

Inter Pipeline Propylene Ltd.

Summary of Project Description Heartland Petrochemical Complex Rail Yard Project July 2018

Last Updated: 16 July 2018



List of Abbreviations and Acronyms

AEP	Alberta Environment and Parks	
AIH	Alberta Industrial Heartland	
AUC	Alberta Utilities Commission	
CEAA 2012	Canadian Environmental Assessment Act, 2012	
CN	Canadian National Railway	
СР	Canadian Pacific Railway	
СО	Carbon monoxide	
CO ₂	Carbon dioxide	
CO₂eq	Carbon dioxide equivalent	
CUB	Central Utilities Block	
EPEA	Environmental Protection and Enhancement Act	
FWMIS	Alberta's Fisheries and Wildlife Management Information System	
ha	Hectares	
Inter Pipeline	Inter Pipeline Propylene Ltd.	
km	Kilometers	
m^3	Cubic meters	
NE	Northeast	
NO _x	Nitrogen oxides	
PDH	Propane dehydrogenation	
PM _{2.5}	Particulate matter	
PP	Polypropylene	
Project	Rail Yard	
ROW	Right-of-Way	
SARA	Species at Risk Act	
SE	Southeast	
SO ₂	Sulphur dioxide	
Williams	Williams Energy Canada ULC and Williams Canada Propylene ULC	
W4M	West of the Fourth Meridian	



GENERAL INFORMATION

Inter Pipeline Propylene Ltd., a wholly-owned subsidiary of Inter Pipeline Ltd. (hereafter interchangeably referred to as Inter Pipeline), proposes to construct a rail yard (Heartland Petrochemical Complex Rail Yard; the Project) associated with the Heartland Petrochemical Complex that will be located in the Alberta Industrial Heartland (AIH), in Strathcona County The Heartland Petrochemical Complex will be located on freehold land owned by Inter Pipeline within the northeast (NE) and southeast (SE) quarters of Section 25, Township 55, Range 22, West of the Fourth Meridian (W4M), north of the City of Fort Saskatchewan. Refer to Figure 1 for the regional location.

The Project Site is zoned for heavy industrial land use. The lands within the Heartland Petrochemical Complex Site are highly disturbed land previously used for agricultural purposes. The Project Site represents approximately 10 hectares (ha) of the 94 ha Heartland Petrochemical Complex Site. Refer to Figure 2 for the site location.

The Project will consist of a railcar loading facility and railcar storage yard and will involve the construction of up to 11 km of track across 26 onsite tracks. The rail storage area will include rail infrastructure able to support the loading of up to 24 cars per day, with capacity to store over 200 loaded and empty cars. Designated exchange sidings will facilitate the exchange of empty and loaded cars between Inter Pipeline operations and potential rail service providers.

The Heartland Petrochemical Complex will be a world-scale integrated propane dehydrogenation (PDH) and polypropylene (PP) facility designed to convert locally sourced, low-cost propane into polypropylene, a high value, easy to transport plastic used in the manufacturing of a wide range of finished products. For the purpose of this Project Description Summary, the following definitions will apply to distinguish the Project and the overall Heartland Petrochemical Complex:

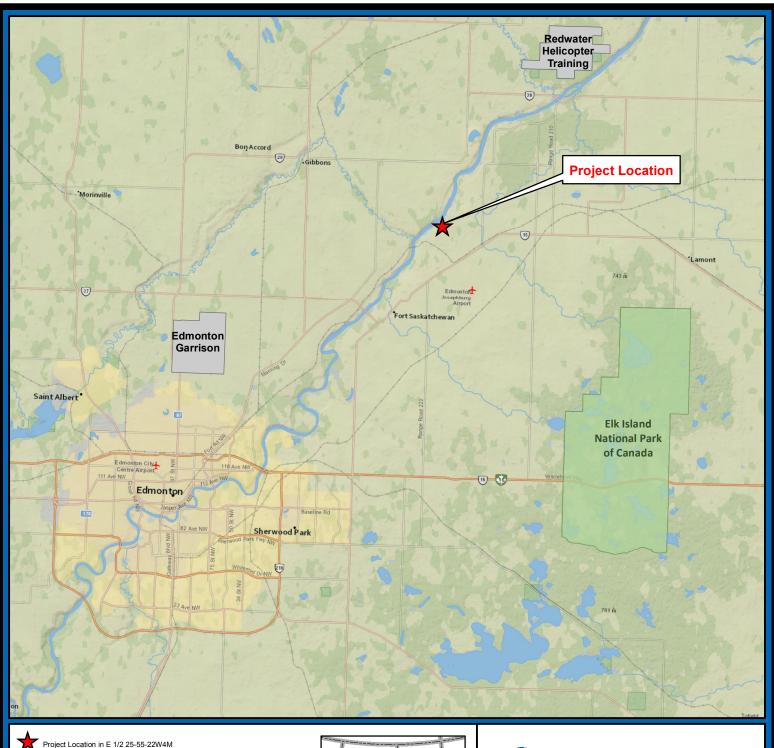
- Heartland Petrochemical Complex the PDH, PP, a cogeneration plant to act as a Central Utilities
 Block (CUB) that will provide power, steam, and other utilities, and the rail yard (the Project);
- Heartland Petrochemical Complex Site all lands occupied by the Heartland Petrochemical Complex and associated infrastructure;
- Project the rail yard, including the rail lines and infrastructure specific to the rail yard;
- Project Site the land within the overall Heartland Petrochemical Complex Site that will be occupied by the rail yard.



The Project Description has been submitted to the Canadian Environmental Assessment Agency to describe the Project in relation to the requirements of the *Canadian Environmental Assessment Act, 2012* (CEAA 2012). There are no regional environmental studies, as defined under CEAA 2012 (Sections 73 and 74 of the Act) that apply to the region in which the Project is located.

Proponent and Contact Information

Proponent	CEO or equivalent	Principal Contact
Inter Pipeline Propylene Ltd. 3200, 215 – 2 Street SW Calgary Alberta T2P 1M4	Mr. Paul Binassi General Manager PDH/PP Project Development 403-717-5774 paul.binassi@interpipeline.com	Ms. Mirtyll Alboiu Regulatory and Environmental Specialist 587-475-1101 mirtyll.alboiu@interpipeline.com





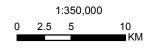




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Figure 1: Regional Location

Heartland Petrochemical Complex Inter Pipeline Propylene Ltd.





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Regulations Designating Physical Activities

The Canadian Environmental Assessment Agency may require a federal environmental assessment pursuant to CEAA 2012 for certain rail projects. The following section of the *Regulations Designating Physical Activities* is applicable to this Project:

25 (b). 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 will consist of approximately 11 kilometers (km) of 26 onsite tracks.

Applicable Acts and Regulations

The following federal regulations are relevant to the Project:

- Migratory Birds Convention Act, 1994: The Act strictly prohibits the harming of migratory birds and the disturbance of their nests and eggs. The entire Heartland Petrochemical Complex Site, including the Project Site, was cleared of vegetation in March 2015. The clearing occurred outside of the nesting period for migratory birds (April 20 – August 25).
- Species at Risk Act (SARA): The Act lists species that 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 SARA. No evidence of
 SARA-listed threatened or endangered species or their habitat was detected during
 baseline surveys at the Heartland Petrochemical Complex Site, including the Project
 Site.
- Fisheries Act: The Act focuses on conservation and protection of fish habitat essential to sustaining freshwater and marine fish species. No fish or fish habitat are within the Project Site.
- Railway Safety Act: addressed under provincial Railway (Alberta) Act (Alberta Transportation).
- Transport Canada: Assesses aeronautical impacts from obstruction or lighting of structures associated with industrial developments. None of the Project structures required an aeronautical assessment.
- NAV Canada: Assesses aeronautical impacts from obstruction or lighting of structures associated with industrial developments under the Land Use Proposal. None of the Project structures required an assessment by NAV Canada.
- CEAA 2012: the Project is listed in Regulations Designating Physical Activities, and therefore, requires a Project Description and Project Summary. None of the other components of the Heartland Petrochemical Complex are listed activities and therefore do not require review under CEAA 2012.



The provincial regulatory authority with jurisdiction over the Heartland Petrochemical Complex is the AEP. The following provincial regulations are relevant to the Project:

- The provincial regulatory authority with jurisdiction over the Heartland Petrochemical Complex is Alberta Environment and Parks (AEP). The proposed activity (petrochemical manufacturing facility) is not considered an energy resource activity (as defined in the Responsible Energy Development Act Section 1(1)(i/j)), which would be under the Alberta Energy Regulator's (AER) jurisdiction.
- Environmental Protections and Enhancement Act (EPEA) under Environmental Assessment (Mandatory and Exempt Activities) Regulation the Project is not a listed activity, and therefore, does not require an Environmental Impact Assessment prior to receiving approval under EPEA from the AEP. However, as a discretionary activity, a project summary description was submitted to AEP and under section 44(3) of EPEA, the Director decided that further assessment was not required (October 24, 2017). Project summary descriptions were submitted to AEP for the other components of the Heartland Petrochemical Complex and none required further assessment (August 29, 2013, for PDH; October 24, 2017, for PP and the Project; and November 6, 2017, for CUB).
- EPEA under the Guide to Content for Industrial Approval Applications the Project will be covered under the EPEA approval issued for the PDH facility. Inter Pipeline will obtain approval to include the Project under the current EPEA approval.
- Alberta Wildlife Act: Section 36(1) of the Alberta Wildlife Act states that "a person shall not willfully molest, disturb, or destroy a house, nest, or den of prescribed wildlife". The entire Heartland Petrochemical Complex Site, including the Project Site, was cleared of vegetation in March 2015 and heavy construction activities are ongoing making the site unsuitable for wildlife habitat.
- A Historical Resources Act authorization for the Heartland Petrochemical Complex Site, including the Project Site, was received from Alberta Culture and Tourism and no Historical Resources Impact Assessment was required (October 16, 2013).
- Approval to construct and operate the Project will be obtained from Alberta
 Transportation under the Railway (Alberta) Act once the design is finalized in
 accordance with the design standards for industrial railways in Alberta.
- The Alberta Utilities Commission (AUC) and AEP approved the cogeneration plant, the substation, and industrial system designation that will support the utilities needs of the Heartland Petrochemical Complex, including the Project.
- A Preliminary Certificate under the *Water Act* was issued by AEP that allocates the annual water diversion volumes for the Heartland Petrochemical Complex. The Project water needs for the railcar cleaning facility are covered under this license.



 A Water Act authorization was issued by the AEP to fill and modify wetlands located within the Heartland Petrochemical Complex Site. No wetlands were located within the Project Site. All wetlands were removed under this authorization in 2015.

The municipal authority for the Project area is Strathcona County. Municipal permits associated with the development of the Project are as follows:

- Land Use Bylaw 6-2015 regulates the use, conservation, and development of land within Strathcona County. A development permit for the Project will be obtained from Strathcona County.
- The Heartland Petrochemical Complex Site, including the Project Site, is zoned as heavy industrial land use.

PROJECT INFORMATION

The rail yard is the only component of the Heartland Petrochemical Complex that is assessed under CEAA 2012. None of the other components of the Heartland Petrochemical Complex meet or exceed any thresholds listed in the *Regulations Designating Physical Activities* therefore, are not subject to review under CEAA 2012.

The Project will be located within the Heartland Petrochemical Complex Site that will accommodate: (a) PDH facility designed to process approximately 22,000 barrels/day of propane into 525,000 tonnes/year propylene; (b) PP facility designed to convert the propylene from the PDH facility to produce approximately 525,000 tonnes/year of various grades of polypropylene; (c) a 102 megawatt cogeneration plant designed to produce steam, electricity, and other utilities for the Heartland Petrochemical Complex; and (d) rail yard to facilitate the transport of polypropylene to markets. Inter Pipeline will operate the Heartland Petrochemical Complex.

Project Components

The three primary components of the Project are: a railcar loading facility; railcar storage; and a railcar cleaning facility. The Project will occupy approximately 10 ha and will contain rail support facilities such as a locomotive shop, an operations building, and a building housing the railcar loading and cleaning facilities. The rail yard will include 26 tracks totalling approximately 11 km, including storage and bad order tracks. The rail yard and associated infrastructure is anticipated to operate 24-hours a day, 7-days a week, 365-days per year to match the expected overall complex operations schedule. The rail storage area will provide rail infrastructure able to support the loading of up to 24 cars per day, with capacity to store over 200 railcars in the storage yard. Each railcar can hold approximately 176 cubic meters (m³)of polypropylene pellets; based on a daily loading capacity of up to 24 cars per day, the Project will have a loading capacity of up to 4,233 m³/day.



The Project (Figure 3) is designed to:

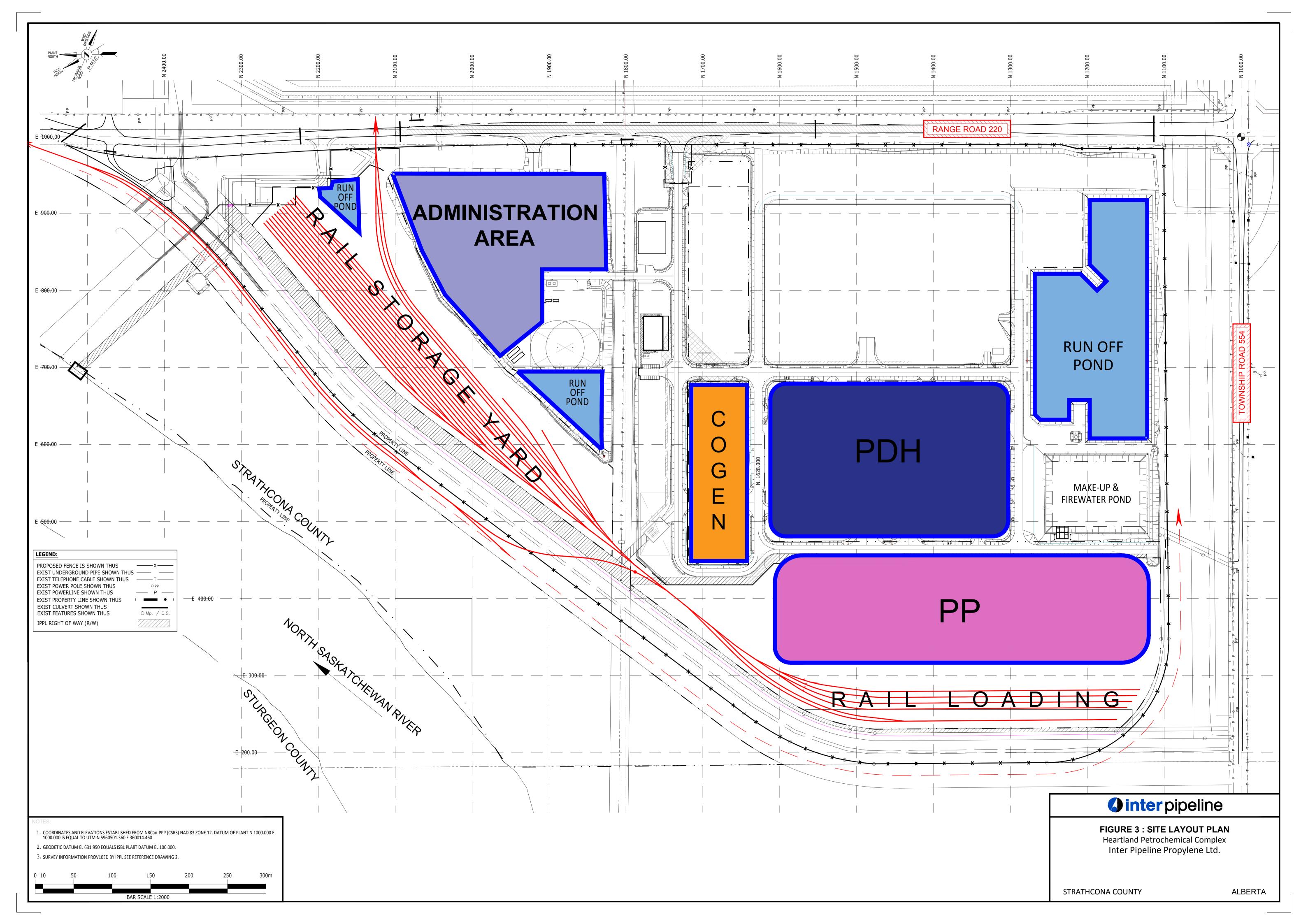
- Receive empty railcars;
- Allow movement of empty railcars to either storage or exchange tracks, cleaning tracks, or loading tracks, as required;
- Clean empty railcars;
- Remove cleaned cars from cleaning tracks and either store in the storage yard or place on loading tracks;
- Remove loaded cars from loading tracks and either store in the storage yard or place on the exchange tracks outside of the Heartland Petrochemical Complex Site for pickup by the rail service provider [Canadian National Railway (CN) and/or Canadian Pacific Railway (CP)];
- Move bad order cars to the repair track and place in the storage yard, cleaning tracks, loading tracks, or on exchange tracks after repair, as required.

Inter Pipeline will maintain a formal Safety Management System for the Project that will outline how environmental and safety matters are to be managed throughout the operation. It will define responsibilities and describe the processes and procedures that will ensure the safety of all Inter Pipeline's employees, contractors, the community, and environment around the rail facilities and within the Project Site. The Safety Management System will also include procedures for the identification of bad order railcars through mandatory inspection of cars at arrival to identify any potential mechanical defect or safety violations. In such cases, the cars will be removed from service until repaired, or set aside on the bad-order track for return to the railcar supplier.

The Heartland Petrochemical Complex will convert propane to stable plastic pellets, which are easy to transport with minimal environmental impact. The polypropylene pellets are not considered Dangerous Goods under the *Dangerous Goods Transportation and Handling Act*.

Traffic during construction and operations will be from the southwest or northeast on Highway 15, then north on Range Road 220, and into the Heartland Petrochemical Complex Site through two newly-constructed access roads. Access to the Project Site will be from designated access points off internal roads within the Heartland Petrochemical Complex Site. Internal traffic will be associated with personnel movements, diesel deliveries for locomotive fuelling, and waste and wastewater hauling.

The Heartland Petrochemical Complex Site will be gated, and the perimeter of the entire property boundary will be fenced to restrict public access and prevent unauthorized entry. Once in operation, the Heartland Petrochemical Complex Site will be staffed 24-hours a day, 7-days a week.





Incidental Project Activities

Utilities

Utilities (water, natural gas, and electricity) for the Project will be supported by utility inputs from the onsite CUB or PDH facility that will be commissioned before the Project. These utilities will be provided via onsite pipeline connections and above and/or below ground cabling.

- Electrical power for the Project (equipment, buildings, onsite lighting, and emergency back-up power) will be supplied from the CUB whose maximum generating capacity is 102 megawatts. The Project will consume maximum 2,980,000 kilowatt hours of electricity per year, assuming operating at the continuous rate to service 17 railcars/day, 7-days/week, operating two 8-hour shifts/day.
- Utility water for the railcar cleaning facility will be supplied from CUB via PDH and PP interconnecting pipe racks. Approximately 38 m³/day of makeup utility water from the CUB will be required to support the Project. This volume is included in the water allocation covered in the Water Act Preliminary Certificate issued for the Heartland Petrochemical Complex.
- Pressure-regulated natural gas for heating the buildings associated with the Project will be provided from CUB via onsite connecting pipeline. The Project will consume maximum 2,320,000 m³/year of natural gas, assuming continuous operation of 24hours/day, 7-days/week.
- Potable water required for domestic use by personnel in the rail loading area will
 either be provided from a connection to the main potable water header from the
 administration area or it will be trucked in directly to the Project Site. The potable
 water source, pipelined or trucked to the Project Site, originates from the EPCOR water
 treatment facility near Edmonton which is the regional supplier to other industry and
 communities in the area.
- Diesel fuel to be used for operating the onsite yard locomotive will be delivered as needed by a third party supplier. There will be no onsite storage of diesel.

Wastewater

The railcar cleaning facility will include a wastewater treatment facility that will treat the railcar wash water. Wastewater will be recycled and reused as much as possible, but eventually it will be trucked by a third party to offsite disposal. Approximately 18.4 m³/day of wastewater will require offsite disposal. Domestic wastewater from the Project will be collected in a septic tank and will be trucked to an offsite disposal facility.

Waste and Intended Disposal

The Project will generate recyclable and non-recyclable solid waste. Sources include waste (household-type garbage) generated by the staff working at the facility (approximately 10 people over two shifts).



All non-recyclable domestic waste will be collected onsite and sent to an approved disposal facility by a third party. Recyclable material will be separated into containers and removed from the Project Site for recycling by a third party.

During construction and decommissioning, debris and unwanted construction waste will be collected and removed from the Project Site by third party and disposed at a licensed facility. During operations, waste will be generated at the railcar cleaning facility, including heel (leftover product in cars) and debris from washing. These wastes will be collected and disposed offsite to a licensed facility by a third party. Solid residue product will be collected and either sold as off-spec product or disposed of via a third party waste disposal contractor. Waste resulting from potential spills or other sources of contamination will be appropriately collected, characterized and removed for offsite disposal by a third party. No hazardous waste will be generated by the Project however provisions have been made for small spills (i.e. lube oil, or hydrocarbon residual from cleaning cars) which may result in contaminated soils or water.

Stormwater

Stormwater runoff from the Project site will be collected and gravity drained through collector ditches and culverts to three runoff ponds located on the Heartland Petrochemical Complex Site. Stormwater runoff from the rail loading facility area will be directed to the runoff pond in the SE area of the Heartland Petrochemical Complex Site that also collects stormwater runoff from the PDH, PP and Cogen area. Stormwater runoff from the south half of the rail storage yard area will be directed to the runoff pond in the central area of the Heartland Petrochemical Complex Site that also takes the stormwater runoff from the Administration area. Stormwater runoff from the north half of the rail storage yard area will be directed to the runoff pond north of the rail storage yard. All three ponds are designed and sized to contain a 1:100-year, 24-hour, storm events. None of the ponds meet dam criteria as defined in the Alberta Environment Dam and Canal Safety Guidelines or any thresholds listed in the *Regulations Designating Physical Activities*. When the stormwater meets discharge criteria it will be released from the runoff ponds through an existing approved outfall structure into the North Saskatchewan River. All runoff water will be contained within the Project Site boundaries and neighbouring properties will not be impacted.

Site Access and Traffic

Traffic during construction and operations will be from the southwest or northeast on Highway 15, then north on Range Road 220, and into the Heartland Petrochemical Complex Site through two existing access roads. Access to the Project Site will be from designated access points off internal roads within the Heartland Petrochemical Complex Site. Internal traffic will be associated with personnel movements, diesel deliveries for locomotive fuelling, and waste and wastewater hauling.

The two main access points from Range Road 220 to the Heartland Petrochemical Complex Site will be gated, and the perimeter of the entire property boundary will be fenced to restrict public access and



prevent unauthorized entry. During construction, activities at the site will follow a 10-hour workday; however, there will be 24-hour security at the site. During operations, the Heartland Petrochemical Complex and the Project Site will be staffed and operated 24-hours/day, 7-days/week.

Rail Connection

Connection of the Project Site to both CN and CP existing railways are possible and commercial discussions are ongoing. The rail yard design will allow for exchange of loaded and empty cars with either and possibly both CN and CP. The estimated number and length of the connections developed by CN and/or CP, within their own right-of-way (ROW) developed outside the boundaries of the Project Site, will include approximately three exchange tracks (siding along connection tracks), with a total length of approximately 6 km and 4 km, respectively.

The rail connection, to be designed and built by the railways (CN or CP), will look for the most optimal route to avoid, as much as possible, the number of utility crossings. These railway providers already have ROW land holdings that don't traverse forested or environmentally sensitive areas. Minimal clearing may be required along the unmaintained portions of the existing railway ROWs which will remove a small amount of migratory bird habitat. Detailed design will also determine if any new atgrade public rail crossings will be required along the new connections. Inter Pipeline will be responsible for construction of tracks within the Project Site. A third party rail operator will oversee the arrival and departure of the railcars from the exchange tracks to the Project Site. CN or CP will not enter the Project Site under normal operating conditions. The AIH area has several rail terminals and a well-established railway system that will facilitate easy access from this area to several markets.

Schedule

Construction of the Project will occur over 14 months and concurrently with construction of the other components of the Heartland Petrochemical Complex that will commence earlier due to longer construction timelines. The anticipated development timelines for the Project are as follows::

Task/Milestone	Timeframe
Construction Start	Q2 to Q4 2020
Construction Complete	Q4 2020
Project Operations Commence (commissioning and start up)	Q2 to Q4 2021
Project Decommissioning	Approximately 2047 based on 25 year lifespan

Construction

The Project Site was cleared in 2015 and topsoil and subsoil was removed and salvaged for reclamation purposes as of 2017, therefore, site preparation activities will be minimal. Regular site maintenance will be ongoing to prevent vegetation from re-growing prior to and during construction. Construction of the



Project will include the installation of subsurface utilities and septic tanks followed by construction of the buildings and rail loading and cleaning infrastructure and installation of the rail tracks. The primary access points from Range Road 220 are already constructed, and the internal roads system and the runoff ponds will be in place prior to commencement of Project construction. The development area around the Heartland Petrochemical Complex Site will be fenced to restrict public access.

Operations

All Project components will be regularly inspected and a comprehensive maintenance plan will be developed to ensure safe operations and compliance with all applicable regulations and with Inter Pipeline's safety policy and procedures. The maintenance plan will include a preventative program of regular, routine maintenance, and systematic inspection of all aspects of the facility operations to prevent equipment failure before it occurs therefore, reduce unplanned downtime and expensive repair costs. Accurate maintenance and servicing records will be kept to document systematic failures and help schedule appropriate replacement frequency.

Decommissioning

The Project is anticipated to operate for a period of 25 years to match the Heartland Petrochemical Complex design criteria. The Project lifespan may be extended, if the complex continues to operate after 25 years, with planned and preventative maintenance and selective replacement of infrastructure as required. At the end of the operating lifecycle, the Project components will be decommissioned in an environmentally sound manner and to a condition outlined in an approved reclamation plan for the Heartland Petrochemical Complex Site. This will include removal of tracks and other surface infrastructure (such as internal roads and buildings) and discontinuation of all underground utilities and services. Efforts will be made to salvage and recycle equipment and materials, as much as possible. If required, remediation activities will be completed post removal of infrastructure. The Project Site will be re-graded and natural drainage will be restored. Salvaged soil will be replaced throughout the Project Site and natural vegetation will be re-established according to decommissioning and reclamation plans approved at that time under the EPEA approval. It is anticipated that decommissioning of the Project will take approximately 1 year.

PROJECT LOCATION INFORMATION

The Project will be located within the Heartland Petrochemical Complex Site in Strathcona County, on the northern limits of the City of Fort Saskatchewan. Located within the AIH, the Heartland Petrochemical Complex Site is zoned for heavy industrial use and is surrounded by other heavy industrial developments. The land was previously used for agricultural purposes. The geographic coordinates and legal land description of the Project are as follows:

- NE and SE quarters of Section 25, Township 55, Range 22, W4M
- Latitude: 53-46'30" N



Longitude: 113-07'48"W

The Project Site is freehold land owned by Inter Pipeline, and the adjacent lands are privately owned. Inter Pipeline owns both the surface and the subsurface rights for the Heartland Petrochemical Complex Site, including the Project Site.

One residence is located within 1.5 km of the Project Site.

The Heartland Petrochemical Complex Site borders the North Saskatchewan River along the northwest boundary. The Project will occupy approximately 10 ha of the overall 94 ha Heartland Petrochemical Complex Site, north of Township Road 554, and west of Range Road 220 (Figure 4).

The Project is located within the area of Treaty 6. There are no First Nation or Métis communities in close proximity to the Project Site; the closest Aboriginal community is 60 km away (Figure 5).

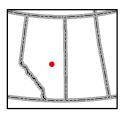
The closest federal lands to the Project Site are Elk Island National Park, approximately 20 km to the southeast; Canadian Forces Base Edmonton located approximately 20 km to the southwest; and the Redwater Helicopter training site, located approximately 17 km to the northeast.

The Project Site is within the Eastern Alberta Plains physiographic region, and falls within the Central Parkland and Dry Mixedwood Natural subregions. No *Environmentally Significant Areas of Alberta* occur within the vicinity of the Project. The Site is within a Key Wildlife Biodiversity Zone, mainly relevant along the North Saskatchewan River. The closest waterbody is the North Saskatchewan River, approximately 0.3 km west of the Project, along the northwest boundary of the Heartland Petrochemical Complex Site. A steep embankment separates the Project Site boundary from the river. This area is a forested riparian buffer and a conservation area along the North Saskatchewan River.

The Project occurs in an area that includes current and historical agriculture and oil and gas activities. There are no known traditional use claims on or in the immediate vicinity of the Project Site that have been identified to date. Records indicate agricultural homesteading on the Project Site and surrounding area dating back to the late 1800s until acquisition by a private resource company in 2013. The private land tenure and agricultural land use appear to limit the possibility of traditional activities being practiced on the Project Site.

Historical Resources Act clearance was received for the Project Site from Alberta Culture and Tourism in October 2013. No known historic resource sites or Aboriginal traditional use sites have been discovered since agricultural activities started in the 1800s and no discoveries were encountered during the civil work conducted at the Project Site to date. To ensure compliance with section 31 of the Historical Resources Act, the Environmental Protection Plan developed by Inter Pipeline for the Project included procedures to follow if a suspected artifact of historical value was discovered. Work is to be suspended immediately at the discovery site and the finding reported to the onsite environmental inspector who would notify the appropriate regulatory authority of the discovery. Work at the discovery site would not





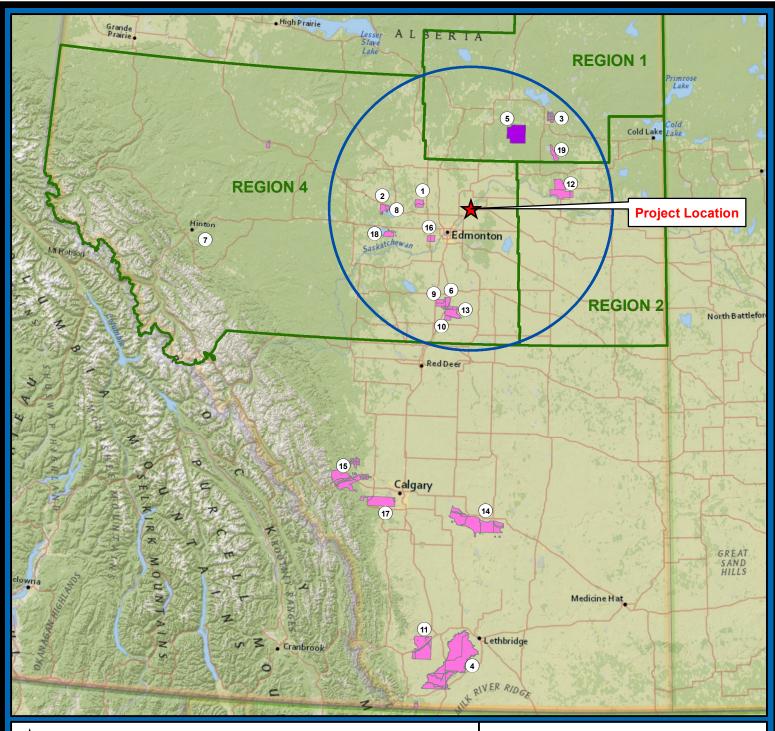


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Figure 4: Site Photo (2017)

Heartland Petrochemical Complex
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Project Location in E 1/2 25-55-22W4M



Metis Nation of Alberta Association (MNAA) Region

Indian Reserve

Metis Settlement



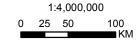
- 1. Alexander First Nation (IR No. 134) 2. Alexis Nakota Sioux Nation (IR No. 133)
- 2. Alexis Nakota Sloux Nation (IR No. 133)
 3. Beaver Lake Cree Nation (IR No. 131)
 4. Blood Tribe (aka Kainai First Nation) (IR No. 148)
 5. Buffalo Lake Metis Settlement
 6. Ermineskin Tribe (IR. No. 138)
 7. Foothills Ojibway First Nation

- 8. Gunn Metis Local #55 9. Louis Bull (IR. No. 138B)
- 10. Montana First Nation (IR No. 139)
- 11. Piikani Nation (IR No. 147) 12. Saddle Lake Cree Nation (IR No. 125)
- 13. Samson Cree Nation (IR No. 137) 14. Siksika Nation (IR No. 146)
- 15. Stoney Nakoda First Nations (IR No. 142, 143, 144)
- 16. Enoch Cree Nation (IR No. 135) 17. Tsuut'ina Nation (IR No. 145)
- 18. Paul First Nation (IR No. 133)
- 19. Whitefish Lake First Nation (IR No. 128) Kelly Lake Metis Settlement (located in British Columbia)

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Figure 5: Aboriginal Communities

Heartland Petrochemical Complex Inter Pipeline Propylene Ltd.



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resume until permission was granted by the Inter Pipeline regulatory specialist. No discoveries were encountered during the clearing and soil stripping activities at the Project Site.

FEDERAL INVOLVEMENT

No federal financial support has been or will be provided in the future from federal authorities to carry out this Project. The Project does not involve the use of federals lands and as such no federal permits, licences, or authorizations are required to carry out the Project.

ENVIRONMENTAL EFFECTS

VEGETATION

The Project Site was cleared of vegetation in 2015 and all topsoil and upper subsoil was removed in 2017. All salvaged soil was relocated at an offsite location owned by Inter Pipeline and will be monitored and maintained for final reclamation purposes. Regular site maintenance will be ongoing to prevent vegetation from re-growing prior to and during construction. Weed control was conducted prior to clearing and stripping and weed monitoring measures are part of the routine inspections and/or maintenance activities during construction.

Inter Pipeline has developed an Environmental Protection Plan, a Key Wildlife Biodiversity Zone Mitigation Plan and a Tree Conservation Plan. These plans provide environmental management practices, mitigation measures and planning tools to conduct work during the construction and operation phases of the project in an environmentally acceptable manner and in compliance with regulatory approvals and commitments made to regulatory agencies and other stakeholders. No new clearing or construction of new accesses and no new disturbance in the forested areas along the North Saskatchewan River are proposed as part of the Project. If construction needs to occur adjacent to the Key Wildlife Biodiversity Zone during timing restrictions, mitigation measures will be developed in consultation with AEP.

Given that the vegetation was cleared and the historical agricultural land use of the Heartland Petrochemical Complex Site, the remaining habitat is considered of low quality. The riparian forested area adjacent to the North Saskatchewan River was not cleared, and will not be altered or used for development.

WETLANDS

All wetlands were removed in 2015, and compensatory mitigation was paid to Ducks Unlimited Canada to provide habitat for their removal. No wetlands were present within the Project Site.

A coordinated approach to surface water runoff management has been applied to address runoff discharge from the entire Heartland Petrochemical Complex Site, including the Project Site, during the construction and operations phases. Surface water runoff will be captured onsite and conveyed through



a series of collector ditches to runoff ponds sized and designed to contain a 1:100-year, 24-hour storm event. The collected runoff will be tested to ensure compliance with limits in the EPEA approval prior to being discharged through an existing outfall into the North Saskatchewan River.

WILDLIFE

A literature review and wildlife sign survey was conducted at the Heartland Petrochemical Complex Site and no SARA-listed species were identified. A wildlife sign survey was also conducted in 2013. The Fisheries and Wildlife Management Information System query identified three historical observations of species of conservation concern: northern pintail (*Anas acuta*), sora (*Porzana carolina*), and Swainson's hawk (*Buteo swainsoni*). Prior to the vegetation clearing and during the field visit, 18 wildlife species were observed or detected. This included: the least flycatcher (*Empidonax minimus*), sora (*Porzana carolina*), boreal chorus frog (*Pseudacris maculate*), wood frog (*Lithobates sylvatica*), deer (*Odocoileus* sp.), moose (*Alces alces*), red-tailed hawk (*Buteo jamaicensis*), American robin (*Turdus migrtorius*), woodpeckers (*Picoides* spp.), five species of sparrow, and three warbler species.

Since the vegetation was cleared and given the historical agricultural land use of the Project Site, the remaining habitat is considered of low quality.

GROUNDWATER

Inter Pipeline developed a groundwater monitoring plan that was approved by the AEP. The plan outlines groundwater monitoring measures around and on the Project Site prior to and during the operation of the Heartland Petrochemical Complex, including the Project.

Baseline groundwater assessment was completed in 2013 and 2015 to assess regional and site-specific hydrogeology, groundwater depth and flow direction, and current groundwater quality at the Heartland Petrochemical Complex Site. The regional geology consists of a sequence of Quaternary deposits overlying bedrock of Cretaceous age. The regional hydrogeology of the northeast section of the Edmonton Area (including the Project Site) is represented by the regional aquifer of the Empress Formation located within the Beverly Channel. Regional groundwater flow is generally toward the Beverly Channel and the North Saskatchewan River, which are hydraulically connected and the water levels in the channel vary with river water levels. The subsurface conditions encountered across the Heartland Petrochemical Complex Site are generally consistent with the regional subsurface conditions. Groundwater samples collected during the field investigation indicated no issues of environmental concern, and the slight exceedance in some parameters were attributed to dissolved nitrate from former agricultural activities, fertilizer application, and to dissolved iron and manganese that are naturally elevated in the area.

AIR

Sources of emissions during Project construction will include fugitive dust from movement of equipment and disturbance of materials and soils, and exhaust from mobile equipment. These emissions are anticipated to be negligible and temporary in nature. Mobile equipment used during construction is



expected to include excavators, dozers, cranes, trucks, etc., predominantly using diesel fuel. Key contaminants from the mobile equipment exhaust would include carbon dioxide (CO_2), nitrogen oxides (NO_x), carbon monoxide (CO_2), hydrocarbons and particulate matter ($PM_{2.5}$). Construction of the Project is expected to take 14 months. If required, mitigation of onsite dust emissions associated with earth moving and construction work will be addressed through appropriate dust suppression measures outlined in the Dust Control Plan developed for the Heartland Petrochemical Complex Site. Similar emissions would be experienced during decommissioning (dismantle and removal of the rail facility components), depending on the extent of re-grading required with the site reclamation. During operations, there will be emissions from the locomotive or Trackmobile required to move railcars around the Project Site, potential emissions from the gas-fired steam boiler used as part of the railcar cleaning facility and potential fugitive emissions of particulate matter associated with loading railcars. Diesel combustion in the train engine will result in emissions of CO_2 , NO_x , CO, hydrocarbons and $PM_{2.5}$. The Project will endeavour to improve energy efficiency, where possible, and increase energy resource management practices to assist in reducing the total Project emissions.

An air dispersion modeling assessment was completed for the Project and included the rail facility emissions sources: two boilers that provide hot water and steam for the railcar cleaning facility, an infrared heater for drying the cars in the railcar cleaning facility, and a space heater mounted at the ceiling of the locomotive shop. The boilers and the heaters are natural gas fired. Air emissions from these sources consist of products of natural gas combustion that are primarily composed of nitrogen, carbon dioxide, and water vapours with trace amounts of NO_X , $PM_{2.5}$ and CO. Trace emissions of sulphur dioxide (SO_2) from the heaters and the boilers might be present resulting from a small amount of hydrogen sulphide in natural gas.

Non-point emission sources like diesel combustion emissions from locomotive operations were also included as part of the air emission sources modeled for the Project. The US EPA emission factors for locomotives were used to calculate NO_x , CO and $PM_{2.5}$ combustion emissions from the non-point emission sources. In addition to the yard locomotive, the model considered the emissions from a Trackmobile to account for a potential scenario of requiring additional resources during operation. The yard locomotive and Trackmobile were also very conservatively assumed to operate continuously for the purposes of the air assessment.

The results of the air quality assessment indicate that predicted ground-level concentrations of NO_2 , CO, $PM_{2.5}$, and SO_2 associated with the Project are well below the Alberta's Ambient Air Quality Objectives and a minor contributor to the existing background emissions associated with all the existing and approved regional emission sources in the Project area.

GREENHOUSE GAS

One of the considerations in selecting process technology and designing the Heartland Petrochemical Complex was to minimize the environmental footprint and emissions. Both the PDH and PP facilities use proven technology that guarantees low CO_2 and NO_x emissions. Greenhouse gas emissions are



significantly reduced by minimizing natural gas consumption through the recovery of by-product streams from the PDH process that are collected into the fuel gas system and used as fuel in the CUB to produce steam and power. The onsite cogeneration of steam and electricity is highly energy efficient with a low energy emission intensity compared to fossil fuel-fired power stations. All components within the Heartland Petrochemical Complex are highly integrated allowing for efficiencies and effective

Operation of the Project is anticipated to emit approximately 1,300 tonnes/year of carbon dioxide equivalent (CO_2 eq). The estimated GHG emissions for both the construction and operations phases are very low and will not trigger provincial or federal reporting thresholds.

NOISE

There will be short-term temporary noise increases during construction and decommissioning of the Project. Construction schedule will be maintained within the hours of operation stipulated in the Strathcona County Noise Bylaw (7:00am – 10:00pm) and stakeholder notification will be provided in advance of any activities associated with excessive noise.

Noise during operations will be typical of a rail yard facility, and will include idling engines, wheel squeal, reversing engines, and clanking of cars as they are decoupled and connected. Noise may also be attributed to the operation of stationary components within the Project, such as the pneumatic conveyor system used to deliver pellets from hoppers to the loading building where the pellets will be loaded into railcars, and the railcar cleaning building, where railcars will be inspected, vacuumed, washed, and dried. A noise impact assessment will be completed to ensure that operation of the Project and the overall Heartland Petrochemical Complex will comply with applicable regulatory requirements and regional plans.

FISH AND FISH HABITAT

A field survey and a wetland assessment completed in 2013 determined that no fish habitat occurs within the Project Site. No wetlands were identified within the Project Site.

Fish and fish habitat occurs in the North Saskatchewan River, approximately 300 m away from the Project Site. It is highly unlikely the Project would have adverse effect on fish, or fish habitat as no activities within a waterbody are proposed as part of the Project. No change in surface water or groundwater quality is anticipated as a result of the construction or operation of the Project. The polypropylene plastic pellets are stable inert solids that have very low environmental impact potential.

MARINE PLANTS

No marine plants, as defined by the *Fisheries Act*, occur within the vicinity of the Project; therefore, no adverse impacts to marine plants are anticipated.



MIGRATORY BIRDS

Alberta's Fisheries and Wildlife Management Information System (FWMIS) was queried on June 3, 2013, in support of development on the lands within the Heartland Petrochemical Complex Site. Additionally, a wildlife field survey was conducted on June 4, 2013, and a winter track survey in 2013. The database search and field survey did not identify any suitable habitat for migratory species listed. However, the database search did contain two historic observations of migratory birds and the field survey from 2013 observed both sora (*Porzana carolina*) and northern pintail (*Anas acuta*). While the winter track survey did not observe individuals, it did confirm the presence of pileated woodpecker (*Dryocopus pileatus*).

After the review of the area for migratory bird habitat, the Project Site was cleared with consideration to avoid the breeding bird nesting season (April 20 to August 25, 2015) and any additional land clearing activities, if required, will be done outside of the restricted activity period. No further clearing is required or anticipated as part of Project construction.

A recent site visit was conducted on May 17, 2018 by a qualified avian biologist to address recent changes in species statuses. Historical wildlife species observations increased from two migratory bird species to eight. The additional species include: Baltimore oriole (*Icterus galbula*), barn swallow (*Hirundo rustica*), black-backed woodpecker (*Picoides arcticus*), black-throated green warbler (*Setophaga virens*), eastern kingbird (*Tyrannus tyrannus*), eastern phoebe (*Sayornis phoebe*), and least flycatcher (*Empidonax minimus*). Northern pintail is no longer a species of management concern and was downgraded from sensitive to secure and therefore no longer shows up on a FWMIS search. Barn swallow is now listed under SARA as threatened.

There will be an increase in noise and vibration levels during construction and operation of the Project, including that of passing locomotives. Studies have shown that chronic exposure to high noise levels can, among other effects, mask avian vocal communications, increase the risk of predation, and cause birds to abandon nests or otherwise modify their behaviour; however, studies have also shown that some birds (e.g., red-tailed hawk [Buteo jamaicensis], American wigeon [Anas Americana] — these species were not observed on the Project Site, but are potentially present) habituate to high noise levels in at least some situations. It has also been shown that some bird (e.g., white-throated sparrow [Zonotrichia albicollis] - this species was not observed on the Project Site, but is potentially present) species can compensate for the masking effect of noise through shifts in vocal amplitude, song and call frequency, and component redundancies, as well as temporal shifts to avoid noisy periods.

Construction and operation activities could modify the behaviour and reduce presence of birds that would typically nest in the riparian forested area along the North Saskatchewan River adjacent to the Project Site. However, since the Project Site is buffered by treed areas and a fair distance from other large industrial facilitates (the closest large industrial facility is approximately 1 km to the northeast), and the fact that these facilities have already operated in the area for decades, it is anticipated that the construction and operation of the Project will not impact birds cumulatively.



The undeveloped riparian forested area between the Project Site boundary and North Saskatchewan River will be maintained, as much as possible. This forested buffer does provide suitable habitat for migratory birds; however, there is an additional approximately 90 m distance (30 m existing CP ROW, 30 m existing pipeline ROW, 20 m proposed pipeline ROW, and 10 m between proposed ROW and rail storage yard) between the suitable migratory bird habitat and the bulk of the rail activity (i.e., in the rail storage yard). One trip per day (drop off empty cars and pick up loaded cars) is anticipated through the interconnect lines (CP Interchange tracks A and B on Figure 4) to be built by CP in the existing CP ROW. Therefore, minimal and brief increase in noise is expected during operations of the Project which likely will have little to no impact on nearby migratory birds either breeding, foraging, or roosting.

POTENTIAL CHANGES TO FEDERAL, PROVINCIAL OR OUTSIDE ALBERTA LANDS

The Project is not anticipated to have any environmental effects on federal lands. The Project is not developed on or near federal lands. The Project is located 531.7km from the United States border, 204.4 km from the Saskatchewan border and 442.8 km from the British Columbia border. The Project will not have any effect on air or noise emissions extending to federal lands. No changes to the environment will occur, as a result of carrying out the Project, in a province outside of Alberta, or outside of Canada.

PREDICTED EFFECTS ON ABORIGINAL PEOPLES

The closest First Nation or Métis communities are approximately 60 km away. To date, no information has been identified that indicates recent historical traditional or current land use or occupancy of the Project Site.

The Project is located on private land previously disturbed by agricultural activities. It was rezoned for heavy industrial land use in 2013 when it was purchased by Inter Pipeline for the development of the Heartland Petrochemical Complex. The Project Site is located within the AIH, an area dedicated to heavy industrial activities and development.

Historical Resources Act clearance was received for the Project Site from Alberta Culture and Tourism in October 2013. No known historic resource sites or Aboriginal traditional use sites have been discovered since agricultural activities started in the 1800s and no discoveries were encountered during the civil work conducted at the Project Site to date. To ensure compliance with section 31 of the Historical Resources Act, the Environmental Protection Plan developed by Inter Pipeline for the Project included procedures to follow if a suspected artifact of historical value was discovered. Work is to be suspended immediately at the discovery site and the finding reported to the onsite environmental inspector who would notify the appropriate regulatory authority of the discovery. Work at the discovery site would not resume until permission was granted by the Inter Pipeline regulatory specialist. No discoveries were encountered during the clearing and soil stripping activities at the Project Site.



Based on the above, no impacts are anticipated from the Project to Aboriginal health and socioeconomic conditions, current use of lands and resources for traditional purposes, physical and cultural heritage, and on any structure, site or thing that is of historical, archaeological, paleontological or architectural significance.

PROPONENT ENGAGEMENT AND CONSULTATION WITH ABORIGINAL GROUPS

The Project Site is located within Treaty 6 territory and Métis Nation of Alberta Region 4 (Figure 5). The Project Site is privately owned by Inter Pipeline and has been freehold land since early 1800s. No consultation requirements with Aboriginal groups have been identified for the Project as it relates to municipal or provincial approval of the industrial railway, or EPEA licensing for components of the Heartland Petrochemical Complex. An assessment request was submitted to the Aboriginal Consultation Office for the Project, and on October 31, 2017 it was determined that no First Nation consultation was required for the Project for the purpose of Alberta approvals.

Based on the recommendation from the Canadian Environmental Assessment Agency and other recently proposed rail yard projects in the Alberta Industrial Heartland, the following 23 Aboriginal groups were notified by registered mail on January 12, 2018, and by email on January 15, 2018 of Inter Pipeline's intent to submit this CEAA Project Description:

- Alexander First Nation
- Alexis Nakota Sioux Nation
- Beaver Lake Cree Nation
- Buffalo Lake Métis Settlement
- Enoch Cree Nation
- Ermineskin Cree Nation
- Foothills Ojibway First Nation
- Gunn Métis Local #55
- Kelly Lake 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
- Saddle Lake Cree Nation



- Samson Cree Nation
- Stoney Nakoda Nation (Bearspaw First Nation, Chiniki First Nation, and Wesley First Nation)
- Tsuut'ina Nation
- Whitefish Lake First Nation #128
- Blood Tribe (Kainai Nation)
- Piikani Nation
- Siksika Nation

Inter Pipeline recognizes the Aboriginal and Treaty Rights of the eleven Treaty 6 Aboriginal groups within the Project Site area. Inter Pipeline is aware that the Aboriginal and Treaty Rights Information System indicates that five Treaty 7 Aboriginal groups, Foothills Ojibway First Nation, and three Métis Settlements have also been identified as having Aboriginal or Treaty Rights within the region. Inter Pipeline recognizes that these Aboriginal groups have asserted their Aboriginal and/or Treaty rights to the Project Site area. No Project site-specific information that demonstrate traditional or current land use or occupancy of the Project Site has been identified or provided to Inter Pipeline, to date, or by any of the Treaty 6 or Treaty 7 Aboriginal groups and Métis Settlements. There is no evidence that Aboriginal people had access rights on the Project Site. The Project does not limit Aboriginal Peoples access to fishing on the North Saskatchewan River. The lands owned by Inter Pipeline are characterized by a very steep terrain to the river and this would not have been a physical access point to the river. The Project does not impact any known hunting areas or wildlife habitat where Aboriginal Peoples can exercise their Aboriginal or Treaty right to take game.

Inter Pipeline has had economic opportunity discussions with Enoch Cree Nation and Alexander First Nation about the Heartland Petrochemical Complex, including the Project. No concerns were expressed by these two First Nations with the Project. Other Aboriginal groups, including those within the notification radius, will have the opportunity for potential economic participation in the Heartland Petrochemical Complex through a process developed by Inter Pipeline.

CONSULTATION WITH THE PUBLIC AND OTHER PARTIES

From the inception of development activities within the Heartland Petrochemical Complex Site, a stakeholder engagement plan was developed outlining the primary communication methods to deliver project information to the public and other stakeholders. The consultation strategy was selected in consultation with AEP and the AUC prior to the submission of the Industrial Approval Application for the PDH and CUB. A consultation radius consistent with AUC Rule 007 was used for notification purposes. Engagement began in March 2013 when the PDH project was announced by Williams Energy Canada ULC and Williams Canada Propylene ULC; however, since the September 2016 acquisition of Williams by Inter Pipeline, all stakeholder engagement has been led by Inter Pipeline. Stakeholder engagement for





the CUB project was completed by ATCO Power Canada Ltd. up until May 12, 2017 when Inter Pipeline assumed ownership of the CUB. Inter Pipeline notified all previously engaged stakeholders of the change in ownership on June 23, 2017.

Engagement has been and continues to be conducted with all identified stakeholders to ensure project updates are distributed to all interested parties and all questions and concerns are promptly addressed. Changes to the PDH project and schedule progress were communicated to all stakeholders through annual updates in 2015, 2016, and 2017. In the past 6 months, several public presentations were given by Inter Pipeline staff involved with the project. On February 8, 2018, Inter Pipeline held an open house at the Josephurg Community Hall. Invitations were extended to all previously engaged stakeholders within a 2 km radius of the Project Site. In addition, municipalities surrounding the Project Site, regional agencies, government groups, and the Aboriginal groups that responded to the notification were invited. Information on all components of the Heartland Petrochemical Complex, including the Project, was provided and the regulatory process (including this CEAA submission) was discussed for each component. Various questions were addressed and all inquiries are being followed-up on.

The overall feedback to date has been positive, with both the public and the local municipalities expressing support. The Heartland Petrochemical Complex received a support letter from the mayor of Strathcona County. Inter Pipeline is committed to maintaining an open and meaningful stakeholder engagement program throughout the life of the Project and recognizes that consultation is an on-going process.