discors*			
Bobolink	*Dolichonyx oryzivorus*	Threatened	No Schedule	No Status
Bonaparte's gull	*Larus philadelphia*			
Boreal chickadee	*Poecile hudsonica*			
Brewer's blackbird	*Euphagus cyanocephalus*			
Brown creeper	*Certhia Americana*			
Brown thrasher	*Toxostoma rufum*			
Bufflehead	*Bucephala albeola*			
California gull	*Larus californicus*			
Canada goose	*Branta canadensis*			
Canada warbler	*Wilsonia canadensis*	Threatened	Schedule 1	Threatened

Common Name	Scientific Name	COSEWIC Status	SARA Schedule	SARA Status
Canvasback	*Aythya valisineria*			
Cape may warbler	*Dendroica tigrina*			
Cedar waxwing	*Bombycilla cedrorum*			
Chipping sparrow	*Spizella passerine*			
Cinnamon teal	*Anas cyanoptera*			
Clay-colored sparrow	*Spizella pallida*			
Cliff swallow	*Petrochelidon pyrrhonota*			
Common goldeneye	*Bucephala clangula*			
Common loon	*Gavia immer*	Not at Risk		
Common merganser	*Mergus merganser*			
Common nighthawk	*Chordeiles minor*	Threatened	Schedule 1	Threatened
Common Redpoll	*Carduelis flammea*			
Common tern	*Sterna hirundo*	Not at Risk		
Common yellowthroat	*Geothlypis trichas*			
Connecticut warbler	*Oporornis agilis*			
Dark-eyed junco	*Junco hyemalis*			
Downy woodpecker	*Picoides pubescens*			
Eared grebe	*Podiceps nigricollis*			
Eastern kingbird	*Tyrannus tyrannus*			
Eastern phoebe	*Sayornis phoebe*			
Evening grosbeak	*Coccothraustes vespertinus*			
Forster's tern	*Sterna forsteri*			
Fox sparrow	*Passerella iliaca*			
Franklin's gull	*Larus pipixcan*			
Gadwall	*Anas strepera*			
Golden-crowned kinglet	*Regulus satrapa*			
Gray catbird	*Dumetella carolinensis*			
Gray jay	*Perisoreus canadensis*			
Great blue heron	*Ardea herodias*			
Great crested flycatcher	*Myiarchus crinitus*			
Green-winged teal	*Anas crecca*			
Hairy woodpecker	*Picoides villosus*			
Hermit thrush	*Catharus guttatus*			
Herring gull	*Larus argentatus*			
Hooded merganser	*Lophodytes cucullatus*			
Horned grebe	*Podiceps auritus*	Special Concern	No Schedule	No Status
Horned lark	*Eremophila alpestris*			

Common Name	Scientific Name	COSEWIC Status	SARA Schedule	SARA Status
House Finch	*Carpodacus mexicanus*			
House sparrow	*Passer domesticus*			
House wren	*Troglodytes aedon*			
Killdeer	*Charadrius vociferus*			
Le Conte's sparrow	*Ammodramus loconteii*			
Least flycatcher	*Empidonax minimus*			
Least sandpiper	*Calidris minutilla*			
Lesser scaup	*Aythya affinis*			
Lesser yellowlegs	*Tringa flavipes*			
Lincoln's sparrow	*Melospiza lincolnii*			
Loggerhead shrike	*Lanius ludovicianus*	Threatened	Schedule 1	Threatened
Magnolia warbler	*Dendroica magnolia*			
Mallard	*Anas platyrhynchos*			
Marbled godwit	*Limosa fedoa*			
Marsh wren	*Cistothorus palustris*			
Mountain bluebird	*Sialia currucoides*			
Mourning dove	*Zenaida macroura*			
Mourning warbler	*Oporornis Philadelphia*			
Nelson's sharp-tailed sparrow	*Ammodramus nelsoni*	Not at Risk		
Northern flicker	*Colaptes auratus*			
Northern pintail	*Anas acuta*			
Northern rough-winged swallow	*Stelgidopteryx serripennis*			
Northern shoveler	*Anas clypeata*			
Northern waterthrush	*Seiurus noveboracensis*			
Olive-sided flycatcher	*Contopus cooperi*	Threatened	Schedule 1	Threatened
Orange-crowned warbler	*Vermivora celata*			
Ovenbird	*Seiurus aurocapilla*			
Palm warbler	*Dendroica palmarum*			
Philadelphia vireo	*Vireo philadelpicus*			
Pied-billed grebe	*Podilymbus podiceps*			
Pileated woodpecker	*Dryocopus pileatus*			
Pine Siskin	*Carduelis pinus*			
Purple finch	*Carpodacus purpureus*			
Purple martin	*Progne subis*			
Red-breasted merganser	*Mergus serrator*			
Red-breasted nuthatch	*Sitta canadensis*			
Red-eyed vireo	*Vireo olivaceus*			

Common Name	Scientific Name	COSEWIC Status	SARA Schedule	SARA Status
Redhead	*Aythya americana*			
Red-necked grebe	*Podiceps grisegena*	Not at Risk		
Ring-billed gull	*Larus delawarensis*			
Ring-necked duck	*Aythya collaris*			
Rock pigeon	*Columba livia*			
Rose-breasted grosbeak	*Pheucticus ludovicianus*			
Ruby-crowned kinglet	*Regulus calendula*			
Ruby-throated hummingbird	*Archilochus colubris*			
Ruddy duck	*Oxyura jamaicensis*			
Sandhill crane	*Grus canadensis*			
Savannah sparrow	*Passerculus sandwichensis*			
Say's phoebe	*Sayornis saya*			
Sedge wren	*Cistothorus platensis*			
Short-billed dowitcher	*Limnodromus griseus*			
Solitary sandpiper	*Tringa solitaria*			
Song sparrow	*Melospiza meodia*			
Sora	*Porzana carolina*			
Spotted sandpiper	*Actitis macularius*			
Sprague's pipit	*Anthus spragueii*	Threatened	Schedule 1	Threatened
Swainson's thrush	*Catharus ustulatus*			
Swamp sparrow	*Melospiza georgiana*			
Tennessee warbler	*Vermivora peregrine*			
Three-toed woodpecker	*Picoides dorsalis*			
Tree swallow	*Tachycineata bicolor*			
Trumpeter swan	*Cygnus buccinator*	Not at Risk		
Upland sandpiper	*Bartramia longicauda*			
Veery	*Catharus fuscescens*			
Vesper sparrow	*Pooecetes gramineus*			
Virginia rail	*Rallus limicola*			
Warbling vireo	*Vireo gilvus*			
Western grebe	*Aechmophorus occidentalis*	Special Concern	No schedule	No Status
Western meadowlark	*Surnella neglecta*			
Western tanager	*Piranga ludoviciana*			
Western wood-pewee	*Contopus sordidulus*			
White-breasted nuthatch	*Sitta carolinensis*			

Common Name	Scientific Name	COSEWIC Status	SARA Schedule	SARA Status
White-throated sparrow	*Zonotrichia albicollis*			
White-winged crossbill	*Loxia leucoptera*			
White-winged scoter	*Melanitta fusca*			
Willet	*Tringa semipalmata*			
Wilson's phalarope	*Phalaropus tricolor*			
Wilson's snipe	*Gallinago delicata*			
Winter wren	*Troglodytes troglodytes*			
Yellow rail	*Coturnicops noveboracensis*	Special Concern	Schedule 1	Special Concern
Yellow-bellied flycatcher	*Certhia americana*			
Yellow-bellied sapsucker	*Sphyrapicus varius*			
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*			
Yellow-rumped warbler	*Dendroica coronate*			

APPENDIX D - LIST OF SPECIES COVERED UNDER THE MCBA THAT MAY BE FOUND IN THE PROJECT AREA BASED ON SPECIES HABITAT PREFERENCES AND RANGES

Common Name	Scientific Name	COSEWIC Status	SARA Schedule	SARA Status
Alder flycatcher	*Empidonax alnorum*			
American goldfinch	*Carduelis tristis*			
American robin	*Turdus migratorius*			
Barn swallow	*Hirundo rustica*	*Threatened*	*No Schedule*	*No Status*
Black-capped chickadee	*Poecile atricapillus*			
Bobolink	*Dolichonyx oryzivorus*	*Threatened*	*No Schedule*	*No Status*
Boreal chickadee	*Poecile hudsonica*			
Brown thrasher	*Toxostoma rufum*			
Chipping sparrow	*Spizella passerine*			
Clay-colored sparrow	*Spizella pallida*			
Common nighthawk	*Chordeiles minor*	*Threatened*	*Schedule 1*	*Threatened*
Common Redpoll	*Carduelis flammea*			
Connecticut warbler	*Oporornis agilis*			
Dark-eyed junco	*Junco hyemalis*			
Downy woodpecker	*Picoides pubescens*			
Eastern kingbird	*Tyrannus tyrannus*			
Eastern phoebe	*Sayornis phoebe*			
Gray catbird	*Dumetella carolinensis*			
Great crested flycatcher	*Myiarchus crinitus*			
Hairy woodpecker	*Picoides villosus*			
Hermit thrush	*Catharus guttatus*			
Horned lark	*Eremophila alpestris*			
House Finch	*Carpodacus mexicanus*			
House sparrow	*Passer domesticus*			
House wren	*Troglodytes aedon*			
Least flycatcher	*Empidonax minimus*			
Le Conte’s sparrow	*Ammodramus loconteii*			
Lincoln’s sparrow	*Melospiza lincolnii*			
Mountain bluebird	*Sialia currucoides*			
Mourning dove	*Zenaida macroura*			
Northern flicker	*Colaptes auratus*			
Orange-crowned warbler	*Vermivora celata*			
Rock pigeon	*Columba livia*			
Rose-breasted grosbeak	*Pheucticus ludovicianus*			

Common Name	Scientific Name	COSEWIC Status	SARA Schedule	SARA Status
Ruby-throated hummingbird	*Archilochus colubris*			
Say's phoebe	*Sayornis saya*			
Savannah sparrow	*Passerculus sandwichensis*			
Song sparrow	*Melospiza meodia*			
Sprague's pipit	*Anthus spragueii*	*Threatened*	*Schedule 1*	*Threatened*
Upland sandpiper	*Bartramia longicauda*			
Vesper sparrow	*Pooecetes gramineus*			
Western meadowlark	*Surnella neglecta*			

APPENDIX E - LIST OF FISH SPECIES REPORTED IN THE NORTH SASKATCHEWAN RIVER

Fish Type	Species	Scientific Name	Abbreviation	Special Listing
Sport Fish	Brook trout	*Salvelinus fontinalis*	BKTR	
Sport Fish	Brown trout	*Salmo trutta*	BNTR	
Sport Fish	Bull trout	*Salvelinus confluentus*	BLTR	Threatened (AB), Threatened (COSEWIC)*
Sport Fish	Burbot	*Lota lota*	BURB[0]	
Sport Fish	Cutthroat trout	*Oncorhynchus clarkii*	CTTR	
Sport Fish	Goldeye	*Hiodon alosoides*	GOLD[0]	
Sport Fish	Lake sturgeon	*Acipenser filvescens*	LKST[0]	Threatened (AB), Endangered (COSEWIC)*
Sport Fish	Lake trout	*Salvelinus namaycush*	LKTR	Sensitive (AB)*
Sport Fish	Mooneye	*Hiodon tergisus*	MOON[0]	
Sport Fish	Mountain whitefish	*Prosopium williamsoni*	MNWH[0]	
Sport Fish	Northern pike	*Esox lucius*	NRPK[0]	
Sport Fish	Rainbow trout	*Oncorhynchus mykiss*	RNTR	
Sport Fish	Sauger	*Sander canadensis*	SAUG[0]	Sensitive (AB)*
Sport Fish	Walleye	*Sander vitreus*	WALL[0]	
Sport Fish	Yellow perch	*Perca flavescens*	YLPR	

Fish Type	Species	Scientific Name	Abbreviation	Special Listing
Coarse Fish	Longnose sucker	*Catostomus catostomus*	LNSC[0]	
Coarse Fish	Mountain sucker	*Catostomus platyrhynchus*	MNSC	
Coarse Fish	Quillback	*Carpoides cyprninus*	QUIL[0]	
Coarse Fish	Shorthead redhorse	*Moxostoma macrolepidotum*	SHRD[0]	
Coarse Fish	Silver Redhorse	*Moxostoma anisurum*	SLRD[0]	
Coarse Fish	White sucker	*Catastomus comersonii*	WHSC[0]	
Forage Fish	Brook stickleback	*Culaea inconstans*	BRST[0]	
Forage Fish	Emerald shiner	*Notropus atherinoides*	EMSH[0]	
Forage Fish	Flathead minnow	*Pimephales promelas*	FTMN[0]	
Forage Fish	Finescale dace	*Phoxinus neogaeus*	FNDC	
Forage Fish	Flathead chub	*Platygobio gracilis*	FLCH	
Forage Fish	Iowa darter	*Etheostoma exile*	IWDR	
Forage Fish	Lake chub	*Couesius plumbeus*	LKCH	
Forage Fish	Longnose dace	*Rhinichthys cataractae*	LNDC[0]	

Fish Type	Species	Scientific Name	Abbreviation	Special Listing
Forage Fish	Northern redbelly dace	*Phoxinus eos*	NRDC	Sensitive (AB)*
Forage Fish	Pearl dace	*Margariscus margarita*	PRDC	
Forage Fish	River shiner	*Notropis blennius*	RVSH[0]	
Forage Fish	Slimy sculpin	*Cottus cognatus*	SLSC	
Forage Fish	Spottail shiner	*Notropis hudsonius*	SPSH[0]	
Forage Fish	Trout-perch	*Percopsis omiscomaycus*	TRPR[0]	

[0] Local pressure (5 km radius)

*Species at risk under Species at Risk-Alberta Wildlife Act (AB) and the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).