NAPP ULC

Canadian Environmental Assessment Act Project Description Summary

NAPP Rail Yard

208005-00053 – EN-REP-0004

26 May 2016

CONTENTS

Figures

1. GENERAL INFORMATION AND CONTACTS

1.1 Project Name, Nature and Proposed Location

The Proponent (North American Polypropylene [NAPP] ULC) plans to build, own and operate the NAPP Rail Yard (the Project) in the Alberta Industrial Heartland (AIH), which is directly associated with the adjacent NAPP manufacturing plant.

The NAPP manufacturing plant can produce up to approximately 600,000 metric tons or 600 kilotonnes (kt) of polypropylene per year. The polypropylene pellets will be loaded into rail cars for transport to local and international markets. The Project area will include 30 sidings with approximately 14 kilometers (km) total length of track. The Project will include tracks for hopper car loading, rail car storage of both empty and full cars and a building for rail car loading and associated pneumatic cleaning. Once constructed, the Project site will occupy an area of approximately 11.5 hectares (ha).

The Project will be located on land owned by Williams Canada Propylene ULC (Williams) within the northeast (NE) and southeast (SE) quarters of Section 25, Township 55, Range 22, West of the Fourth Meridian (W4M). Figure 1 is a map of the region showing the Project location.

1.2 Proponent Contact Information

1.2.1 Name and Contact Information of the Proponent

North American Polypropylene ULC (NAPP ULC)

Suite 2400, 525-8 Avenue SW

Calgary, Alberta

T2P 1G1

1.2.2 Primary Representative for the Project Description

Mr. Thomas B. Stengel, Executive Project Director

NAPP ULC

Email: thomas.stengel@northamericanpp.ca

Office Phone: +1 403 537 4914

1.3 Consultation Summary

1.3.1 Public Consultation Program

NAPP undertook a comprehensive stakeholder consultation program that included consultation with the public, government agencies, municipalities, industries and regional associations. Consultation activities for the Project began in September 2015 and will be ongoing for the life of the Project.

A thorough and documented community and stakeholder consultation strategy and plan was designed and implemented in a manner so as to aid NAPP in improving their understanding of community and stakeholder issues and concerns; in identifying options for their resolution and in making future choices in the design of the Project to mitigate potential adverse effects.

The following participants were identified for inclusion in the consultation plan:

- Project Notification
  - All occupants, residents and landowners within a 2 km site boundary; and
  - Other interested parties including government agencies, municipalities and regional associations
- Personal Consultation
  - All occupants, residents and landowners within an 800 meter (m) site boundary

Non-Project specific environmental concerns were raised by one local landowner (non-resident) during the course of the public consultation process to date. The concerns are related to:

- Emissions associated with nitrogen dioxide (NO_2), sulphur dioxide (SO_2), carbon dioxide (CO_2);
- Particulate matter during the operations phase; and
- Noise during the construction and operations phase.

NAPP is taking a proactive approach to address public and regulatory concerns. It is important to note that few concerns with respect to the Project have been received. The concerns recorded are being carefully considered by NAPP and will be addressed and incorporated into the planning process. NAPP is actively looking to reduce water use, dust emissions and greenhouse gases (GHGs) in consideration for the public's comments to date. NAPP will provide Project updates on significant milestone events such as successful regulatory approval, completion of ground clearing, grading and grubbing or construction progress, to all those occupants, residents and landowners within the 2 km site boundary and to other interested parties including government agencies, municipalities and regional associations.

1.3.2 Aboriginal Consultation Program

NAPP has willingly accepted the opportunity to develop and implement an Aboriginal Consultation Program based on the Canadian Environmental Assessment Agency's (CEAA's) recommendation. To demonstrate good faith, NAPP will inform all proximal 21 First Nations and the six Métis Organizations that NAPP identified and CEAA confirmed, which include the following:

- Alexis Nakota Sioux Nation
- Paul First Nation
- Beaver Lake Cree Nation
- Alexander First Nation
- Enoch Cree Nation
- Whitefish Lake #128 First Nation

- Saddle Lake Cree Nation
- Ermineskin Cree Nation
- Montana First Nation
- Siksika Nation
- Stoney (Bearspaw) Band
- Stoney (Wesley) Band
- Chipewyan Prairie Dene First Nation
- Foothills Ojibway First Nation
- Kikino Métis Settlement
- Métis Nation of Alberta – Region 2
- Gunn Métis Local #55
- Louis Bull Tribe
- Samson Cree Nation
- Blood Tribe
- Piikani Nation
- Stoney (Chiniki) Band
- TsuuT'ina Nation
- Fort McMurray #468 First Nation
- Buffalo Lake Métis Settlement
- Métis Nation of Alberta – Region 1
- Métis Nation of Alberta – Region 4

NAPP has sent by Canada Post registered mail, a cover letter and information package with Project specific details to the 27 identified Aboriginal groups, to inform as well as to provide them with an opportunity to voice their issues or concerns with the proposed project.

After five Government of Canada business days, NAPP will follow up by telephone to confirm that the information package was received by the appropriate contact and if any site-specific issues or concerns have been identified.

At the time of submission of this Project Description, no comments or concerns have been expressed by the Aboriginal groups identified for engagement. In order to understand any potential concerns, all comments or concerns received in response to the notification package will be logged by NAPP and follow-up consultation will be completed as required.

1.4 Environmental Assessment and Regulatory Requirements

1.4.1 Municipal Jurisdiction

The Project will be located in Strathcona County, where the following regional initiatives apply:

- Alberta Environment and Sustainable Resource Development (ESRD) Cumulative Effects Management System (ESRD 2015a);
  - Water Management Framework for the Industrial Heartland and Capital Region (ESRD 2008);
  - Capital Region Air Quality Management Framework (ESRD 2012); and

- Water Management Framework for the Industrial Heartland and Capital Region - Effluent Characterization Program (ESRD 2015b).

- Strathcona County Management Plans:
  - AIH Area Structure Plan Bylaw and Amendment (Strathcona County 2001);
  - Municipal Development Plan Bylaw (Strathcona County 2007);
  - Capital Region Land Use Plan (Capital Region Board 2009); and
  - Land Use Bylaw (Strathcona County 2015).
- NCIA:
  - Regional Noise Management Plan (RNMP) (NCIA 2014); and
  - Regional Groundwater Monitoring Framework (NCIA 2015).

As required, NAPP will strive to incorporate these regional initiatives in their planning, design, construction and operations phases of the Project.

Project Development Permit

Municipal requirements for industrial rail yards are addressed as part of the Development Permit Application process. NAPP has been in regular contact with Strathcona County regarding the requirements of the Development Permit Application and intends to submit the application by June 1, 2016.

1.4.2 Provincial Jurisdiction

Pursuant to Schedule 1 of the Alberta *Environmental Protection and Enhancement Act* (EPEA) *Environmental Assessment (Mandatory and Exempted Activities) Regulation* (Government of Alberta 1993), the development of an industrial rail yard is not considered an activity for which an Environmental Impact Assessment (EIA) must be conducted prior to receiving approval from Alberta Environment and Parks (AEP). Therefore, no specific operating “Approval” or “Registration” for the NAPP Rail Yard is required under EPEA.

The Project is described in the Industrial Approval Application (IAA) that was submitted to AEP on March 28, 2016 for the NAPP manufacturing plant which requires an operating industrial Approval under EPEA.

1.4.3 Current Status

No licences, permits or approvals related to the NAPP Rail Yard have been issued to date. The following applications have been or will be submitted for the various licences and authorizations that will be required to operate the NAPP Rail Yard and associated NAPP manufacturing plant:

- AEP – IAA under the EPEA (submitted March 2016);
- AEP – *Water Act* Approval, for water use licence for water coming from a third party (submitted by third party on January 29, 2016);
- Alberta Culture – *Historical Resources Act* Clearance (submitted March 28, 2015);
- Alberta Transportation - Operating Approval for the industrial rail yard (notice to construct submitted May 2016);
- CEAA - Project Description (this submission);
- Strathcona County - Development Permit Application (Land Use Bylaw 6-2015) (to be submitted May 2016);
- Strathcona County - Building Permit Application (Land Use Bylaw 6-2015) (to be submitted once Development Permit is granted);
- Canadian Pacific Railways – Crossing Agreement (to be submitted by a third party); and
- Altalink – Crossing Agreement (to be submitted by a third party).

Electrical power will be provided to the Project by the ATCO Power (ATCO) Strathcona Cogeneration Plant, also located on Williams-owned land, adjacent to the Project. Water will be provided by a third party. All permitting requirements related to connecting to the Alberta Interconnected Electric System (AIES) and the natural gas transmission pipeline system will be completed by ATCO and other designates under separate cover.

1.5 Regional Environmental Study

There are no Regional Environmental Studies as defined under the *Canadian Environmental Assessment Act* 2012 that apply to the region in which the Project is located.

In 2007, the Government of Alberta adopted the Cumulative Effects Management System (ESRD 2015a). The Cumulative Effects Management System provides a comprehensive integrated and legislated system to protect water, air, land and biodiversity in Alberta (ESRD 2015a). While the Cumulative Effects Management System applies to all of Alberta, the AIH is identified as a key area for managing cumulative environmental effects because of industrial and municipal development.

Since the adoption of the Cumulative Effects Management System, three frameworks were developed for the AIH that are applicable to the Project:

- the Water Management Framework for the Industrial Heartland (ESRD 2008);
- the Capital Region Air Quality Management Framework (ESRD 2012); and
- the Water Management Framework for the Industrial Heartland and Capital Region - Effluent Characterization Program (ESRD 2015b).

Under the *Alberta Land Stewardship Act*, the North Saskatchewan Regional Plan (NSRP) is under development for the North Saskatchewan Region (ESRD 2015c). The first phase of consultation for the plan has been completed, and the Regional Advisory Council is preparing its recommendations. The NSRP has not yet been finalized and implemented.

In the event that the NSRP is completed in advance of the application for Approval under EPEA, NAPP will ensure that the Project is constructed and operated in accordance with applicable constraints, conditions, targets or thresholds established within the NSRP, as required according to the conditions of Approval for the Project, to be issued by AEP.

2. PROJECT INFORMATION

2.1 Project Context and Objectives

NAPP is proposing to build the Project as shown on Figures 1 and 2 on land owned by Williams. The Project will be independently owned and operated by NAPP. The objective of the Project is to facilitate a product shipment service to the NAPP manufacturing plant. The NAPP manufacturing plant is not listed in the *Regulations Designating Physical Activities* (CEAA 2012a) but is subject to the Provincial EPEA IAA process.

The NAPP manufacturing plant, located east (E) -adjacent to the Rail Loading Area in the shaded area shown on Figure 3A, has the annual operating potential to produce up to 600 kt of polypropylene and is expected to produce an initial capacity of approximately 450 kt per year (kt/a). The manufactured polypropylene will be processed into small pellets, which will be gravity-loaded into rail cars for transport to local and international markets. Rail car loading will be completed in the Rail Loading Area (Area 2, Figures 3A and 3C). The end product being handled is clean polypropylene solid which is a commercial product and a non-hazardous material.

The Project will include 30 sidings with approximately 14 km total length of track. The NAPP Rail Yard (Area 1, Figures 3A and 3B) will handle both empty and full rail cars. In addition, the Project will include tracks for hopper car loading, rail car storage of both empty and full cars and a building for rail car loading and vacuum air cleaning of the rail cars. No water will be used to clean the rail cars. Once constructed, the Project will occupy an area of approximately 11.5 ha.

The Project will accommodate the storage of up to two weeks of production, with expected loading of approximately 25 rail cars per day. NAPP is currently exploring the use of various sizes of rail cars. As such, the anticipated number of rail cars to be loaded per day may change. The Project will only receive empty hopper cars, and only manufactured polypropylene in pellet form will be shipped out by rail.

The NAPP Rail Yard operations will be undertaken by suitably qualified third party under the control of NAPP management. Removal of full cars from the site and delivery of empty cars to the site will be completed by Canadian National Rail (CNR) and/or Canadian Pacific Rail (CPR). Connection to the rail operators is currently being negotiated with both CNR and CPR, and one or both of these rail operators will be contracted to deliver full rail cars to market, with possible interchange to other lines, depending on the destination. The likely points of rail car entry/exit are indicated on Figure 3A.

The NAPP Rail Yard and Rail Loading facilities will be supported by the administrative area (Area 3, Figures 3A and 3D).

2.2 Designated Physical Activities

Canadian Environmental Assessment Act, 2012 defines the *Regulations Designating Physical Activities* (CEAA 2012b). Pursuant to Paragraph 25(b) of the *Canadian Environmental Assessment Act*, 2012 (CEAA 2012b) *Regulations Designating Physical Activities*:

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".

Consequently, the proposed Project is considered to be a Designated Project.

2.3 Physical Works: Purpose, Size and Capacity

2.3.1 Physical Works

The Project will consist of approximately 14 km of track with 30 sidings, and associated buildings, equipment and utilities. The main components of the Project include:

- Area 1 – the NAPP Rail Yard including maintenance area (Figure 3B);
- Area 2 - a hopper car blending/loading building (including localized vacuum cleaning of rail cars) (Figure 3C); and
- Area 3 - a rail office within the planned NAPP administrative building and parking lot (Figure 3D).

A brief description of the Project's major components is included below. The site layout is shown on Figure 3A. Other, minor, components of the Project include:

- expansion of on-site firewater piping;
- connection to existing on-site power lines;
- connection to off-site rail lines; and
- surface water runoff control.

Area 1 - NAPP Rail Yard

The storage yard provides a total of two weeks of rail car inventory: one week of empty and one week of full rail cars. The storage yard, which is approximately 7.1 ha in area, will hold up to 250 hopper cars, each approximately 22 m long. It is expected that approximately up to 14,000 rail cars will travel in and out of the NAPP Rail Yard per year. This number can vary daily, weekly and monthly based on the overall output of the plant. NAPP is currently evaluating the optimum size of rail cars. The number and size of rail cars quoted may change somewhat, but the overall size of the NAPP Rail Yard and number/length of rail sidings will not change.

The rail cars are covered hopper car type rail cars. Each rail car will have a maximum capacity of approximately 90 tonnes (t) of polypropylene. Hopper cars will be moved between the storage yard and

the rail car blending/loading area using a locomotive. It is expected that there will be one locomotive operating on site, and a track mobile rail car mover for when the locomotive is out of service.

Locomotive maintenance will be conducted in a designated maintenance area, which will also be equipped with secondary containment. Locomotive fuelling will be undertaken by a fuel truck that will come to site. No fuels will be stored on site.

Area 2 - Rail Loading Area

The rail car loading area will be approximately 135 m long by 15 m wide and able to accommodate 88 hopper cars. The blending/loading area covers an area of approximately 3.1 ha. It will include two tracks with three loading stations each, for a total of six loading stations. Each rail car loading station will be equipped with a dedicated vacuum system to remove streamers and fines that may be generated during polypropylene pellet blending and transfer. The streamers and fines are a saleable product stream, which will be picked up by a qualified recycling company. There will be four or six independently functioning rail scales. A vacuum cleaner system will be incorporated into the design of the loading area and will be operated during cleaning and loading activities.

Area 3 - Administrative Area

The administrative building will host rail operations staff. Rail operations staff will also be located within the NAPP Rail Yard itself and in the Rail Car Blending/Loading Area. The NAPP Rail Yard facilities will be sized to accommodate approximately 15 people for the NAPP Rail Yard, rail car loading and rail car cleaning operations of the Project. Staff will work in shifts. The administrative building will include management offices, a break room and washroom facilities. Potable water for the building will be trucked in, and sanitary waste will be trucked out for disposal at an approved facility. The administrative area will also include the Chemical Storage Building for the NAPP manufacturing plant which will include small quantities of locomotive maintenance supplies (e.g., oils and lubricants).

Surface and Storm Water Management

Surface and storm water will be managed by Williams for all Williams-owned land, including the Project area. A permanent storm drainage water retention system has been designed by Williams to collect and retain the storm water flows during the construction and operation phases based on the most conservative 1:100 year 24 hour storm event.

Key features of the surface/storm water management system for the Project will include:

- a storm water pond with capacity for a 1:100 year 24 hour storm event;
- grading of the NAPP Rail Yard area to ensure effective collection and control of storm water runoff;
- construction of a system of ditches and culverts that will drain to the Admin/Rail Yard storm water pond (to be operated by Williams);

- open roadside ditches lined with geotextile and high density polyethylene (HDPE) geomembrane to contain runoff;
- turf reinforcement mats installed across ditches to cover the bottom and slopes to provide immediate erosion protection and long-term side armoring;
- any culverts designed to have 3H:1V sloped mitred ends with rip-rap treatments; and
- water stored in the Admin/Rail Yard pond will be tested to meet approved discharge limits prior to being released through an outfall into the North Saskatchewan River (NSR).

2.3.2 Anticipated Size and Production Capacity

There will not be any production undertaken in the NAPP Rail Yard. The NAPP Rail Yard itself consists of approximately 14 km of track with 30 sidings. The total Project footprint is expected to be approximately 11.5 ha.

2.4 Activities Description

Public Consultation and Engagement

The consultation and engagement program commenced in September 2015 and is still ongoing. The progress to date is discussed in Section 1.3.

Construction

Topsoil and subsoil will be stripped, salvaged and stockpiled prior to site grading, placement of fill, and/or site development. Soil will be stockpiled in designated topsoil and subsoil stockpiles located off site.

The site will be fenced off. Roadways and railways into the site will be constructed to connect to existing transportation infrastructure. Site construction infrastructure (e.g., trailers, electricity, natural gas services) will be installed. Construction laydown, storage and fabrication areas will be established.

Grading activities within the Project footprint will include collecting/placing fill with earth-moving equipment to build the subgrade, followed by compacting the subgrade. Once the subgrade has been constructed, the ties and steel rails will be laid by qualified contractor. Ballast will then be dumped in place. Specialized rail construction equipment will tamp the ties and steel rails so that the ballast settles into place.

Final grading will include contouring drainage ditches such that outlets channel water into the storm water pond.

The foundations for the rail car cleaning/loading building will be excavated, and concrete poured. Structural steel will then be erected on the foundations. Some modularization and preassembly work will occur where practical to speed building erection. Roof cladding and wall cladding will then be

installed to enclose the building while equipment installation continues indoors. Once the building is enclosed, the building can be heated to facilitate construction in cold weather.

Temporary structures will be required during construction, including office space, equipment storage, workforce muster points, and for various other functions. The temporary structures will be similar to those typically used on large construction sites, such as integrated workforce trailer systems. All temporary structures will be removed from the site once construction is complete.

Commissioning

Prior to Project operation, testing and commissioning of various pieces of equipment and systems will occur. It is expected that the testing and commissioning phase of the Project will span the final three to six months of construction. The Project will then be ready for commercial operation.

Operation

The NAPP Rail Yard loading area is expected to operate continuously, with new rail cars being positioned once or twice daily. It is anticipated that full rail cars will be stored on-site and taken off-site as required, with replacement (empty) cars brought on-site daily to replace them.

Polypropylene will enter the rail car loading area from the NAPP manufacturing plant. The rail car loading area will include two tracks with three loading stations along each, with a total of six loading stations. Each rail car loading station will be equipped with a dedicated vacuum system to remove streamers and fines that may be produced during polypropylene pellet transfer. The vacuum cleaner system will be operated during loading activities, approximately 16 to 24 hours a day, on production days. There will also be four to six rail car loading scales to measure the loads.

Decommissioning

The proposed reclamation activities for the entire NAPP site are outlined in the IAA which was submitted to AEP on March 28, 2016. During site development, topsoil and subsoil from the project footprint will be salvaged and stockpiled for future site reclamation. Prior to the end of life of the Project, NAPP will submit a detailed decommissioning and reclamation plan to AEP for review and approval. The NAPP EPEA Approval will then be amended to include the conditions of the proposed and approved program.

Project decommissioning will include removing all major equipment and the associated tracks, buildings, piping and electrical systems from the site. Depending on the condition at the time of decommissioning, the track materials will be sold for reuse or recycling. Following Project decommissioning, the Project footprint (i.e., the area occupied by buildings and infrastructure during Project operation) will be regraded to promote positive drainage. The reclamation program will include the replacement of the salvaged topsoil and subsoil and re-vegetation to re-establish the pre-disturbance agricultural land use capability. It is anticipated that the decommissioning program will be completed within a period of six months.

2.5 Waste Management

2.5.1 Atmospheric Emissions

During the life of the Project, emissions of criteria air contaminants (CACs) and GHGs are expected. The CACs include hydrocarbon (HC), nitrogen oxides (NO_X), SO_2, carbon monoxide (CO) and suspended particulates in various sizes such as total suspended particulates (TSP), particulates with a diameter less than 10 microns (PM_{10}) and particulates with a diameter less than 2.5 microns ($PM_{2.5}$). GHG emissions are typically reported as carbon dioxide equivalent (CO_2e).

Project Construction and Decommissioning

There are two primary sources of atmospheric emissions associated with Project construction: fugitive dust and mobile equipment exhaust. On-site vehicular traffic and earthwork activities will be the primary sources of dust during construction. Emissions may also be expected from the intermittent use of portable diesel generators during construction. The key contaminants from mobile equipment exhaust are SO_2, NO_X, CO and $PM_{2.5}$.

Air contaminants will be emitted mainly from fuel combustion through the tailpipes of equipment during the construction and closure phases. Fugitive dust emissions will also be emitted from the disturbance of material. During the construction and closure phases, temporary emissions are expected from equipment such as excavators, dozers, crane, etc. Emission sources and associated impacts are only expected in the close vicinity of the NAPP Rail Yard.

Based on prior experience, activities expected to construct the project may include land clearing, grading track work, building structures such as office trailers and security fences. Diesel equipment such as graders, trackers, and bulldozers are expected during the construction phase. Various types of trucks are also expected to be used. The construction phase is anticipated to extend over a period of 8 months (10 hours/day and 5 days/week) with the exception of trucks which will be operating for 3 months only. Environment Canada's 2016 guidance on GHGs for fuel consumption were used to estimate the total amount of emissions. The total amount of GHG emissions during the construction phase is estimated to be approximately 4,642 t of CO_2e.

Project Operations

During Project operations, atmospheric emissions are expected to include locomotive exhaust and particulate matter associated with loading or cleaning of hopper cars. Each rail car loading station will be equipped with a dedicated vacuum system to remove streamers and fines that may be produced during polypropylene pellet blending and transfer and housed within the rail loading building. Diesel combustion in the locomotives will result in emissions of SO_2, NO_X, CO, HC and particulate matter.

During the operation phase, the main source of emissions is the combustion of diesel fuel in the locomotives. One locomotive and a second spare locomotive or track mobile rail car will be available when the locomotives are out of service. There will be continuous operation of one locomotive

(approximately 20 hours/day) and the spare (locomotive or track mobile rail car) in partial operation (approximately 8 hours/day). Each locomotive is 1,500 horsepower (HP) and is expected to operate for 330 days/year. With an expected fuel consumption of 26.5 liters/hour (7 gallons/hour) of diesel, emissions for CACs and GHGs can be estimated. Since it is not known at this stage what tier of locomotives will be used, the estimation method described by Railway Association of Canada (RAC) cannot be used. The RAC's estimation methods were based on the United States (US) Environmental Protection Agency (EPA) emission factor; therefore, predicted future emission factors for 2016 published by US EPA based on the average fleet of the year were used at this early stage of the Project. The preliminary expected amount of CACs and GHGs during the operation phase is a total of 661 t of CO_2e.

In Alberta, GHG emissions are considered negligible if the total direct emissions from all sources at a facility are less than 100 t CO_2e (ESRD 2014). The specified gas reporting threshold for Alberta is 50,000 t of CO_2e (ESRD 2014). The Federal reporting threshold for Environment Canada is also 50,000 t of CO_2e (Environment Canada 2015). Although is the estimated GHG emissions are not considered negligible, the emissions are very low and not expected to meet the reporting threshold.

2.5.2 Liquid Discharges

The liquid discharges associated with the Project will primarily consist of surface water runoff, which will be contained in the Williams owned/operated Admin/Rail Area storm water pond. The storm water pond will be operated by Williams in accordance with their EPEA Approval No. 341558-00-00, as amended. The water collected in the storm water pond will be tested and released via a storm water outfall owned by Williams to the NSR. The operation of the storm water outfall will also be governed by Williams' EPEA Approval No. 341558-00-00, as amended. A series of "over/under" weirs will be installed to ensure removal of any floating solids prior to discharge. The storm water pond will be tested by Williams in compliance with its EPEA Approval prior to discharge. If the storm water contents do not meet the EPEA Approval limits, then the water will be tested again if there is sufficient capacity to warrant a settling period. If immediate discharge is required, the water will be removed from site by a licensed disposal contractor. There is no on-site water treatment planned for storm water runoff.

Other liquid discharges generated by the Project will include used oil and other solvents and domestic sewage. Both of these waste streams will be removed from site by qualified disposal contractors.

2.5.3 Solid Wastes

The Project will generate both recyclable and non-recyclable solid waste including polypropylene pellets, domestic waste, metal and recyclables, oil filters, dust and batteries. Recyclable material will be separated into containers and removed from the Project site for recycling by a qualified carrier. Non-recyclable waste will be collected on-site and then sent off-site for disposal through a qualified carrier.

2.6 Project Phases and Schedule

Project activities will include the construction, commissioning, operation and decommissioning of the NAPP Rail Yard and ancillary facilities. The Project will have a design life of approximately 35 years, after which the Project could be decommissioned. The anticipated project schedule is as follows:

- Consultation and Engagement: September 2015 to present (ongoing);
- Construction: 2017 to 2019 (pending);
- Commissioning: 2019 to 2020 (pending);
- Operation: start 2020 (pending); and
- Decommissioning: begin approximately 2053 (pending).

3. PROJECT LOCATION

The Project will be located within the NE and SE quarter sections of 25-55-22 W4M. This land is privately owned by Williams (Land Title Certificate 142 046 429) and will be leased to NAPP for the lifetime of the Project.

The Project is a linear site with latitudinal and longitudinal co-ordinates as follows:

- NE limit - N53° 47' 16.80" and W113° 07' 27.79"; and
- Southwest (SW) limit - N53° 46' 32.63" and W113° 08' 10.01".

Figure 2 shows the Project location relative to occupied residences, environmentally sensitive areas, watercourses, waterbodies, federal lands and transportation infrastructure. Figure 4 shows the Project location relative to local infrastructure. Figure 5 shows the Project location relative to Aboriginal communities.

There are two currently occupied permanent singular residences (private farmland) within 1.5 km of the Project site (Figure 2). The closest residence is located just north (N) of the site as shown on Figure 2.

Through discussions with CEAA, NAPP has reviewed the proximal Aboriginal territories. The Project is located within Treaty 6. Although NAPP does not have specific information regarding the traditional territories of the First Nations and Métis Communities in proximity to the project, NAPP recognizes and understands that all First Nations who are signatories to Treaty 6 may practice their Treaty rights anywhere within the Treaty area. From previous experience, some First Nations who are signatories to Treaty 7 and Treaty 8 may assert that their traditional territories include the project location. The nearest First Nation Reserves are the Alexander First Nation (Treaty 6) on Indian Reserves 134, 134A and 134B (located west [W] of Morinville, Alberta) located approximately 55 km W of the Project, and the Enoch Cree Nation (Treaty 6) located approximately 53 km SW of the Project (Figure 5). The Gunn Métis Local #55 is approximately 79 km NE of the Project.

Based on discussions with the previous landowners, it has been determined that the Williams-owned land was homesteaded in the late 1800s and was continuously farmed since that time until it was acquired by Williams. As such, no traditional use of the land by Aboriginal peoples has been noted.

The closest Federal lands are Elk Island National Park, located 20 km SE of the Project and Canadian Forces Base Edmonton, located 20 km W of the Project (Figure 2).

The Designated Project will not be located on federal land and there is no federal land within approximately 20 km of the Project site.

4. FEDERAL INVOLVEMENT

No federal authority will be providing any financial support for the Project.

No federal lands will be required for the Project.

There are no federal legislative or regulatory requirements (including any federal license or permit) that are applicable to the Project. The only purported Federal Regulatory Requirement is in relation to the *Canadian Environmental Assessment Act* 2012 reporting requirements herein.

5. ENVIRONMENTAL SETTING

5.1 Vegetation

The Project site is situated within the Central Parkland and Dry Mixedwood Natural Subregions. The Project site and surrounding landscape are dominated by agricultural land and forested patches bordering the NSR. The Project site was cleared of vegetation in 2015 as part of the Williams Alberta Propane Dehydrogenation (PDH) Project development activities. Prior to clearance, the Project site was primarily tame pasture with patches of trembling aspen (*Populus tremuloides*) and balsam poplar (*Populus balsamifera*), and small wetlands surrounded by Canada thistle (*Cirsium arvense*) and willow species (*Salix* sp.).

Provincially and federally listed species occurrences were reviewed, as applicable for the Project site. An Alberta Conservation Information Management System (ACIMS) database search was completed on November 23, 2015 (AEP 2015) to help determine the potential for sensitive element occurrences known to occur within 3 km of the Project site. The search resulted in no sensitive element occurrences, and no sensitive ecological communities within 3 km of the Project site. In addition, a search of the ACIMS database, focused on section 25-55-22 W4M, did not identify any sensitive species.

Baseline vegetation field assessments were completed in 2013 prior to site clearance. No federally or provincially listed species of concern were observed during the vegetation surveys at the Project site.

A wetland assessment was conducted on the Williams-owned land in 2013. Four wetlands were noted within the assessment area. Williams received *Water Act* Approval No. 361345-00-00 to remove all the wetlands on site, and has paid Ducks Unlimited to provide habitat compensation for their removal.

5.2 Wildlife and Habitat

A query of the Fish and Wildlife Management Information System (FWMIS) (ESRD 2015d) for historical wildlife observations within 3 km of the Project footprint was conducted on November 23, 2015. Results of the query returned historical records for seventeen species. The Sprague's pipit (*Anthus spragueii*) and the North American badger (*Taxidea taxus*) are federally listed as Threatened and Special Concern respectively (Committee on the Status of Endangered Wildlife in Canada [COSEWIC] 2015). The peregrine falcon (*Falco peregrinus*) is provincially listed as At Risk (Government of Alberta 2010) and federally listed as Special Concern (COSEWIC 2015). The Canadian toad (*Anaxyrus hemiophrys*) is listed provincially as May be at Risk (Government of Alberta 2010).

In addition, a review of provincial and federal status reports, distribution maps, habitat requirements, and aerial imagery (Government of Alberta 2010; COSEWIC 2015) revealed seven species at risk (federally listed as: Endangered, Threatened or Special Concern or provincially listed as: May be at Risk or At Risk) with potential to occur within or adjacent to the Project footprint. These include the bank swallow (*Riparia riparia*), common nighthawk (*Chordeiles minor*), short-eared owl (*Asio flammeus*), little brown myotis (*Myotis lucifugus*), long-tailed weasel (*Mustela frenata*), North American

badger (*Taxidea taxus*), and northern myotis (*Myotis septentrionalis*). The short-eared owl and North American badger are federally listed as Special Concern, the bank swallow and common nighthawk are federally listed as Threatened, the little brown myotis and northern myotis are federally listed as Endangered (COSEWIC 2015), and the long-tailed weasel is provincially listed as May be at Risk (Government of Alberta 2010).

In addition to the noted desktop reviews of historical and potential wildlife occurrences, wildlife field surveys were conducted at the Project site in 2013. During the wildlife sign survey, 18 wildlife species were observed or detected at the Site. Two species of conservation concern were heard: least flycatcher (*Empidonax minimus*) and sora rail (*Porzana Carolina*), both provincially listed as Sensitive (Government of Alberta 2010). Other species observed or detected included two amphibian species (Boreal Chorus Frog [*Pseudacris maculata*] and Wood Frog [*Lithobates sylvatica*]), deer (*Odocoileus* sp.), moose (*Alces alces*), red-tailed hawk (*Buteo jamaicensis*), American robin (*Turdus migratorius*), woodpeckers (*Picoides* spp.), five species of sparrow, and three warbler species. No owl nests were located during the visual search and no owls were observed or detected during the call-playback survey.

Overall, the original surrounding vegetation provided limited foraging, security, breeding, and thermal habitat for wildlife, particularly ground-nesting birds and small mammals. However, the Project footprint was cleared of vegetation in 2015 and is no longer natural. Given previous site use as agricultural and the current condition, this habitat is of low quality.

Although there have been historical records for some at-risk species, given their habitat requirements and the current conditions, it is unlikely Sprague's pipits, peregrine falcons, and Canadian toads occupy the Site. Sprague's pipits are strongly associated with native prairie in Alberta, and are rarely associated with cultivated land and introduced, pasture vegetation species (Prescott 1997). Canadian toads use a wide variety of breeding habitats including natural ponds, borrow pits, streams, and lake margins, but are most often found near rivers and lakes with stable water levels and gradually emerging shores with mud flats (Hamilton et al. 1998). The present lack of wetlands and suitable breeding habitat likely precludes this species from the Project footprint. Peregrine falcons typically nest on cliffs close to riparian or wetland habitats, especially near major river systems such as the NSR. Buildings and other man-made structures are also often chosen as nesting sites (Rowell and Stepnisky 1997). Given the lack of cliffs and buildings within the Project footprint, it is unlikely that this species utilizes the Site for nesting, though individuals could nest along the NSR.

North American badgers have had historical occurrences near the Project site. They are most often found in treeless habitats with an available food source such as Richardson's ground squirrels (*Urocitellus richardsonii*) (Scobie 2002). They have been found to roam in a variety of habitats in Alberta, including pastures, in search for prey (Scobie 2002). Similarly, long-tailed weasels generally inhabit grasslands, parklands, and open coniferous forests (Smith 1993). Considering badgers have a historical occurrence near the Project footprint, and that badgers and weasels use open areas for foraging and denning, it is possible these species use the Project footprint. However, badgers are nomadic (Messick and Hornocker 1981) and their (and likely to some extent, weasel) occurrence is

largely driven by prey availability (Hoodicoff 2006). Cleared vegetation is likely to have reduced foraging opportunities. As such, it is unlikely these species will occur with any permanency in the Project footprint.

Common nighthawks and short-eared owls were identified as having potential to utilize areas within the Project footprint. Common nighthawks nest and forage in open, cleared areas such as pastures and roads; similarly, short-eared owls, use a wide variety of open habitats, including old pastures and agricultural fields for nesting and foraging (COSEWIC 2008; 2011). Given their requirements and the available habitat, it is possible common nighthawks could nest and forage within the current Project footprint. The likelihood of short-eared owls nesting is low given the lack of abundant vegetation cover; however it is possible this species could use the Site for foraging.

Little brown myotis and northern myotis summer roosting sites include crevasses, cavities, and under bark of mature deciduous or coniferous forest trees (COSEWIC 2013). Roosting trees are usually tall, large-diameter snags in the early to middle stages of decay. Individuals leave the roost in the evening and forage over nearby water, along waterways, and near forest edges for flying insects (COSEWIC 2013). Adjacent forest patches and banks of the NSR could provide roosting and foraging habitat.

The Williams-owned land is also located within a Key Wildlife and Biodiversity Zone (KWBZ), which extends along the riparian area of the NSR (Figure 2). KWBZs are areas that have been identified as important ungulate winter habitat and that have high potential for biodiversity. They are often located along major river valleys. To maintain areas of high biodiversity and productive ungulate habitat, ESRD developed recommended land use guidelines for KWBZ (ESRD 2015e). These guidelines outline strategies to protect vegetation from clearing by minimizing industrial activity, minimize activity during winter months to avoid displacing wildlife, reduce or prevent new access, and follow general timing restrictions between January 15 and April 30. Presently, recommended land use guidelines for KWBZ only apply to crown land. Given that Williams has freehold ownership of the Project footprint and is leasing the Site to NAPP, the KWBZ guidelines are not required though efforts will be made to consider them in construction where possible. In consultation with Strathcona County, NAPP and Williams have committed to no new disturbance of the existing forested area along the NSR. An existing cleared right-of-way (owned by a third party) will be used to house the proposed storm water outfall structure to the NSR. Where possible, construction activities in proximity to the forested area will be conducted outside of the January 15 to April 30 timing restriction. Any proximal construction activities completed within the timing restriction period will be conducted following appropriate area assessment (i.e. wildlife surveys) and receipt of regulatory approval.

5.3 Soils

From 2013 to 2015, baseline soil surveys and environmental assessments were completed to identify the existing site characteristics. The soil surveys identified Peace Hills, Mundare, Ukalta and Primula soil series at the Site. These soils were predominantly Orthic Black Chernozems with some inclusion of Eluviated Eutric Brunisols. The soils developed on low relief terrain with a level to slightly undulating topography. Soil texture was generally coarse in both topsoil and subsoil layers. All soils were rated as

having a high risk of wind erosion due to the coarse soil textures, and low risk of water erosion due to level topography.

In terms of soil reclamation suitability, previous soil surveys rated both topsoil and subsoil of the Project site areas as ‘fair’ to ‘poor’. The supplemental soil survey in the NAPP project site area showed that the topsoil in this area had a rating of ‘poor.’ Subsoil ratings for the NAPP project site area and both topsoil and subsoil ratings for the NAPP Rail Yard area were consistent with previous survey findings.

Williams completed an environmental due-diligence exercise prior to the acquisition of the purchased land including a Phase I Environmental Site Assessment (Trace 2013). The results of that Phase I Environmental Assessment did not indicate historical issues of significant environmental concern. Specifically, the potential risks associated with soil quality impairment were deemed to be low. In 2015 further soil investigations were undertaken for the proposed Project as part of a Phase II Environmental Site Assessment (Advisian 2016a). During these investigations no evidence of soil contamination was found.

5.4 Surface Watercourses and Drainage

The Project site is located E of the NSR and W of the lower portion of Astotin Creek. The NSR is approximately 200 m from the edge of the Project footprint. It has its headwaters approximately 300 km upstream of Fort Saskatchewan, originating at the Saskatchewan Glacier of the Columbia Icefield, located on the eastern slope of the Rocky Mountains. Astotin Creek is located 3.3 km E of the Project site. Astotin Creek flows in a NE direction to Beaverhill Creek, approximately 6 km SE of the Beaverhill Creek confluence with the NSR. Runoff from the Williams-owned land generally flows in W and E directions with high-relief topography near the centre. The W portion of the Project site drains to the W towards the NSR. The E portion drains to the E, and then northwest (NW) toward the NSR. Standing water with relatively small areas and depths were observed in local depressions near the SE corner of the Williams Alberta PDH Facility footprint.

Corrugated pipes to be located between the rail tracks in the NAPP Rail Yard will divert the drainage water to a main drainage pipe, which will discharge water to a Williams owned and operated storm water pond, designed to contain a 1:100 year 24 hour event. In accordance with Williams’ EPEA Approval, the storm water pond will be sampled prior to discharge to an outfall structure on the NSR.

5.5 Groundwater

The Quaternary (surficial) geology in the area has been described by Andriashek (1988). The surficial soils at the Project site consist of a sequence of upper Aeolian sands, underlain by lacustrine clay, glacial till and pre-glacial sand and gravel overlying bedrock. Although local aquifers are present in the upper soil strata, the pre-glacial sand and gravel deposits represent an important regional aquifer. These coarse materials are situated 30 to 45 m below grade in the vicinity of the Project site, and are regionally known as the Beverly Channel aquifer.

The Beverly Channel represents a pre-glacial valley which geographically parallels the present day NSR valley, and has been infilled with sands and gravels overlying bedrock. These pre-glacial sand and gravel deposits are regional aquifers which affect both groundwater availability and flow distribution (Stantec Consulting Ltd. [Stantec] 2004).

The Beverly Channel deposits are known to be in direct hydraulic connection with the NSR, and the water levels in the channel vary with river water levels. The regional direction of groundwater flow is toward both the Beverly Channel and the NSR. The sand and gravel deposits of the Beverly Channel form an important regional aquifer (Stantec 2004).

Groundwater testing was undertaken in 2013 and 2015 (baseline and Phase II Environmental Site Assessment). Nitrate as N exceedances were noted in most groundwater samples, as is consistent with previous analytical data collected from the Williams-owned lands. It is inferred that these exceedances are related to former agricultural activities in the area. A few anomalous hydrocarbon, polycyclic aromatic hydrocarbon (PAH) and metal exceedances were noted in some of the groundwater samples collected. Some of these exceedances are relatable to naturally occurring conditions, while others are not and do not correlate with past activities on site or adjacent properties. Further baseline groundwater sampling will be conducted prior to Project commissioning, which will help to further characterize the noted anomalies and establish baseline groundwater quality.

In addition, Williams has developed a groundwater monitoring program for the Williams-owned land and will be responsible for groundwater monitoring around and on the Project footprint. Williams submitted the proposed groundwater monitoring program to AEP on October 1, 2015 and received regulatory authorization for the plan on October 15, 2015.

5.6 Air Quality

The Project is located within the boundaries of the North Saskatchewan Air Zone, which includes both the Capital Region Airshed Zone and the Fort Air Partnership Airshed Zone. The North Saskatchewan Air Zone is characterized by a strong industrial base of oil refineries, chemical manufacturing, and power generation. Future industrial activity in the region is also expected to include bitumen upgrading. Industrial activity, in combination with fuel combustion from vehicle use, home heating and urban activity, contribute to the generation of NO_2, SO_2, $PM_{2.5}$ and ozone (O_3).

Air quality within the Capital Region is monitored by a number of different organizations, including ESRD, the Fort Air Partnership, and the Strathcona Industrial Association. The Project lies within the Fort Air Partnership Airshed Zone, which collects air quality data through a combination of nine continuous and 55 passive monitoring stations. Data from the Fort Air Partnership (FAP 2009, 2010, 2011, 2014) can be evaluated to determine compliance with the Alberta Ambient Air Quality Objectives (AAAQO) (ESRD 2012).

5.7 Noise

The Northeast Capital Industrial Association (NCIA) consists of member industrial companies in the Fort Saskatchewan area. The NCIA has developed a RNMP for the AIH (NCIA 2014). The purpose of the RNMP is to provide facilities in the AIH with an alternative method for demonstrating noise compliance, that is, an alternative to Permissible Sound Level (PSL) compliance conventionally required by Alberta Utilities Commission (AUC) Rule 012 (AUC 2011) and by Alberta Energy Regulator (AER) Directive 038 (AER 2007).

A qualitative noise assessment has been conducted for the proposed Project. This assessment describes the steps that NAPP will take to manage noise, including noise from the NAPP manufacturing plant and NAPP Rail Yard activities. The assessment has shown that with mitigation, the cumulative noise levels at the closest two receptors, which are within 1.2 km from the Project site, will be within the noise thresholds specified in Directive 038 for both the daytime and nighttime periods (Advisian 2016b). As additional noise data is defined through detailed design, NAPP will re-visit its noise assessment to ensure impacts are minimized.

6. ENVIRONMENTAL EFFECTS

Overall, due to the location of the Project site and the nature of the area (pasture), environmental impacts as a result of the project are considered to be minimal. Potential impacts to soil and groundwater are considered to be unlikely, but will be monitored through the AEP approved programs governed by NAPP's EPEA Approval (to be received).

6.1 Effects on Fish and Fish Habitat

Other than the NSR, there are no other fish-bearing watercourses in proximity to the Project site. Surface runoff will be routed to the Williams-owned/operated storm water pond, and will be tested prior to release in accordance with EPEA Approval No. 341558-00-00. The storm water will be piped from the Williams-managed storm water pond (following testing) to an outfall at the NSR. A series of "over/under" weirs will be installed to ensure that any oily residue, plastics or other contaminants are removed from the water prior to discharge to the storm water pond. As a result, no adverse effects are expected to result from the Project on fish in the NSR that are part of a commercial, recreational or Aboriginal fishery, or their habitat.

In support of the Department License of Occupation (DLO) Application prepared by Williams for the proposed outfall structure to the NSR, a baseline fisheries assessment of the study area was completed between September 29 and October 2, 2014 (WorleyParsons 2015). The assessment included a review of historical fisheries information available for the NSR, a bathymetric and habitat survey and a determination of fish presence within the study area.

The primary results are summarized here:

- a desktop review identified 36 fish species that are present in the NSR, 20 of which are known to occur within a 5 km radius of the project area (most notably: goldeye, longnose sucker, mountain whitefish, northern pike, walleye, and white sucker);
- no lake sturgeon habitat sites were noted in the vicinity of the project area; the closest sites are located 15 km upstream and 75 km downstream;
- in-stream structure within the river channel and adjacent to banks was sparse, limiting formation of micro-habitat units over much of the study reach;
- banks throughout the study area were stable and well-vegetated with much of the area undisturbed;
- base substrate within the study area was predominately cobble and gravel with varying combinations of sandy fines and boulders present; and
- fish sampling was conducted with minnow traps and electrofishing; a total of five fish were captured (via electrofishing, white sucker, longnose sucker, and trout-perch) and another seven were observed (unidentified cyprinids, and shorthead rednose).

As a follow up to the baseline study, a DFO Self-Assessment was completed by Williams (Advisian 2015). The assessment did not identify any residual effects, and indicated that the proposed outfall construction is unlikely to result in serious harm to fish that are a part of or support a commercial, recreational, or Aboriginal fishery. The assessment did, however, recommend a few protection measures (i.e. monitoring during construction) to avoid potential harm to fish and their habitat that will be implemented during construction of the proposed outfall.

6.2 Effects on Marine Plants

As defined in the *Fisheries Act,* there are no marine plants in this area of Alberta therefore there will be no impact on marine plants as a result of this Project.

6.3 Effects on Migratory Birds

The majority of the Project site is pasture and is not considered preferred habitat for most bird species, including migratory birds. Given the scale and scope of the Williams Alberta PDH Facility, the Strathcona Cogeneration Plant, and the NAPP manufacturing plant, Williams has already proposed and received Alberta Wetland *Water Act* approval to remove the wetlands within the NE and SE quarter sections of 25-55-22 W4M, thus reducing the amount of suitable bird habitat in the vicinity of the Project. If any nests are found during Project construction, the appropriate regulatory agencies will be contacted (Environment Canada and/or AEP) and an appropriate plan of action will be developed. No adverse effects on migratory birds are expected as a result of the Project.

There is a storm water pond designed to accept surface runoff from the rail area. The storm water pond will be owned and operated by Williams. The local area is heavily industrialized and the noise of continuous plant and rail operations are likely to act as a deterrent to any wildlife. The proposed rail site was surveyed for wildlife in 2013 and no significant migratory bird habitat was found within the project development area. No specific bird deterrents are planned for the site.

The pond will be designed to discourage bird wildlife from the area. As a minimum the pond will be constructed using a synthetic liner to reduce the potential for aquatic life and food growth within the pond. The edges of the pond will be designed to prevent vegetation growth in order to deter birds from roosting, nesting, foraging or resting. The berm surrounding the pond will also have a hard surface. Any migratory birds temporarily utilizing the ponds will not be adversely affected as any water contained within the storm water pond will be effectively clean runoff and subjected to regular analytical testing and approval prior to discharge.

6.4 Potential Effects Related to Interprovincial/Federal/International Lands

It is anticipated that there will be no environmental effects of the Project on federal lands or on other provinces or countries. The Project is not located on federal land and there is no federal land within approximately 20 km of the Project site. Nor is the Project site located near a provincial or international border.

The closest federal lands are Elk Island National Park, approximately 20 km SE of the Project and Canadian Forces Base Edmonton located 20 km W of the Project (Figure 2). Given the distance of the Project from federal lands, it is not anticipated that the off-site dispersion of noise or air emissions will affect those federal lands. Adverse environmental effects are also not anticipated on lands outside Alberta or Canada.

6.5 Potential Effects on Aboriginal Peoples from Changes to the Environment

NAPP will not require access to, use of, or the exploration, development, and production of resources or lands currently used for traditional purposes by Aboriginal peoples. The nearest First Nation Reserves are the Alexander First Nation (Treaty 6) on Indian Reserves 134, 134A and 134B (located W of Morinville, Alberta) located approximately 55 km W of the Project, and the Enoch Cree Nation (Treaty 6) located approximately 53 km SW of the Project (Figure 5). The Gunn Métis Local #55 is approximately 79 km NE of the Project.

The Project site is privately owned and there are no current or known traditional uses of the Project site by Aboriginal groups or peoples.

Over 60 previous Historical Resources Impact Assessments (HRIAs) have been conducted in the general vicinity of the Project, none of which identified any significant historic resource sites. The Project site has been extensively disturbed by agricultural activities and; therefore, it is highly unlikely that any intact, previously unrecorded historic resource sites will be impacted by the Project.

Given that the closest First Nation community is over 50 km from the Project, and that air and noise emissions from the Project will disperse over that distance, adverse effects over or on lands currently used by Aboriginal peoples are not anticipated. The outcome of the Aboriginal Consultation Program detailed in Section 1.3.2 will identify any potential effects on Aboriginal Peoples not yet considered by NAPP.

7. REFERENCES

Advisian, 2015. Williams Alberta Propane Dehydrogenation Site Proposed Outfall Fisheries Act Self-Assessment Summary. DRAFT DOCUMENT, December 2015.

Advisian, 2016a. 2015 Phase II Environmental Site Assessment. Project Number 208005-00053-CA-REP-0001. Prepared for NAPP. 2016

Advisian, 2016b. North American Polypropylene Plant Noise Assessment Report. Project Number 208005-00053-CA-REP-0001. Prepared for NAPP. 2016

AEP (Alberta Environment and Parks), 2015. ACIMS (Alberta Conservation Information Management System) Database – All Tracked and Watched Elements and Element Occurrences (Parts 1 and 2, Non-sensitive and Sensitive Occurrences) as of July 2015. Available at: http://albertaparks.ca/albertaparksca/management-land-use/alberta-conservation-information-management-system-(acims)/download-data.aspx. Data Downloaded November 23, 2015.

AER (Alberta Energy Regulator), 2007. Directive 038: Noise Control. Available at: https://www.aer.ca/rules-and-regulations/directives/directive-038

Andriashek, L.D., 1988. Open File Report 1988-04. Quaternary stratigraphy of the Edmonton map Area, NTS 83H. Alberta Research Council.

AUC (Alberta Utilities Commission), 2011. AUC Rule 012: Noise Control. Available at: http://www.auc.ab.ca/acts-regulations-and-auc-rules/rules/Pages/Rule012.aspx

Capital Region Board. 2009. Capital Region Land Use Plan. Available at: http://capitalregionboard.ab.ca/priorities/land-use

CEAA (Canadian Environmental Assessment Agency), 2012a. *Regulations Designating Physical Activities*. SOR/2012-147. *Canadian Environmental Assessment Act*, 2012.

CEAA (Canadian Environmental Assessment Agency), 2012b. *Canadian Environmental Assessment Act*. Available at: http://laws-lois.justice.gc.ca/PDF/C-15.21.pdf

COSEWIC (Committee on the Status of Endangered Wildlife in Canada), 2008. COSEWIC assessment and update status report on the short-eared owl (Asio flammeus) in Canada. Ottawa. vi + 24 pp.

COSEWIC (Committee on the Status of Endangered Wildlife in Canada), 2011. COSEWIC assessment and status report on the Barn Swallow (Hirundo rustica) in Canada. Ottawa. ix + 37 pp.

COSEWIC (Committee on the Status of Endangered Wildlife in Canada), 2013. COSEWIC assessment and status report on the Little Brown Myotis (Myotis lucifugus), Northern Myotis (Myotis septentrionalis) and Tri-colored Bat (Perimyotis subflavus) in Canada. Ottawa. Xxiv + 93 pp.

COSEWIC (Committee on the Status of Endangered Wildlife in Canada), 2015. Wildlife Species Search: Database of wildlife species assessed by COSEWIC. Committee on the Status of Endangered Wildlife in Canada, Environment Canada, Ottawa, ON, Canada. Available from http://www.cosewic.gc.ca/eng/sct1/index_e.cfm [accessed 9 November 2015].

Environment Canada, 2015. Technical Guidance on Reporting Greenhouse Gas Emissions. Facility Greenhouse gas emission reporting. November 2015. Available at: https://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=47B640C5-1

Environment Canada, 2016. Environment and Climate Change Canada. GHG Emissions Quantification Guidance – Fuel Consumption. Access Link: https://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=AC2B7641-1 (accessed May 2016)

ESRD (Alberta Environment and Sustainable Resource Development), 2008. The Water Management Framework for the Industrial Heartland and Capital Region. Edmonton, Alberta. Available at: http://aep.alberta.ca/focus/cumulative-effects/capital-region-industrial-heartland/documents/WaterManagementFrameworkCapitalRegion.pdf

ESRD (Alberta Environment and Sustainable Resource Development), 2012. Capital Region Air Quality Management Framework. ISBN No. 978-1-4601-0065-3.

ESRD (Alberta Environment and Sustainable Resource Development), 2014. Specified Gas Reporting Standard Version 8.0. Available at: http://aep.alberta.ca/climate-change/guidelines-legislation/specified-gas-reporting-regulation/documents/SpecifiedGasReportingStandard-Mar2014.pdf

ESRD (Alberta Environment and Sustainable Resource Development), 2015a. Cumulative Effects Management System Within the Industrial Heartland and Capital Region. Available at: esrd.alberta.ca/focus/cumulative-effects/capital-region.../8827.pdf. Accessed April 8, 2015.

ESRD (Alberta Environment and Sustainable Resource Development), 2015b. Water Management Framework for the Industrial Heartland and Capital Region Effluent Characterization Program. June 15, 2015. Available at http://esrd.alberta.ca/focus/cumulative-effects/capital-region-industrial-heartland/documents/EffluentCharacterizationProgram-Jun15-2015.pdf

ESRD (Alberta Environment and Sustainable Resource Development), 2015c. Land Use Framework – Regional Plans. Available at: https://landuse.alberta.ca/REGIONALPLANS/NORTHSASKATCHEWANREGION/Pages/default.aspx. Accessed April 23, 2015.

ESRD (Alberta Environment and Sustainable Resource Development), 2015d. FWMIS (Fish and Wildlife Internet Mapping System). Available at: http://esrd.alberta.ca/fish-wildlife/fwmis/default.aspx. Data downloaded: March 2015.

ESRD (Alberta Environment and Sustainable Resource Development), 2015e. Recommended Land Use Guidelines: Key Wildlife and Biodiversity Zones. Fish and Wildlife Division, Alberta Environment and Sustainable resource Development. Edmonton, AB. 2 p. Available online at: http://aep.alberta.ca/fish-wildlife/wildlife-land-use-guidelines/documents/KeyWildlifeBiodiversityZones-Apr08-2015.pdf

FAP (Fort Air Partnership), 2009. Fort Air Partnership Ambient Air Monitoring Network 2008 Annual Technical Report Network and Data Summary.

FAP (Fort Air Partnership), 2010. Fort Air Partnership Ambient Air Monitoring Network 2009 Annual Technical Report Network and Data Summary.

FAP (Fort Air Partnership), 2011. Fort Air Partnership Ambient Air Monitoring Network 2010 Annual Technical Report Network and Data Summary.

FAP (Fort Air Partnership). 2014. Fort Air Partnership Ambient Air Monitoring Network 2013 Annual Technical Report Network and Data Summary. ESRD. 2015. Cumulative Effects Management. Available at: https://landuse.alberta.ca/CumulativeEffects/CumulativeEffectsManagement/Pages/default.aspx. Accessed March 29, 2015.

Government of Alberta, 1993. *Environmental Protection and Enhancement Act. Environmental Assessment (Mandatory and Exempted Activities) Regulation*. Alberta Regulation 111/1993 with amendments up to and including Alberta Regulation 62/2008. Available at: http://www.qp.alberta.ca/documents/Regs/1993_111.pdf

Government of Alberta, 2010. General Status of Alberta Wild Species. Alberta Environment and Parks. Available from http://esrd.alberta.ca/fish-wildlife/species-at-risk/wild-species-statussearch. aspx (Accessed 6 November 2015).

Hamilton, I.M., J.L. Skilnick, H. Troughton, A.P. Russell, and G.L. Powell, 1998. Status of the Canadian Toad (Bufo hemiophrys) in Alberta. Alberta Environmental Protection, Wildlife Management Division, and the Alberta Conservation Association, Wildlife Status Report No. 12, Edmonton, AB.

Hoodicoff, C., 2006. Badger prey ecology: the ecology of six mammals found in British Columbia. B.C. Ministry of Environment, Ecosystems Branch, Victoria, B.C. Wildlife Working Report No. WR-109.

Messick, J.P. and M.G. Hornocker, 1981. Ecology of the badger in southwestern Idaho. Wildlife Monographs. 76. 53 pp.

NCIA (Northeast Capital Industrial Association), 2014. NCIA Regional Noise Management Plan Annual Report. Available at www.ncia.ab.ca/documents/rnmp_aer_2014.

NCIA (Northeast Capital Industrial Association), 2015. Our Environment – Protecting our Groundwater. Available at http://www.ncia.ab.ca/environment_groundwater.html. Accessed March 29, 2015.

Prescott, D.R.C., 1997. Status of the Sprague's Pipit (Anthus spragueii) in Alberta. Alberta Environmental Protection, Wildlife Management Division, Wildlife Status Report No. 10, Edmonton, AB.

Rowell, P., and D.P. Stepnisky, 1997. Status of the Peregrine Falcon (Falco peregrinus anatum) in Alberta. Alberta Environmental Protection, Wildlife Management Division, Wildlife Status Report No. 8, Edmonton, AB.

Scobie, D., 2002. Status of the American Badger (Taxidea taxus) in Alberta. Alberta Sustainable Resource Development, Fish and Wildlife Division, and Alberta Conservation Association, Wildlife Status Report No. 43, Edmonton, AB.

Smith, H.C., 1993. Alberta Mammals: an atlas and guide. The Provincial Museum of Alberta, Edmonton, AB. 238 pp.

Stantec (Stantec Consulting Ltd.), 2004. Regional Assessment of the Groundwater Quality in the Beverly Channel in the Fort Saskatchewan Area. Prepared for the Northeast Capital Industrial Association, by Stantec Consulting Ltd., Dated May 2004.

Strathcona County, 2001. Strathcona County Alberta's Industrial Heartland Area Structure Plan Bylaw. Available at: http://www.industrialheartland.com/index.php?option=com_content&view=article&id=59&Itemid=100033

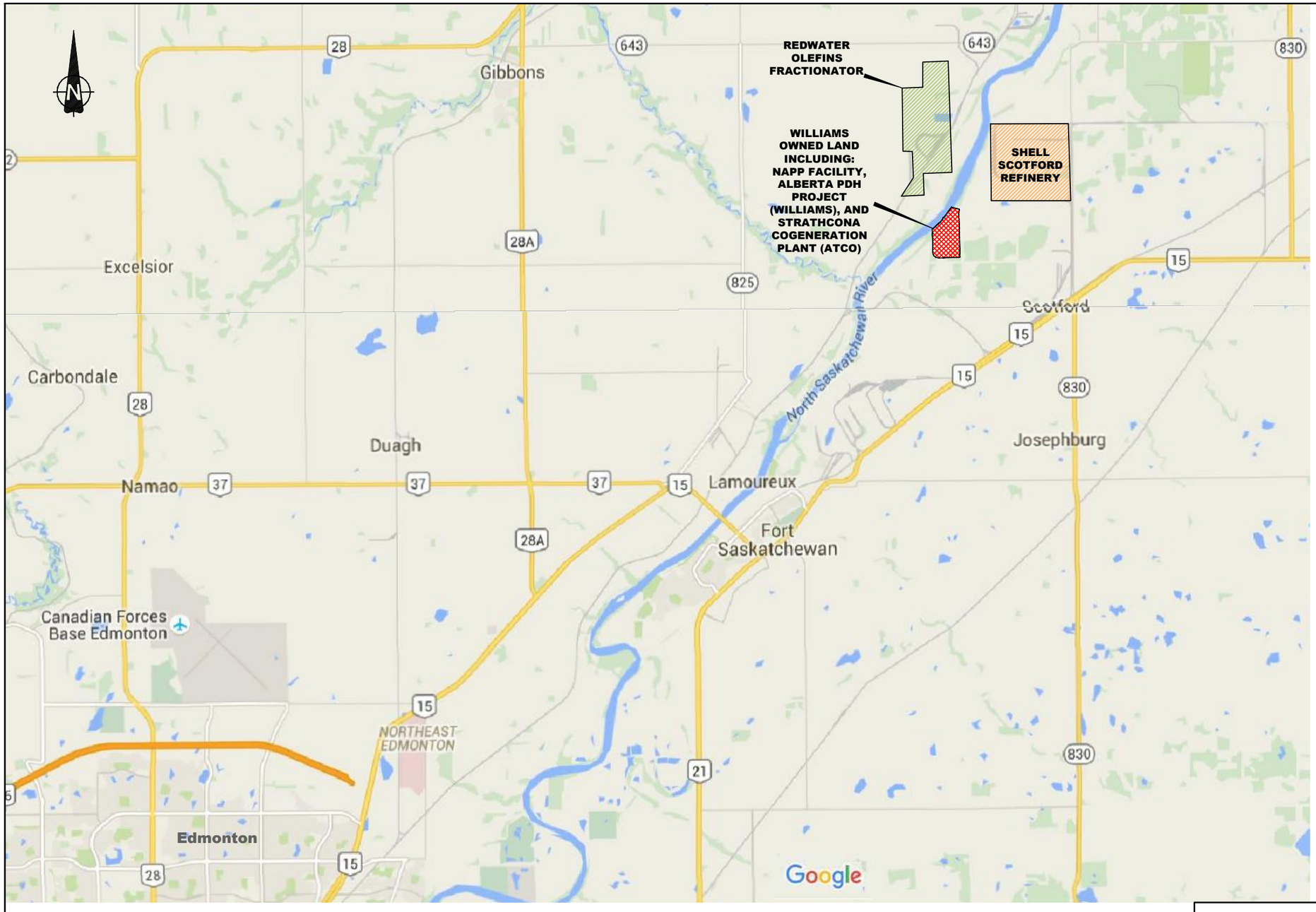
Strathcona County, 2007. Municipal Development Plan Bylaw 1-2007. Approved May 22, 2007. Available online at: http://www.strathcona.ca/departments/planning-development-services/zoning-and-planning-documents/municipal-development-plan-bylaw-1-2007/

Strathcona County, 2015. Strathcona County Land Use Bylaw. Available at: http://www.strathcona.ca/departments/planning-development-services/zoning-and-planning-documents/land-use-bylaw-8-2001/land-use-bylaw-review/

Trace (Trace Associates Inc.), 2013. Phase I Environmental Site Assessment: Future Industrial Property PDH Facility Project E1/2-25-055-22 W4M, Near Fort Saskatchewan, Alberta. Trace Project No. 200-596-01, June 17, 2013. Prepared for Williams Energy Canada ULC. St. Albert, AB. 326 pp.

WorleyParsons (WorleyParsons Canada Services Ltd.) 2015. Water intake on the North Saskatchewan River Fisheries Assessment. Letter Report prepared for Williams Canada Propylene ULC, Calgary Alberta.

Figures



KEY MAP OF ALBERTA
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1. MAP BACKGROUND IS FROM GOOGLE MAP, 25-SEP-2015.

NAPP ULC
NAPP RAIL YARD - PROJECT DESCRIPTION

SITE LOCATION MAP

Date: 16-MAY-16	Drawn by: FY	Edited by: MYT	App'd by: JM

WorleyParsons Project No. 208005-00053

FIG No 1 | REV 0

NAPP

PLOT DATE & TIME: 16/5/2016 4:04:06 PM
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Lostpoint Lake
Redwater
North Bruderheim
Northwest of Bruderheim
Bon Accord
Gibbons
Bruderheim
Lamont
Sturgeon River
Warren Thomas (Josephburg) Aerodrome
Fort Saskatchewan
North Saskatchewan River
Canadian Forces Base Edmonton
Riverlot 56
Astotin Lake
Elk Island National Park

113°32'30"W 113°27'0"W 113°21'30"W 113°16'0"W 113°10'30"W 113°5'0"W 112°59'30"W 112°54'0"W 112°48'30"W 112°43'0"W

Legend

- Town
- Canadian Forces Base Edmonton
- Warren Thomas (Josephburg)
- Nearest Residences
- Creek/River
- Lake
- Williams Owned Site including NAPP Facility, Alberta PDH Facility, and ATCO Project
- Key Wildlife and Biodiversity Zone[1]
- Sensitive Raptor Range and Sharp Tailed Grouse Range[1]
- Parks[2]

Fort Saskatchewan, Strathcona County and Sturgeon County Land Use Plan[3]

- All Other Land Use
- Industrial
- Residential

Notes:
Site Locations are approximate

Sources:
[1]Government of Alberta
[2]Parks 'Parks Division – Alberta Tourism, Parks and Recreation'
[3]City of Edmonton, Fort Saskatchewan, Sturgeon County

N

0 1 2

Kilometres
1:150,000

B SHEET	SCALE: SHOWN
DATE:	16/05/2016
DRAWN:	Y.M.
EDITED:	K.R.
APPROVED:	J.M.

NAPP

NAPP ULC
NAPP Rail Yard - Project Description
Regional Features Location Map

WORLEYPARSONS PROJECT No:	FIG No:	REV
208005-00053	2	0

FILE LOCATION: Y:\Kenny.Ritchie\fortsamer\Fort_SK\01_Mxd\CEAA_Project_Description\20160516_Fig2_Regional_Features_Location_Map_Rev0_ENG.mxd

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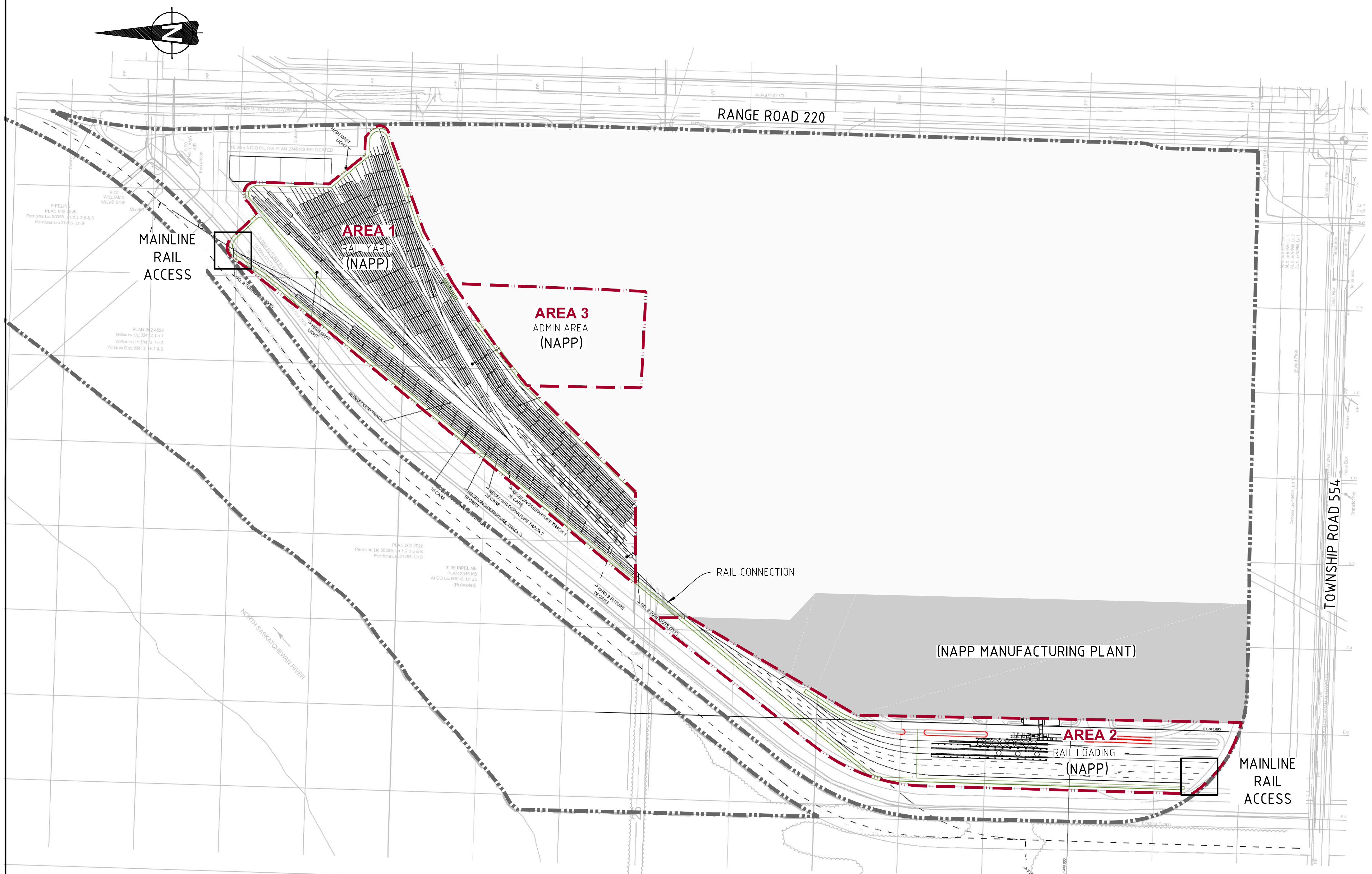

SOURCE:

KE GROUP INC., KTN-2501-NAPP, PDF FILE: A101 SITE PLAN OVERALL-20160114.PDF, DATED 1/14/16.

NAPP ULC
NAPP RAIL YARD - PROJECT DESCRIPTION

SITE LAYOUT PLAN

Date:	16-MAY-16	Drawn by:	OTHERS	Edited by:	MYT	App'd by:	JM

WorleyParsons Project No. 208005-00053

FIG No 3A REV 0

NAPP

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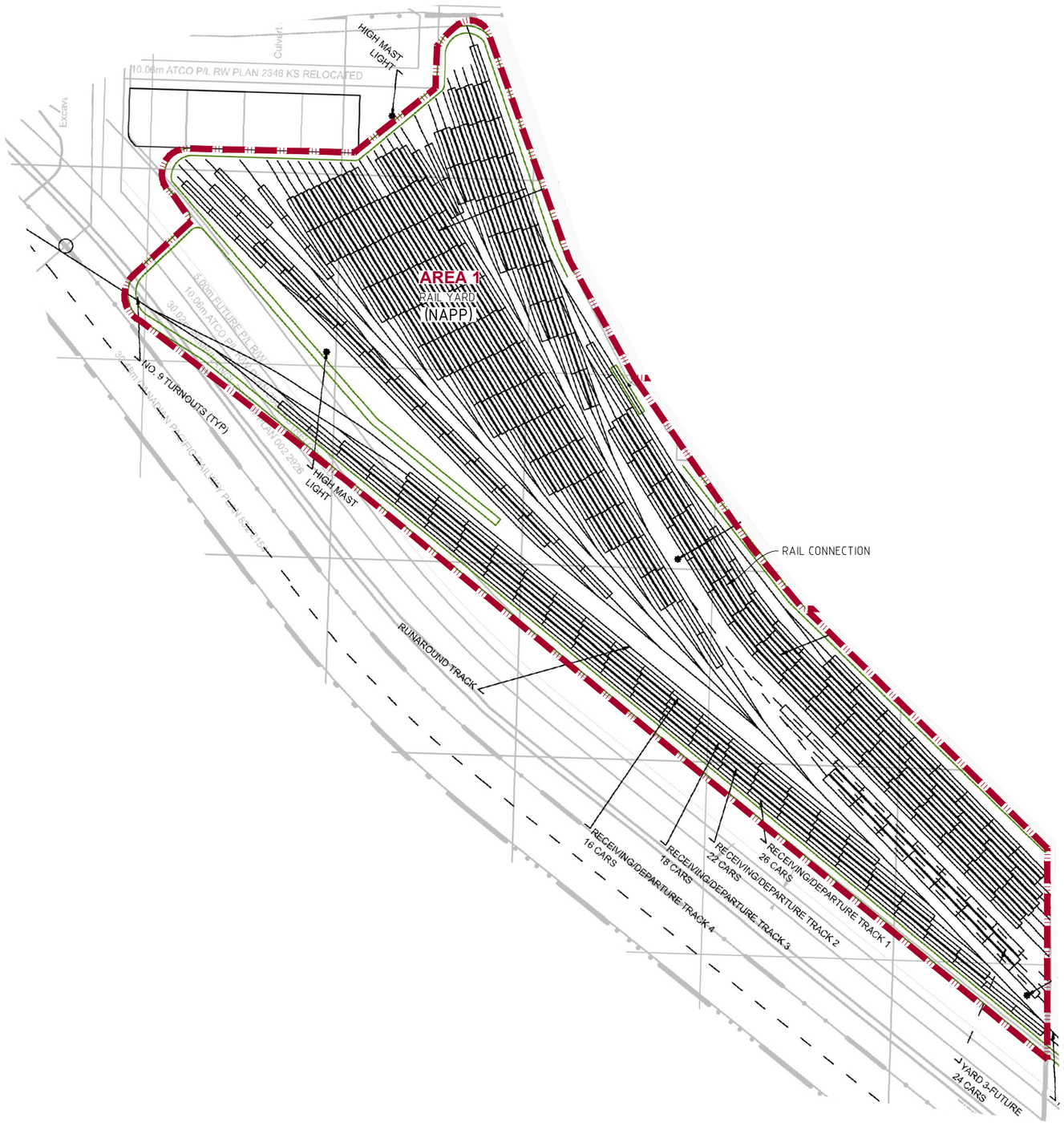

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UTM NAD 83 ZN 12

m 0 50 100 150 m

1:2500

NAPP ULC
NAPP RAIL YARD - PROJECT DESCRIPTION

AREA 1 - RAIL YARD

Date: 16-MAY-16	Drawn by: OTHERS	Edited by: MYT	App'd by: JM
NAPP		WorleyParsons Project No. 208005-00053	
		FIG No 3B	REV 0

PLOT DATE & TIME: 16/5/2016 4:07:04 PM
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USER NAME: mike.telford
ISSUING OFFICE: eCAD

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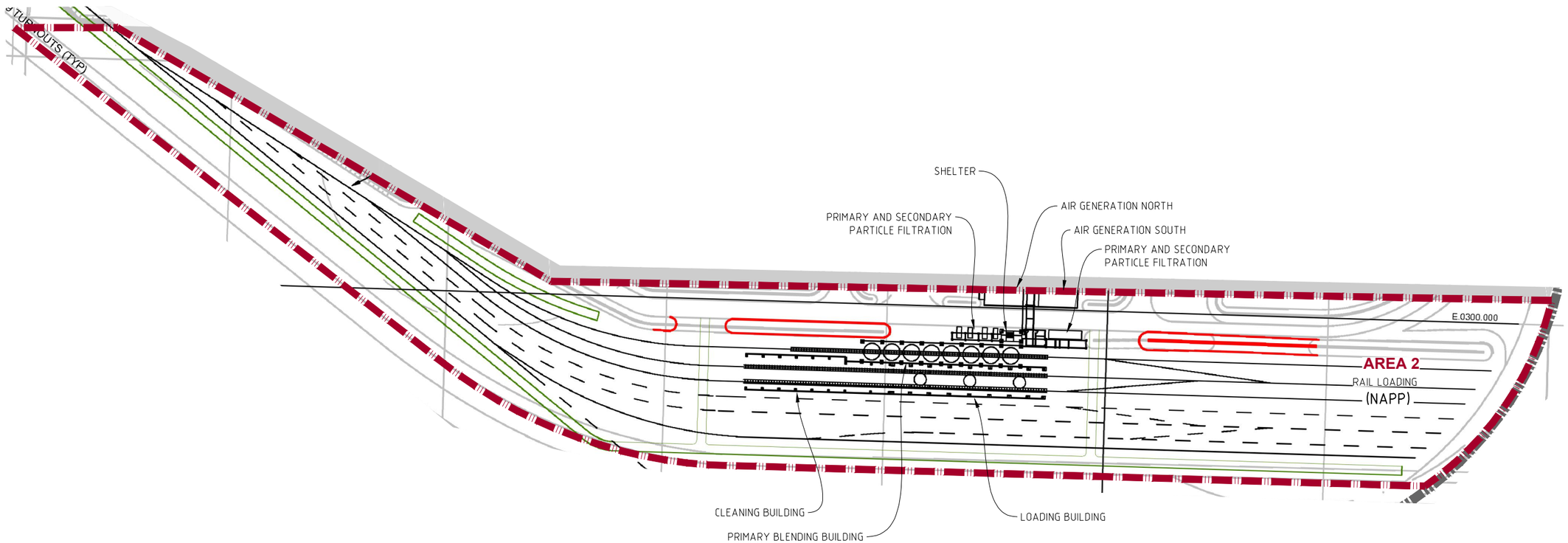

UTM NAD 83 ZN 12

m 0 50 100 m

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SOURCE:

KE GROUP INC., KTN-2501-NAPP, PDF FILE: A101 SITE PLAN OVERALL-20160114.PDF, DATED 1/14/16.

NAPP ULC

NAPP RAIL YARD - PROJECT DESCRIPTION

AREA 2 - RAIL LOADING

Date:	Drawn by:	Edited by:	App'd by:
16-MAY-16	OTHERS	MYT	JM

WorleyParsons Project No.

208005-00053

FIG No **3C** REV **0**

NAPP

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ISSUING OFFICE: eCAD

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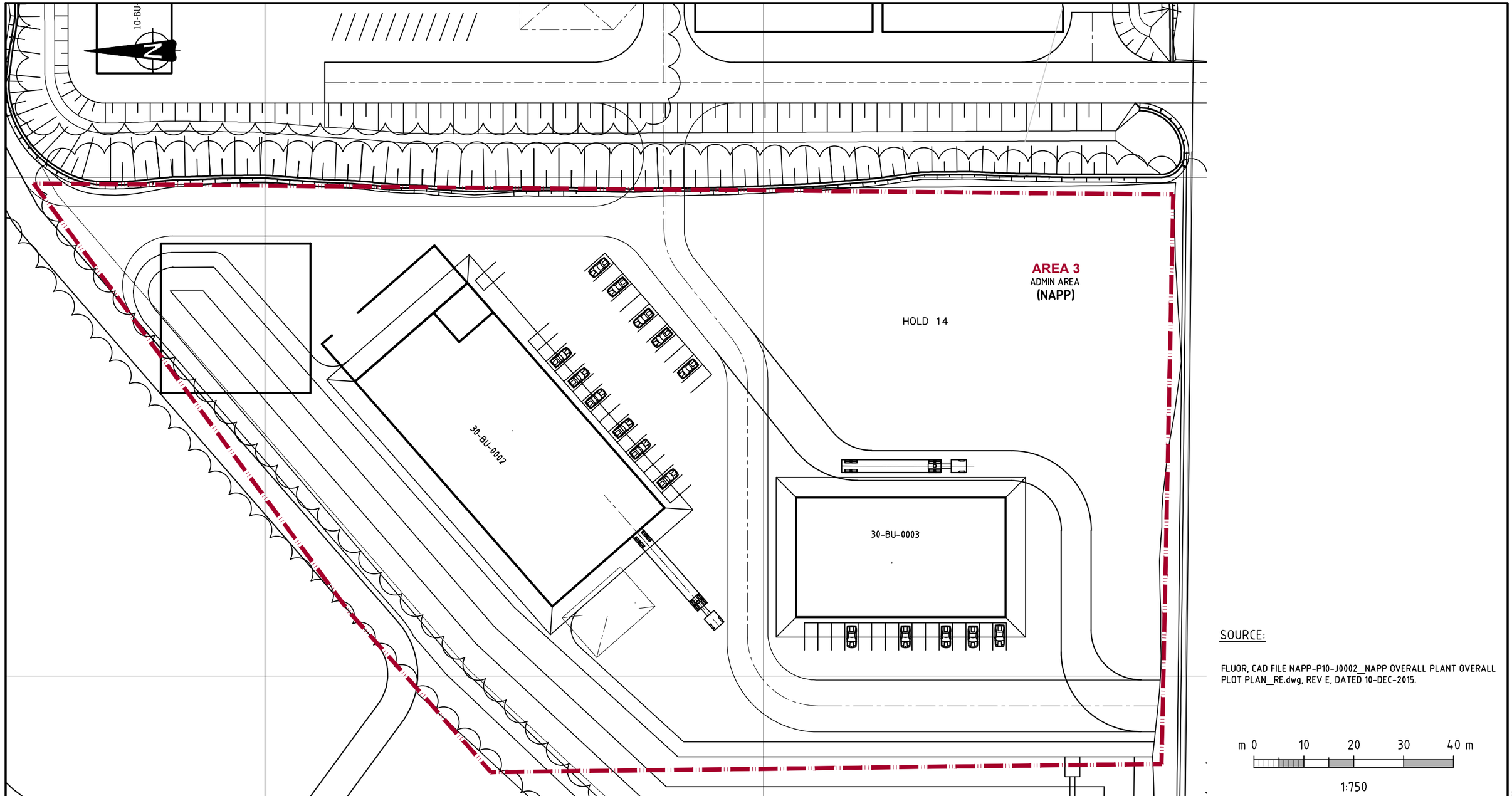

SOURCE:

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m 0 10 20 30 40 m

1:750

NAPP ULC

NAPP RAIL YARD - PROJECT DESCRIPTION

AREA 3 - ADMIN AREA

Date:	Drawn by:	Edited by:	App'd by:
16-MAY-16	OTHERS	MYT	JM

WorleyParsons Project No. 208005-00053

FIG No 3D | REV 0

NAPP

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ISSUING OFFICE: eCAD

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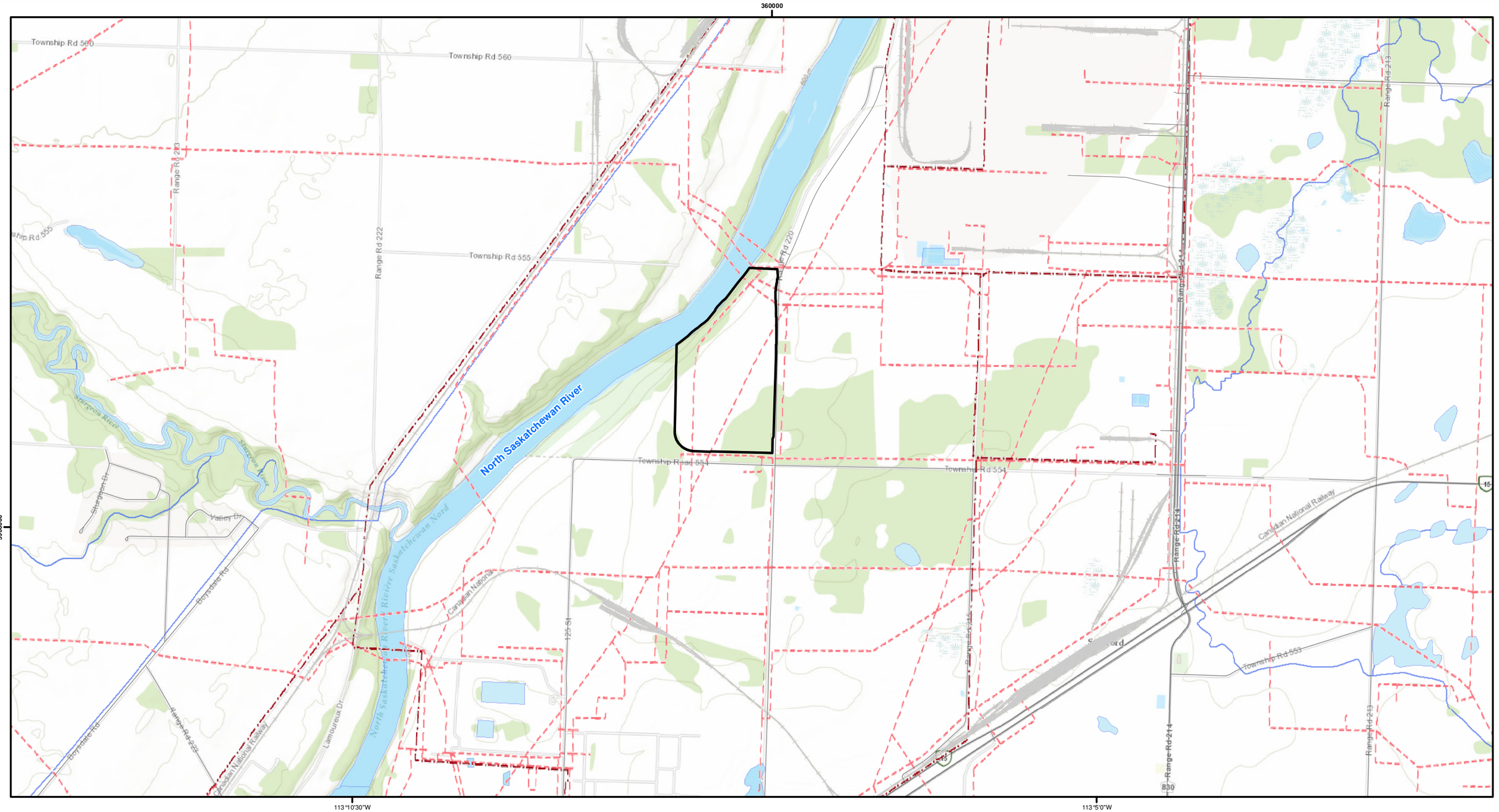

Legend

- Powerline[1]
- Pipeline[1]
- Railway[1]
- Road[1]
- Creek/River
- Lake
- Parks[2]
- Williams Owned Site including NAPP Facility, Alberta PDH Facility, and ATCO Project

Notes:
Site Locations are approximate

Sources:
[1]Government of Canada
[2]Parks 'Parks Division – Alberta Tourism, Parks and Recreation'

N

0 250 500
Metres
1:30,000

B SHEET	SCALE: SHOWN
DATE:	16/05/2016
DRAWN:	Y.M.
EDITED:	K.R.
APPROVED:	J.M.

"This drawing is prepared for the use of our customer as specified in the accompanying report. WorleyParsons Canada Ltd. assumes no liability to any other party for any representations contained in this drawing."

NAPP

NAPP ULC
NAPP Rail Yard - Project Description
Local Infrastructure

WORLEYPARSONS PROJECT No:	FIG No:	REV
208005-00053	4	0

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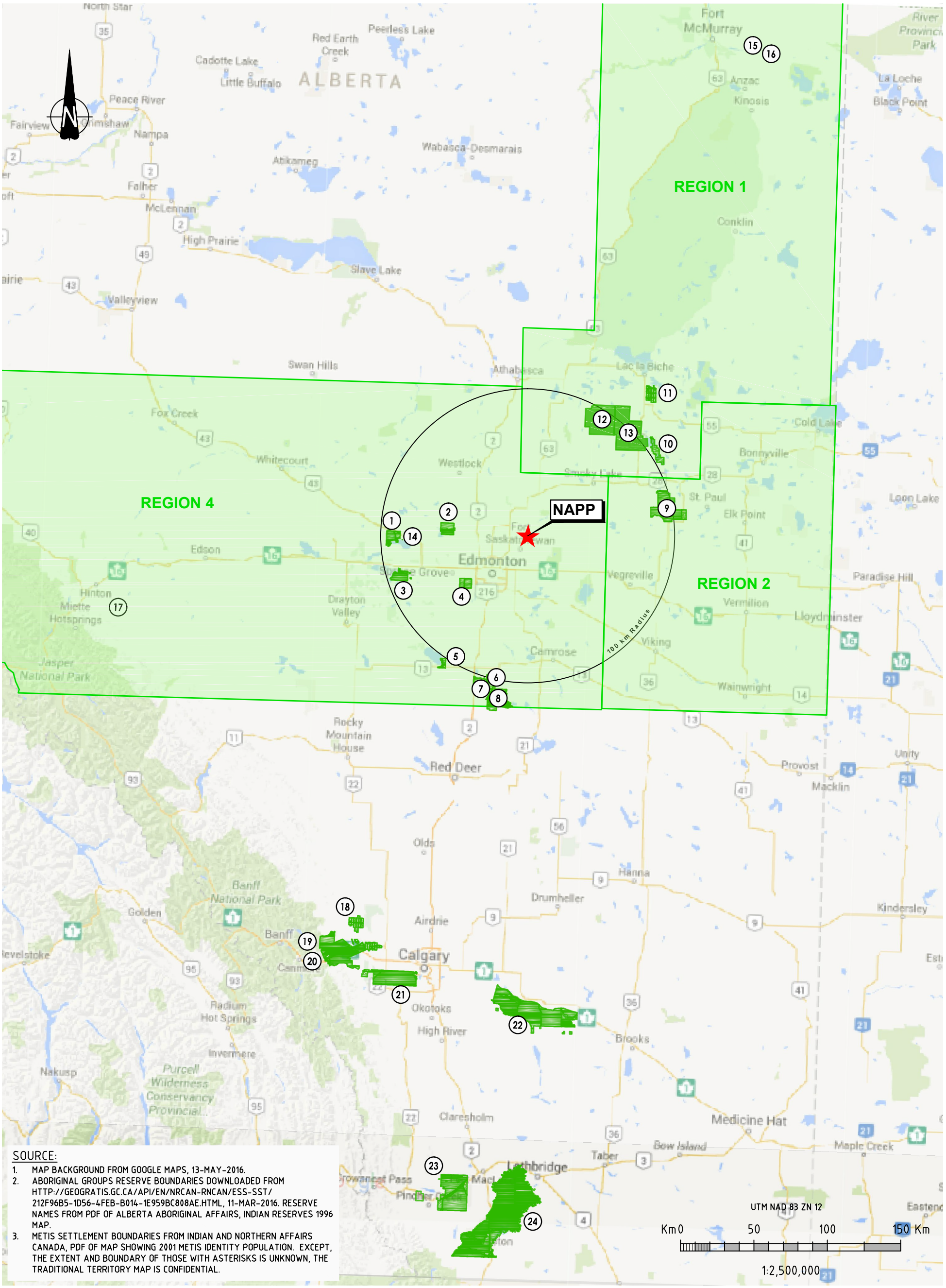

SOURCE:

1. MAP BACKGROUND FROM GOOGLE MAPS, 13-MAY-2016.
2. ABORIGINAL GROUPS RESERVE BOUNDARIES DOWNLOADED FROM HTTP://GEOGRATIS.GC.CA/API/EN/NRCAN-RNCAN/ESS-SST/212F96B5-1D56-4FEB-B014-1E959BC808AE.HTML, 11-MAR-2016. RESERVE NAMES FROM PDF OF ALBERTA ABORIGINAL AFFAIRS, INDIAN RESERVES 1996 MAP.
3. METIS SETTLEMENT BOUNDARIES FROM INDIAN AND NORTHERN AFFAIRS CANADA, PDF OF MAP SHOWING 2001 METIS IDENTITY POPULATION. EXCEPT, THE EXTENT AND BOUNDARY OF THOSE WITH ASTERISKS IS UNKNOWN, THE TRADITIONAL TERRITORY MAP IS CONFIDENTIAL.

ABORIGINAL GROUP RESERVE

1	ALEXIS NAKOTA SIOUX NATION
2	ALEXANDER FIRST NATION
3	PAUL FIRST NATION
4	ENOCH CREE NATION
5	LOUIS BULL TRIBE
6	ERMINESKIN CREE NATION
7	MONTANA FIRST NATION
8	SAMSON CREE NATION
9	SADDLE LAKE CREE NATION
10	WHITEFISH LAKE #128 FIRST NATION
11	BEAVER LAKE CREE NATION
12	BUFFALO LAKE MÉTIS SETTLEMENT
13	KIKINO METIS SETTLEMENT
14	GUNN MÉTIS LOCAL #55*
15	FORT MCMURRAY #468 FIRST NATION*
16	CHIPEWYAN PRAIRIE DENE FIRST NATION*
17	FOOTHILLS OJIBWAY FIRST NATION*
18	STONEY (WESLEY) BAND
19	STONEY (BEARSPAW) BAND
20	STONEY (CHINIKI) BAND
21	TSUUT'INA NATION
22	SIKSIKA NATION
23	PIIKANI NATION
24	BLOOD TRIBE

METIS NATION OF ALBERTA REGION

NAPP ULC
NAPP RAIL YARD - PROJECT DESCRIPTION

LOCATION OF ABORIGINAL GROUPS RELATIVE TO NAPP SITE

Date:	Drawn by:	Edited by:	App'd by:
26-MAY-16	MYT	MYT	JM

WorleyParsons Project No. 208005-00053

FIG No 5 | REV 1

MPC_B_Envir0
VERSION: 2012-1EE