

Proposed Amendment to Strathcona County

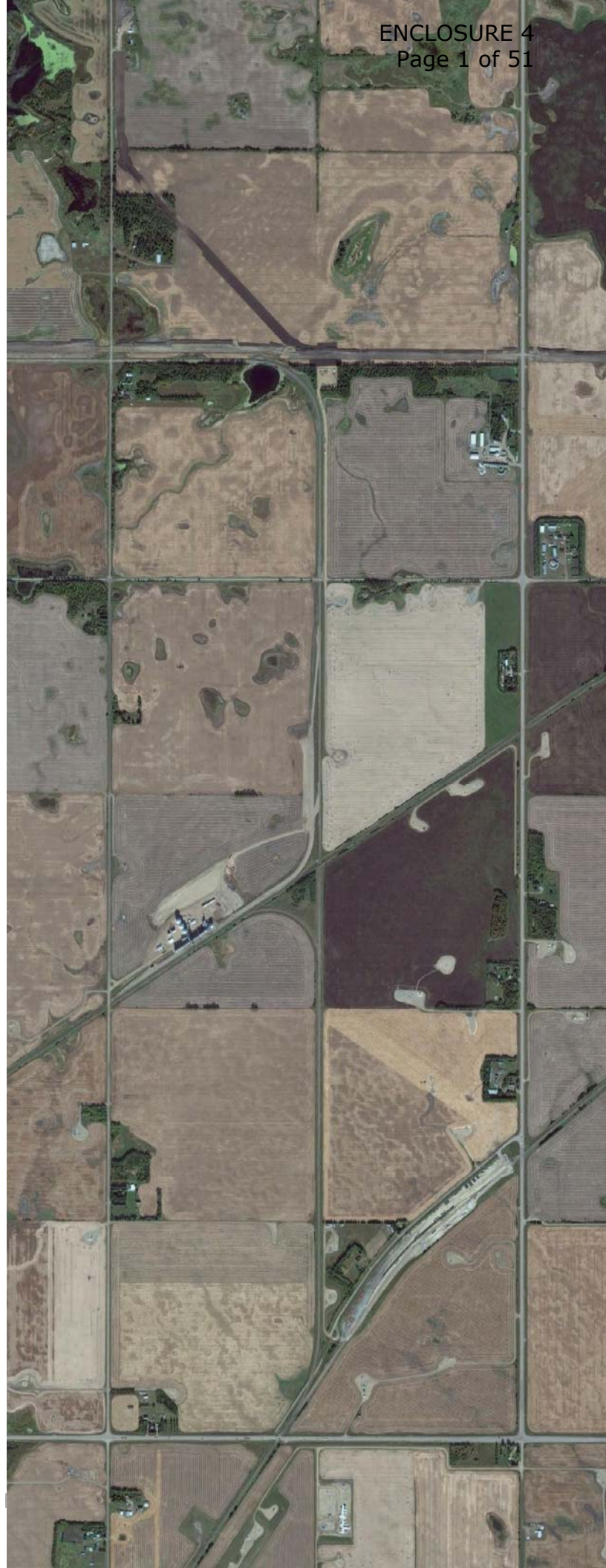
Alberta's Industrial
Heartland Area
Structure Plan Bylaw
65-2001

*For part of the east half 26-55-21W4M & the
west half of 25-55-21 W4M*

Submitted by: TransCanada PipeLines Limited

Submitted to: Strathcona County

Updated October 6, 2015



EXECUTIVE SUMMARY

Proposed Strathcona County Bylaw Amendments

The Property

TransCanada PipeLines Limited (TransCanada) is the registered owner of part of the east half of section 26-55-21-W4M and the west half of section 25-55-12-W4M (Property) containing a total of 233.26 hectares (576.37 acres) (see Map 1).

The Bylaw Amendment Applications

TransCanada is applying to Strathcona County for three bylaw amendments (Amendment Applications). The Amendment Applications are as follows:

1. An application to amend the Strathcona County Alberta's Industrial Heartland Area Structure Plan (ASP) Bylaw 65-2001 by,
 - a. changing the designation for the Property on Figure 2 from Transition Policy Area to Heavy Industrial Policy Area (see Map 2), and
 - b. amending the ASP text to establish the need for a risk assessment within the Transition Policy Area (ASP Amendment Application).

The ASP Amendment Application is provided under this cover.

2. An application to amend the Strathcona County Municipal Development Plan (MDP) by changing the designation for the Property on MDP Map #12 from Agri-Industrial Transition Policy Area to Industrial Heavy Policy Area. Please refer to the MDP Amendment Application document provided under separate cover.
3. An application to amend the Strathcona County Land-Use Bylaw 6-2015(LUB) by changing the designation for the Property on the Rural Land Use District Map from Agricultural General (AG) to Heavy Industrial Heartland (IHH). Please refer to the LUB Amendment Application document provided under separate cover.

Purpose

The purpose of the Amendment Applications is to facilitate a subsequent development permit application to develop a rail terminal and crude oil trans-loading facility (together

Key Points:

- ❖ TransCanada is applying for amendments to three County bylaws to permit future development of a rail terminal.

referenced as “rail terminal”) on the Property. The rail terminal, once constructed, would receive crude oil from the approved TransCanada TC Terminals facility (TC Terminals) from new interconnecting pipelines to the Property. The crude oil would then be transferred onto railcars and shipped to markets across the North American rail network by Canadian National Railway (CN Rail) and/or Canadian Pacific Railway (CP Rail), both of which have direct access to the Property.

The Strategic Context

TransCanada is making significant investments in oil transportation infrastructure in Alberta, with a focus on Alberta’s Industrial Heartland as a key oil transportation hub. Alberta’s Industrial Heartland is also an important and long-standing hub for CN Rail and CP Rail. Development of a rail terminal on the Property would complement TransCanada’s pipelines and facilities currently in development in Alberta’s Industrial Heartland, and is a key component of a larger strategy to improve access to markets throughout North America for important Canadian crude oil resources.

The transportation of crude oil by rail offers value to shippers by offering the flexibility to access markets across North America to meet demand. The rail terminal would be a major contributor to the continued success of Alberta’s Industrial Heartland by complimenting pipeline infrastructure and providing a new transportation option for shippers.

The Supporting Documentation

This ASP Amendment Application contains supporting information that explains existing natural and human features on the Property, the conceptual rail terminal layout, and additional relevant considerations for the Property and surrounding areas. Supporting documents are included under separate cover as Appendices to this ASP Amendment Application. These supporting documents include reports prepared with respect to risk assessment, desktop biophysical and geotechnical assessments, transportation impacts, and a conceptual storm water management assessment. These studies were conducted considering a conceptual layout and scope for a rail terminal on the Property, and have been prepared at the level of detail commensurate to the policy-level examination for a bylaw amendment application. It should also be noted that the proposed land use

concept may be refined when the rail terminal proceeds to the development permit application stage.

Most of the explanatory information for the Amendment Applications is contained within this ASP Amendment Application document and its Appendices. The separate MDP and LUB amendment applications will therefore refer to this ASP Amendment Application as the primary source of supporting information.

Public Engagement

TransCanada has developed a Public Engagement Plan (PEP) for the Amendment Applications, which was reviewed and subsequently approved by Strathcona County in April, 2015. In accordance with the PEP, TransCanada has been taking steps to provide information, communicate opportunities to participate in the process, solicit feedback and facilitate ongoing communication. In particular, TransCanada provided information to the public through open houses on May 11, 2015 and September 22, 2015, mailed information packages to neighbouring landowners, and a website. The full PEP document plus a Public Engagement Summary Report dated October 1, 2015, including feedback received are included as Appendix B to this ASP Amendment Application.

Conclusion

The Amendment Applications closely align with the County's overall strategic direction and vision found within the County's Municipal Development Plan, as well as its on-going support of Alberta's Industrial Heartland. Further, TransCanada submits that the Amendment Applications are consistent with the original intent of the ASP, which is to concentrate heavy industrial land uses north of Highway 15, and therefore that the Property is indeed suitable for this intended use. TransCanada therefore requests that the County grant this ASP Amendment Application (and ultimately all of the Amendment Applications) in order to facilitate the strategic and regionally-complementary development of a rail terminal at the Property.

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APPENDICES

(Compiled under separate cover and not forming part of the bylaw amendments)

- A. Site-Specific Risk Assessment, 2014 and Mitigations
- B. Approved Public Engagement Program, 2015, and Public Engagement Summary Report, October 1, 2015
- C. Certificates of Title
- D. Desktop Biophysical Assessment, and Field Reconnaissance Report 2015
- E. Desktop Geotechnical Assessment, 2015
- F. Transportation Impact Assessment, 2015
- G. Conceptual Storm Water Management Assessment, 2015

1 BACKGROUND

1.1 Introduction to the Proposed ASP Amendment Application

This document is TransCanada PipeLines Limited's (TransCanada) application to Strathcona County Council to amend the Strathcona County Alberta's Industrial Heartland Area Structure Plan Bylaw 65-2001 (ASP). This ASP amendment application (ASP Amendment Application) applies to part of the east half of section 26-55-21 W4M, and the west half of section 25-55-21 W4M (Property) containing a total of 233.26 hectares (ha) (576.37 acres) (see Map 1).

This ASP Amendment Application proposes to change the designation for the Property on Figure 2 of the ASP from Transition Policy Area to Heavy Industrial Policy Area (see Map 2). Further, a text amendment to the ASP establishing the need for a risk assessment within the Transition Policy Area is suggested. The purpose of the ASP Amendment Application is to facilitate a subsequent development permit application to construct a rail terminal and crude oil trans-loading facility (together referenced as "rail terminal") on the Property.

The rail terminal, once constructed, would receive crude oil from the approved TransCanada TC Terminals facility (TC Terminals) from new interconnecting pipelines to the Property. The crude oil would then be transferred onto railcars and shipped to markets across the North American rail network by Canadian National Railway (CN Rail) and/or Canadian Pacific Railway (CP Rail), both of which have direct access to the Property.

The ASP Amendment Application provides information associated with the Property, including existing natural and human features, proposed future land-use features and the conceptual rail terminal, and relevant considerations for the Property and surrounding areas. Associated supporting reports and studies as required by Strathcona County policies are included under separate cover as Appendices to this ASP Amendment Application. These supporting documents include technical background information with respect to risk assessment, desktop biophysical and geotechnical assessments, transportation impacts, and conceptual storm water management

Key Points:

- ❖ This ASP amendment proposes changing the designation on the property from *Transition Policy Area* to *Heavy Industrial*.
- ❖ The development of a rail terminal is a key component of a larger strategy to improve access to markets throughout North America.

assessment. Also included are the approved Public Engagement Program (PEP) and Public Engagement Summary Report as of October 1, 2015.

TransCanada has concurrently submitted complementary amendment applications to the Strathcona County Municipal Development Plan (MDP) and the Strathcona County Land-Use Bylaw (LUB) relative to the Property under separate cover. This ASP Amendment Application document serves as the primary reference document and, where applicable, provides supporting information for all three bylaw amendment applications (Amendment Applications).

If the Amendment Applications are passed by Council, TransCanada intends to subsequently submit an application for a development permit to construct a rail terminal. It should be noted that the proposed development concept will be refined when the rail terminal proceeds to the development permit application stage and additional detailed information would be provided at that time.

In order to develop a rail terminal, TransCanada will also undertake future applications for the connecting pipelines and the rail terminal to the appropriate regulatory bodies (e.g., Alberta Energy Regulator (AER)). Specific assessments will be required and will be undertaken as those applications work through the applicable regulatory processes. TransCanada will keep the County informed of these separate regulatory processes as they unfold.

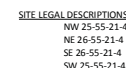
1.2 Regional Infrastructure Developments

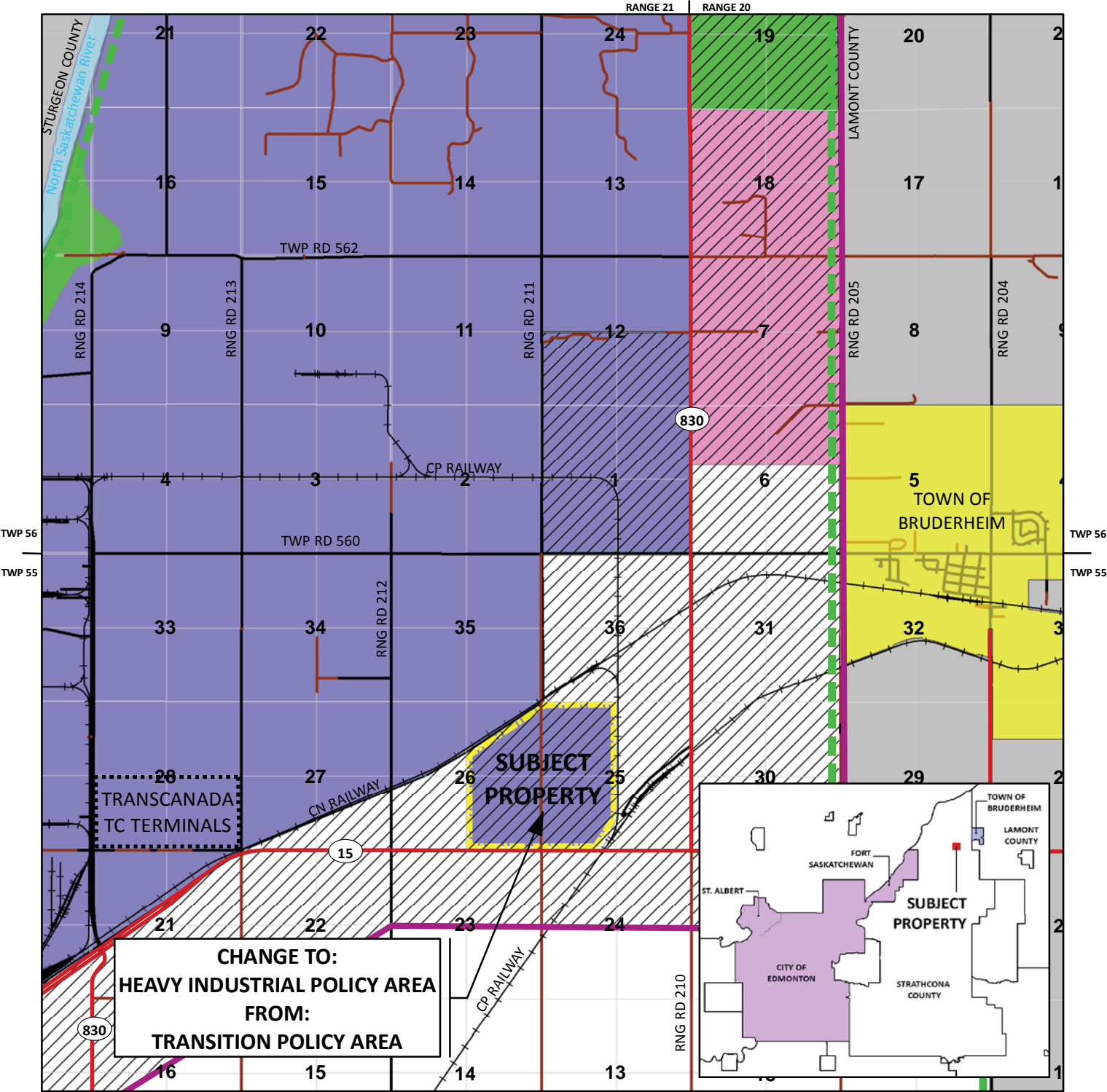
Since its approval in 2001, the area covered by the ASP has experienced substantial land acquisition and industrial development activity. TransCanada is making significant investments in Alberta's Industrial Heartland that will further expand its liquids transportation capabilities, as well as leverage its extensive operating experience in Alberta. Over the past several years, TransCanada has been developing the following four major projects in Alberta's Industrial Heartland area:

- TC Terminals Project – a tank storage facility to provide crude oil batch accumulation and terminal services for the Heartland Pipeline, other pipelines and the rail terminal. Construction of TC Terminals began in the fall of 2014.



- SCALE 1:60,000**

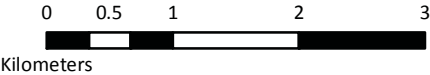




LEGEND

- | | |
|-------------------------------------|-------------------------------------|
| PROPOSED ASP BYLAW AMENDMENT | STRATHCONA COUNTY BOUNDARY |
| HEAVY INDUSTRIAL POLICY AREA | HEARTLAND INDUSTRIAL ASP BYLAW AREA |
| LIGHT/MEDIUM INDUSTRIAL POLICY AREA | HIGHWAY |
| ENVIRONMENTAL POLICY AREA (EPA) | COUNTY PAVED ROAD |
| AGRICULTURE POLICY AREA | COUNTY GRAVEL ROAD |
| TRANSITION POLICY AREA | RAILWAY |
| TOWN OF BRUDERHEIM | |

SCALE 1:60,000



SITE LEGAL DESCRIPTIONS
NW 25-55-21-4
NE 26-55-21-4
SE 26-55-21-4
SW 25-55-21-4



- TC Terminals Interconnect Projects – future pipelines to connect various sources of crude oil in Alberta’s Industrial Heartland area to TC Terminals.
- Grand Rapids Pipeline Project – a dual pipeline system to transport up to 900,000 barrels per day (bbl/d) of crude oil and 330,000 bbl/d of diluent approximately 460 kilometers (km) between the producing area northwest of Fort McMurray and the Alberta’s Industrial Heartland and Edmonton regions. Construction of segments of the Grand Rapids Pipeline began in the fall of 2014.
- Heartland Pipeline Project – a 200 km crude oil pipeline to assist in the movement of crude oil from Alberta’s Industrial Heartland area to the Hardisty, Alberta hub. The Heartland Pipeline was approved by the AER in May, 2015.

As a step in the development of TC Terminals, Strathcona County amended the LUB to Heavy Industrial (IH) from Agricultural General (AG) in 2013 for land owned by TransCanada in S ½ 28-55-21-W4M, located approximately 2.5 km (1.5 miles) west of the Property (see Map 1). In April, 2014 a development permit application was submitted to construct the TC Terminals facility and was conditionally approved by the County in August, 2014. Earthworks began shortly thereafter.

The rail terminal would integrate with and complement other energy storage and transportation infrastructure projects currently underway by TransCanada in Alberta’s Industrial Heartland. Together, these projects will help link Canadian crude oil resources in northern Alberta to markets in Canada and the United States.

2 ALBERTA'S INDUSTRIAL HEARTLAND ASP POLICY ASSESSMENT

2.1 Proposed ASP Bylaw Amendment

This ASP Amendment Application requests an amendment to Figure 2 of the ASP to change the designation for the Property from Transition Policy Area to Strathcona Heavy Industrial Policy Area. In addition, this ASP Amendment Application asks that Section 2.3.3 of the ASP be deleted and replaced with the following text:

"2.3.3 Strathcona: Heavy Industrial Policy Area

Same as 2.3.2 Scotford: Heavy Industrial Policy Area with added policy as described in the following sections.

Strathcona: Heavy Industrial Policy Area Transition Zone Coverage Intent

The intent of this transition zone is to mitigate risk between Heavy Industrial uses in the Strathcona Heavy Industrial Policy Area and population concentrations. The overlay is intended to maintain an acceptable level of risk of a fatality due to an industrial accident in accordance with accepted methodologies.

Objective

Ensure that risk associated with heavy industrial uses does not pose an unacceptable level of risk of fatality beyond the boundary of the subject land use due to an industrial accident.

Guidelines

Applications for a heavy industrial land use or a development permit application within this transition zone shall prepare a risk assessment in accordance with accepted methodologies.

The acceptable level of risk of a fatality resulting from an industrial incident of 1×10^{-6} shall not extend past the property boundary."

Site-specific activities including road and rail traffic, noise, vibration, smoke, dust, odour, fumes, and lighting shall be evaluated at the time of development permit in consultation with Strathcona County so that nuisance at the southern boundary of the Transition Zone is mitigated to an appropriate level that is to the satisfaction of Strathcona County through implementing applicable industry standards, best practices and regulatory requirements.

2.2 Existing ASP Policy

Development of the ASP began in September, 1999, shortly after the formation of Alberta's Industrial Heartland Association (AIHA). The AIHA was established to develop and promote the Heartland region, and it was acknowledged that planning was needed to guide growth in the area. Thus, the ASP was developed in consultation with AIHA and designed to be complementary to the land use concepts prepared by the three directly-adjacent municipal partners of AIHA, being Lamont County, Sturgeon County, and the City of Fort Saskatchewan. The ASP was given third reading by Strathcona County Council on June 26, 2001.

It is recognized in the Background of the ASP, Section 1.1, that

"Alberta's Industrial Heartland is one of Canada's largest processing centres for oil sands, petroleum, petrochemicals and chemicals. The Heartland area provides an important processing link from the Athabasca Oil Sands in northeastern Alberta to market destinations in North America and overseas".

It is stated in Section 2.0 of the ASP, Land Use Concept, that

"[t]he plan provides the basis upon which the County can guide the future planning and development of lands within the context of processing, manufacturing and eco-industrial development at a global scale."

The ASP Amendment Application requests Council to extend the Strathcona: Heavy Industrial Policy Area south across the CN Rail line to include the Property. This Heavy Industrial Policy Area is described on page 15, Section 2.3.3 of the ASP, which then references Section 2.3.2 Scotford: Heavy Industrial Policy Area as containing the same policy.

The intent of the Scotford: Heavy Industrial Policy Area is stated on page 12, Section 2.3.2 of the ASP as follows:

“The basic intent of the Heavy Industrial Area is to accommodate heavy industry such as petroleum processing and manufacturing, oil and gas refining, and directly associated support service industries. The latter could include cogeneration power facilities, air separation units and carbon dioxide purification plants. Extensive agricultural operations may also be permitted to operate in the area. The accommodation of these activities will be done in ecologically and economically sound ways. This will allow for processing, manufacturing and servicing industries that are seeking enhanced environmental and economic performance to work collaboratively in managing environmental and resource issues including energy, water, air and materials. Intensive livestock operations (may) be permitted on a restricted basis.”

Policy objectives are then identified within this Heavy Industrial Policy Area on Page 12 of the ASP as follows:

- “To accommodate heavy industry in an environmentally sound and economically efficient manner.
- To accommodate heavy industrial uses in areas that are characterized by low population densities.
- To maintain appropriate setbacks between industrial activities and other activities present in the area.
- To encourage maintenance and incorporation of agricultural activities with the heavy industrial activities in mutually compatible ways.
- To discourage the intensification of residential development.”

Following these Heavy Industrial Policy Area objectives, policy statements are provided on pages 12 to 15 of the ASP that specify land-use activities, and guidelines to accompany those activities. These activities and guidelines contemplate a heavy industrial use such as that as proposed by this ASP Amendment Application.

Discussion applicable to the Transition Policy Area is located in the ASP on page 16, 2.3.6 Transition Zone: Light/Medium Industrial/Agricultural/Environmental Policy Area. The intent of the transition zone is stated as follows:

“.... [T]o allow for significant spatial separation between the heavy industry within the Heartland Area and those activities that surround it. Incorporating the currently designated land uses, the transition zone in Strathcona County allows for gradient of land uses from heavy industry within the Heartland Area to conservation areas, light/medium industrial activities and agri-business to residential acreages and farms outside of the Heartland. The continuation of agricultural activities is allowed and encouraged as indicated in the following guidelines.”

Policy objectives are identified for the Transition Policy Area on page 16 of the ASP as follows:

- “To provide a zone of transition between the heavy industrial activities within the Heartland Area and those less densely developed activities located outside of the Area.
- To provide and maintain a diversity of land uses that reflect those types of land uses both within the Heartland Area as well as those adjacent to it.
- To minimize conflict between land uses on either side of the transition zone as well as within it.
- To recognize the inherent value of the land uses within the transition zone.”

Following the Transition Policy Area objectives, policy statements on pages 17 to 19 of the ASP specify permissible land-use activities and guidelines to accompany those activities. While these activities and guidelines contemplate light/medium industrial activities, they do not presently contemplate rail-oriented uses as proposed by this ASP Amendment Application.

As the above discussion of Section 2.3.6 shows, the Transition Zone specifically provides for light/medium industrial activities, rural industrial parks as well as a variety of other development-oriented uses. The current Transition Policy Area clearly contemplates the conversion of agricultural land to commercial and industrial uses. This ASP Amendment

Application is consistent with that policy intent. Although there was some uncertainty early on in the pre-application process regarding rail facilities within the existing Transition Policy Area, County staff advised that the Amendment Applications would be the most suitable course of action.

Section 3.5 on page 24 of the ASP is entitled “Amendments to the Area Structure Plan” and reads as follows:

“An amendment to the area structure plan shall be required, if in the opinion of the County, a development proposal results in a significant change in the general land-use pattern of an area or site.”

The implementation of any development proposals within the ASP area need to be undertaken pursuant to the process outlined in section 3.10 Planning Framework on page 27. Some relevant excerpts describe the purpose of this framework as follows:

“The framework would be used as a “check list” in determining what had to be considered in locating at any of these sites (within the ASP)... These considerations are in essence performance criteria...They refer to particular standards with which an industrial activity has to comply...”

The considerations within this framework have been reviewed and applied wherever relevant when preparing the Amendment Applications to the County.

2.3 Consistency with Capital Region Growth Plan

The Capital Region Board (CRB) has been granted the authority under Ministerial Order (M.O.) L:270/10 Regional Evaluation Framework (REF) to approve municipal statutory plans and statutory plan amendments to ensure consistency with the Capital Region Growth Plan. Section 3.1 the REF requires CRB member municipalities to submit new Municipal Development Plans, and amendments thereto, for review and approval by the CRB. Section 3.2 of REF establishes the screening criteria for a statutory plan or statutory plan amendment for a REF evaluation. The ASP Amendment Application is required to undergo REF evaluation because it fits the following criteria:

3.2 a) (i) The statutory plan or statutory plan amendment designates land for Heavy Industrial Use

3.3 The plan is within 1.6 km of the boundaries of the Alberta's Industrial Heartland Area Structure Plans

The REF is intended to ensure conformity with the Objectives of the Capital Region Growth Plan as noted above. Specifically, Section 5.4 provides the following applicable considerations:

5.4 When evaluating a statutory plan or statutory plan amendment under this section, the Board must consider:

- a) Compatibility of the development with the objectives of the Capital Region Growth Plan as set out in Section 11 of the Regulation;
- b) weather approval and full implementation of the statutory plan amendment would result in development that is consistent with all of the following:
 - (i) the land-use principles and policies of the capital region growth plan including the provisions for;
 - i. Buffer areas as shown on the Regional Buffers Area Map in The Capital Region Growth Plan;
 - (vi) The boundaries and policies of Alberta's Industrial Heartland Area Structure plans and the Edmonton International Airport Area Structure Plan.

Further to 5.4 a) of the REF above, Section 11 of the *Capital Region Board Regulation* (AR 38/2012) contains specific objectives for the Capital Regional Growth Plan to which a statutory plan amendment must comply, as follows:

"a) to promote an integrated and strategic approach to planning for future growth in the Capital Region;

- b) to identify the overall development pattern and key future infrastructure investments that would
 - i) best complement existing infrastructure, services and land uses in the Capital Region, and
 - ii) maximize the benefits to the Capital Region;
- c) to co-ordinate decisions in the Capital Region to sustain economic growth and ensure strong communities and a healthy environment.”

The ASP Amendment Application is consistent with the intent of Section 11 because the purpose of the Amendment Applications is to facilitate a subsequent development permit application to develop a rail terminal, which would complement existing infrastructure and infrastructure in development in Alberta’s Industrial Heartland. An important consideration in selecting a location for a rail terminal development is direct access to multiple rail lines. The Property is ideal due to its direct access to existing CN Rail and CP Rail lines, and its proximity to other complementary heavy industrial uses. For instance, the Property is located approximately 2.5 kilometres from TC Terminals, which will provide crude oil batch accumulation and terminal services in Alberta’s Industrial Heartland, and would supply crude oil to the rail terminal.

The transportation of crude oil by rail offers a new transportation option and added value to shippers by offering the flexibility to access markets across North America. A rail terminal in this location would be a key component of a larger strategy to improve access to markets throughout North America for important Canadian crude oil resources, and would be a major contributor to the continued success of Alberta’s Industrial Heartland by complimenting existing pipelines and pipeline infrastructure in development.

The Regional Buffers Area Map referenced in Section 5.4 b) (i) i. of the REF can be found in Figure 3 of the Regional Plan Addendum of October 2009. It identifies the current Transition Zone specifically as a “Safety and Risk Management Buffer”. As detailed in Section 3.4 and Section 6.1 of this ASP Amendment Application, a December 2014 site-specific Risk Assessment by Doug McCutcheon and Associates Consulting on behalf of TransCanada found that the risk associated with the rail terminal does not extend beyond the boundaries of the Property. Furthermore, the suggested policy for Section

2.3.3 of the ASP provided above in Section 2.1 of this ASP Amendment Application reads, in part, “The acceptable level of risk of a fatality resulting from an industrial incident of 1×10^{-6} shall not extend past the property boundary”, thereby recognizing the intent to preserve a safety and risk management buffer.

Section 5.4 b) (vi) asks the CRB to consider the boundaries of the Alberta’s Industrial Heartland Area Structure Plans. The ASP Amendment Application proposes to amend the boundaries and policies of the ASP in order to better achieve the Objectives of the Plan as articulated in Section 11 of the *Capital Region Board Regulation* (AR 38/2012). The proposed amendment requests the current boundaries of the Transition Policy Area be revised in the current context of increasing relevance of rail access for the purpose of shipping petroleum products by rail and the limited availability of land with existing rail lines in the Heavy Industrial Policy Area within the ASP.

The final report of the Capital Region Land-Use Plan (March 12, 2009) contains a series of core principles that the CRB and municipalities must follow when implementing the land-use component of the Capital Region Growth Plan. The core principles are as follows:

I: Protecting the Environment and Resources

II: Minimize Regional Footprint

III: Strengthen Communities

IV: Increase Transportation Choice

V: Ensure Efficient Provision of Services

VI: Support Regional Economic Development

Each of the core principles noted above is followed by specific principles and thereafter explained in greater detail as context and policy statements. Some specific policy statements within each of the core principles relate to this ASP Amendment Application and the accompanying MDP Amendment Application.

Section 2.2 I (E) Minimize the Impact of Heavy Industrial Developments;

Policies

- (i) require appropriate risk management practices in approving heavy industrial development or other development in proximity to heavy industrial areas.

As noted previously and discussed further in Sections 1.4 and 3.3 of this ASP Amendment Application, the Risk Assessment submitted as supporting information to the Amendment Applications notes that the risk associated with the rail terminal does not extend beyond the boundaries of the Property.

Section 2.2 II (A) Identify, Protect and Prioritize Lands for Regional Infrastructure Policies

- (i) Ensure lands identified for regional infrastructure such as energy transmission highways, municipal infrastructure, transit and related facilities are protected from incompatible development.

As discussed above, the Amendment Applications are intended to facilitate a subsequent development permit application to develop a rail terminal, which would complement existing infrastructure and infrastructure in development in Alberta's Industrial Heartland. With direct access to existing CN Rail and CP Rail lines, and its proximity to other complementary heavy industrial uses, the Property is ideally situated to best utilize existing transportation infrastructure.

3 RATIONALE FOR THE PROPOSED AMENDMENTS

3.1 Alberta's Industrial Heartland ASP Contemplates Policy Flexibility

This ASP Amendment Application is reflective of the changing dynamics of the oil and gas industry and the demand for alternate means of shipping crude oil to various North American markets due to ongoing pipeline capacity constraints. Indeed, TransCanada submits that the ASP maps and policies were snapshots in time and not static. The ASP can and should adapt, in part, to evolving economic needs over time. Amendment 50-2002 to the ASP has already demonstrated this intent. TransCanada submits that it is relevant for Council to consider whether the ASP would have contemplated heavy industrial use on properties with access to railways had the future importance of shipping petroleum products by rail been evident at that time.

Section 3.5 of the ASP indicates that the ASP does not prohibit an amendment to the ASP Policy boundaries, but rather refers to a process to consider amendments.

Therefore, TransCanada proposes the amendment to Figure 2 of the ASP in order to maintain congruency between the proposed amendment and the existing ASP. While the ASP does not specify that any other amendment to the ASP is necessary, County staff has advised that additional policy text should be added to Section 2.3.3 of the ASP to create a Transition Policy Area "overlay" that would require a risk assessment process. The actual policy text addition is stated in Section 2 of this application.

Based on the foregoing, it is respectfully requested that Council determine that the Property subject to the Application Amendments is suitable for the intended use based on the merits of the proposal and its role in supporting the future of the Alberta's Industrial Heartland.

3.2 Historical Rationale for the Transition Policy Area

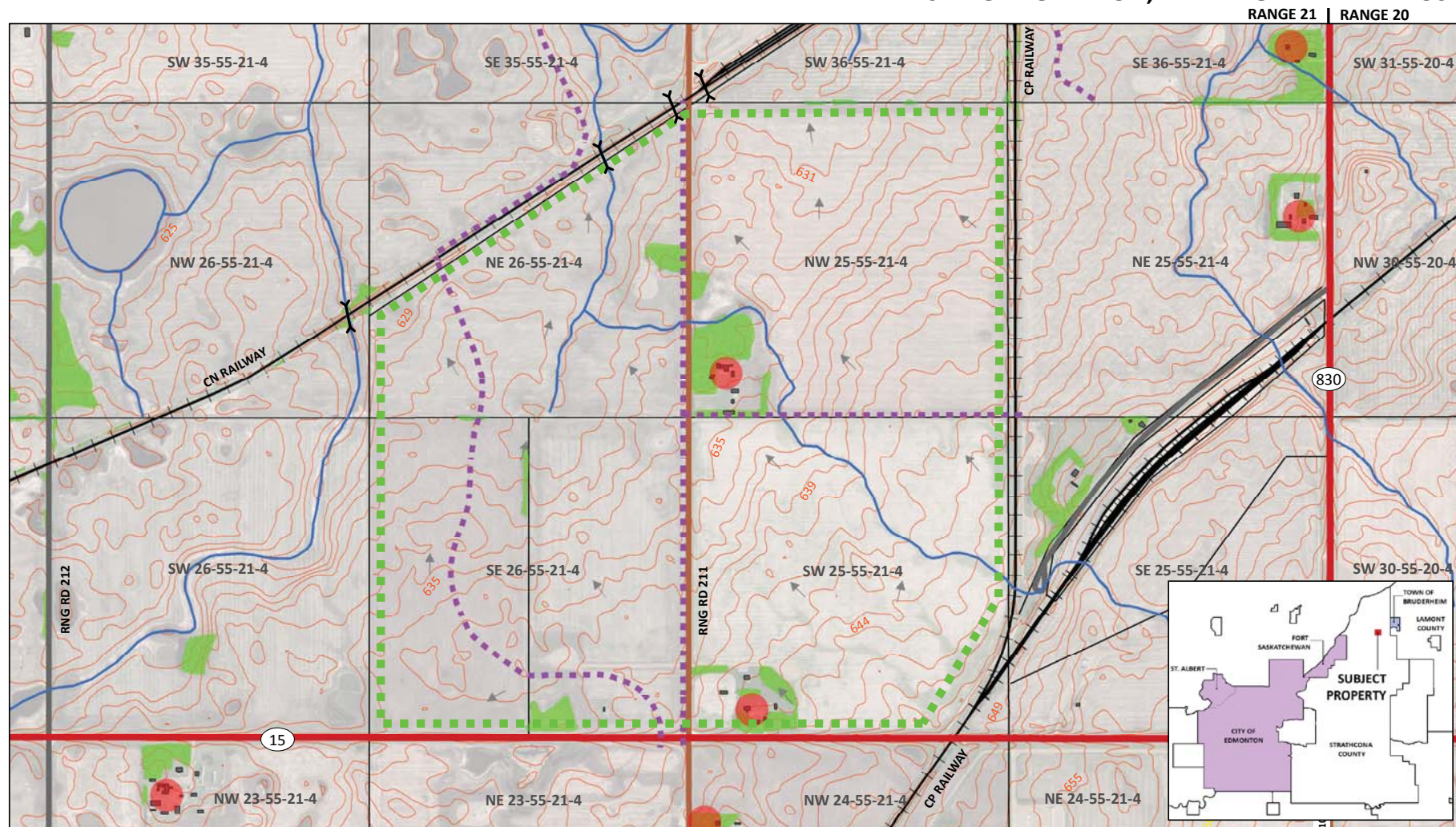
When considering this ASP Amendment Application, it is relevant to consider the underlying rationale for the existing boundary of the Transition Policy Area. However, when preparing this ASP Amendment Application, no documentation or working files that provide the rationale for the existing boundary could be located, other than

anecdotal reference to maintaining a buffer relative to Bruderheim. Accordingly, the original reasoning behind the Industrial-Transition boundary at the CN Rail line when the ASP was conceived almost 15 years ago is not clear. However, it is clear that industrial rail requirements in Alberta's Industrial Heartland have changed considerably since the establishment of the Transition Policy Area, which may not have been anticipated in the ASP.

Investigations in support of this ASP Amendment Application also included consultations with former County staff and planning consultants associated with the ASP. These consultations indicated (and historical County policy maps have confirmed) that much of the area designated for heavy industrial land in the ASP had been in place prior to 1998. The concept of a "Transition Area" is believed to have been created during the preparation of the ASP. Further, it was also suggested during these consultations that the reasoning behind the demarcation of the heavy industrial node along the CN Rail line was due, at least in part, to the generally lower agricultural value of the land starting approximately 1.5 km north of the rail line. Upon closer examination, the CN Rail line bisects Canada Land Inventory (CLI) Class I and Class 2 soils with a Heavy Industrial Policy Area on the north side and the Transition Policy Area on the south side. Therefore, it is reasonable to conclude that the rationale for the line of demarcation is that the CN Rail line constituted a convenient and evident boundary line to define what was then possibly considered an adequate amount of land for long-term expansion of Alberta's Industrial Heartland. However, today's reality is markedly different.

Since the ASP was adopted, opportunities to acquire designated industrial land have become very limited in the Heavy Industrial Policy Area given the rapid land acquisition and industrial development that has occurred. The County's current review of the ASP is an appropriate and timely undertaking given the changing nature of industrial requirements in the area.

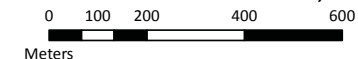
MAP 4: EXISTING VEGETATION, DRAINAGE AND LAND USE



LEGEND

- | | | | | |
|-----------------------|------------------------------------|-----------------------|-------------|-----------------------|
| ■ — SUBJECT PROPERTY | → EXISTING OVERLAND FLOW DIRECTION | —X— EXISTING CULVERTS | — HIGHWAY | ● EXISTING RESIDENCES |
| ■ EXISTING VEGETATION | — WATER BODIES & STREAMS | — GRAVEL ROAD | — RAILWAY | |
| — CONTOURS (1M) | — DRAINAGE SUB BASIN | — PAVED ROAD | ■ BUILDINGS | |

SCALE 1:10,000



SITE LEGAL DESCRIPTIONS
NW 25-55-21-4
NE 26-55-21-4
SE 26-55-21-4
SW 25-55-21-4

3.3 Strategic Site Location

The transportation of crude oil by rail offers value to shippers by offering the flexibility to access markets across North America. An important consideration in selecting a location for a rail terminal development is direct access to multiple rail lines. The Property is ideal due to its direct access to CN Rail and CP Rail lines, which would improve market access and offer shippers greater optionality.

The Property is also in close proximity to the approved TC Terminals facility, which would supply the rail terminal (and other pipelines) with crude oil by way of new interconnecting pipelines. The close proximity between TC Terminals and the Property allows the length of the interconnecting pipelines to be minimized.

The ASP has been beneficial to companies operating in Alberta's Industrial Heartland, member municipalities and the entire Alberta economy by providing a development framework which has been attractive to industrial development. As an indicator of this success, land within the ASP has been absorbed by industrial users to the point where few multi-quarter section parcels adjacent to dual and existing rail lines are available for new initiatives in the ASP Industrial Policy Area designations.

Few if any alternative land options exist in the Strathcona or Scotford Heavy Industrial Policy Areas of Strathcona County that could provide the following characteristics:

- Large, contiguous parcels of land;
- Provide direct, existing rail access to both CN Rail and CP Rail lines;
- Offer reasonably close proximity to the approved TC Terminals facility; and
- Remain within the Strathcona County portion of Alberta's Industrial Heartland area, providing another transportation option for shippers operating close by.

Although several locations were considered, the Property was determined to be ideal because it met the above-mentioned characteristics most closely.

3.4 Site-Specific Risk Assessment Report, 2014

In August, 2009, Doug McCutcheon and Associates Consulting completed the “Northeast Heavy Industrial Area Risk Assessment” report on behalf of Strathcona County (2009 Risk Assessment). The objective of the Risk Assessment was to identify what types and levels of risk are in the ASP area as a result of industrial activities, with the purpose of determining the types of zoning that could occur in the study area.

The Property was not included in the 2009 Risk Assessment terms of reference. As a result, a key consideration by TransCanada in the context of the Amendment Applications was to validate that the rail terminal proposal met the criteria for risk assessment as identified in the ASP, MDP and LUB.

In December, 2014, Doug McCutcheon and Associates Consulting prepared a site-specific assessment on behalf of TransCanada for the Property that contemplated a rail terminal as well as connecting pipelines that would connect TC Terminals to the Property (2014 Risk Assessment). Based on the 2014 Risk Assessment, the risk associated with the rail terminal does not extend beyond the boundaries of the Property. A more detailed discussion is included in Section 6.1 of this ASP Amendment Application. The full report is also included as Appendix A to this ASP Amendment Application.

3.5 Impacts on Surrounding Lands

TransCanada submits that the Property is suitable for the intended use of a rail terminal, and the 2014 Risk Assessment demonstrates both that a rail terminal is compatible with surrounding land uses, and that local impacts associated with a rail terminal can be mitigated. This is supported by the fact that there are no high-intensity residential uses in close proximity to the Property. The boundary of the Town of Bruderheim is approximately 2.5 km to the northeast of the Property. The closest known existing multi-parcel development appears to be approximately 2.75 km away from the Property, located to the northeast within the Town of Bruderheim (based on aerial photos). To the south, the surrounding land use is predominantly farming, including approximately 20 occupied or unoccupied residences within 3 km of the Property.

TransCanada has been in contact with landowners within a 1.5 km radius of the Property (which aligns with the AER requirements for notification) to provide information and collect feedback on the Amendment Applications. The objective of these efforts is to listen to landowner concerns and work to address these concerns, including through mitigation where feasible. This dialogue on the Amendment Applications will be ongoing as part of TransCanada's public engagement program. The results of this engagement as of June 16, 2015 are included as Appendix B to this ASP Amendment Application.

Supporting technical studies have been prepared at the level of detail commensurate with a bylaw amendment and are discussed within sections 5 and 6 of this ASP Amendment Application. TransCanada understands that the development permit stage would include a more detailed examination of considerations regarding site-specific activities including road and rail traffic, noise, and lighting. The development permit application process will also consider mitigations related to site design where appropriate. Through the detailed development permit process such impacts and mitigations will be properly identified, documented, assessed and implemented through a development agreement.

3.6 Impacts on Alberta's Industrial Heartland as a Whole

The development of a rail terminal is a key component of a larger strategy to improve market access for Canadian crude oil producers. TransCanada is working toward realizing its strategy of creating an integrated oil delivery system to connect producing areas in northern Alberta directly to markets in the United States and Canada and, if approved, these Amendment Applications will facilitate an important step in this overall integration strategy.

The rail terminal would be a major contributor to the continued success of the larger Alberta's Industrial Heartland and could be influential in attracting future investment to the region. As a benefit to Strathcona County itself, and based on the current property taxation formula, the County would receive an estimated minimum \$1 million annually through property taxation as a result of this development.

The combined contributions of TC Terminals and a rail terminal will further strengthen the overall stability and depth of the economy within Alberta's Industrial Heartland, and help provide economic benefits through the entire Alberta and Canadian economy.

4 EXISTING PHYSICAL CONDITIONS

4.1 Land Area and Certificates of Title

Appendix C contains certificates of title for the parcels subject to the Amendment Applications. Table 1 provides details on the land parcels within the Property:

Table 1 – Land Parcels Comprising the Property

Legal Description	Owner	Certificate of Title #	Titled Area in Hectares (ac)
E ½ SE 26-55-21 W4M	TransCanada	142 246 656	31.86 ha (78.73 ac)
W ½ SE 26-55-21 W4M	TransCanada	142 246 658	31.86 ha (78.73 ac)
NE 26-55-21 W4M	TransCanada	042 353 124 +1	43.3 ha (107 ac)
NW 25-55-21 W4M	TransCanada	042 353 124 +2	64.7 ha (160 ac)
SW 25-55-21 W4M	TransCanada	152 129 963	61.54 ha (152 ac)
Total Area			233.26 ha (576.37 ac)

The Property contains seven operating and five suspended oil and gas well sites and associated rights-of-way for oil and gas pipelines. These wells, owned by Long Run Exploration, currently produce sweet oil. Prior to development work on the Property, onsite wells will be properly abandoned and capped.

4.2 Existing Topography and Drainage

The Property is primarily existing cropland with occasional small pockets of lower lying areas, and the cultivated land consists predominantly of cereal cropland (see Map 4). The Property is situated within the central Parkland Natural Subregion. The surrounding landscape is dominated by agricultural land, industry, wetland areas and is immediately between the major CP Rail and CN Rail lines to the south and north of the Property respectively.

The elevation ranges from a high of 648 meters (m) above sea level in the southeast corner of SW 25-55-21 W4M to 629 m in the northwest corner of NE 26-55-21 W4M, for a total relief of 19 m across 1800 m. When reviewed over a variety of slope transects the average slope ranges between one and two percent.

The upstream sub-drainage basin contributing to off-site flows enters the Property from the south, and covers approximately 432.6 ha. Off-site flows drain toward the Property from the southeast, which are carried by existing drainage paths along Highway 15 and the CP Scotford subdivision rail line.

Drainage moving through the Property generally flows down from a southeast to northwest direction with most drainage exiting the north side of NE 26-55-21 W4M. The flow passes through culverts along Range Road 211 and railroad tracks through a drainage channel which flows northwest through the center of the Property. The channel flows west across Range Road 211 north of a local farm access road, then turns north and exits the site through a culvert along the CN Vegreville rail line and then continues to flow north. The existing on-site surface flows are divided by the six drainage channels which pass through the Property, and are bordered by both CN Rail and CP Rail tracks.

Small isolated seasonal areas of standing water are present across the Property. These isolated areas are typically located in topographic lows. Surface water frequently infiltrates the ground surface, recharging the shallow groundwater zone and it appears that swales have been constructed to promote drainage within localized areas of the cultivated fields. The overall drainage path directs the flow north into Astotin Creek which then flows into Beaverhill Creek. Beaverhill Creek drains north and west and ultimately empties into the North Saskatchewan River.

4.3 Existing Soils, Biophysical and Geotechnical Features

In February, 2015, a desktop Biophysical Assessment was prepared by Golder Associates Ltd. in support of the Amendment Applications. The Biophysical Assessment discusses the flora and fauna present on the Property, as well as the nature of existing wetland areas. Field surveys to support the Biophysical Assessment were conducted during the spring and summer of 2015 and a Field Reconnaissance Report was submitted under separate cover in August 2015 to support the Amendment Applications. The findings, conclusions, and recommendations of the field reconnaissance are consistent with the

desktop report. The desktop Biophysical Assessment and Field Reconnaissance Report are attached as Appendix D to this ASP Amendment Application.

4.3.1 Soils and Agricultural Quality

The Agriculture Canada 1987 Canada soil inventory identifies the surficial geology of the region as consisting of well-drained, dark gray Chernozemic and Luvisolic loam of lacustrine origin. While the County Municipal Development Plan Map 8 identifies the Property as CLI Class I soils, the more detailed County Rural Farmland Assessment Land Report dated January 21, 2015 rated the Property as CLI Class 2. The County's more detailed Rural Farmland Assessment (RFA) Rating evaluates the relative productivity of farmland. The rating for the four quarter sections of the Property averages 76% for the 165.5 ha (409 ac) area of cultivated crop land.

4.3.2 Existing Wetlands

Wetlands with semi-permanent to permanent standing water are located on the Property. The field conditions recorded as part of the desktop Biophysical Assessment were verified during more detailed field studies conducted during the summer of 2015. A comparison between the most recent and the oldest aerial photographs reveals that patterns of cultivation have remained largely unchanged since at least 1950.

The Biophysical Assessment indicated that groundwater aquifers in the area flow toward the North Saskatchewan River and the Beverly Channel, a parallel pre-glacial valley which is in direct hydraulic connection to the North Saskatchewan River.

The aerial photography assessment of wetlands delineated and classified the wetland boundaries. A review of aerial photos revealed 26 wetlands on the Property that encompass approximately 8 ha. Of this total, 3 ha of wetlands were Class III-V according to the Stewart and Kantrud classification system. Of the total site area of 233.26 ha, all wetlands taken together comprise approximately 3.5% of the Property. Class III-V wetlands by themselves comprise approximately 1.3% of the Property. Wetlands are currently being investigated and the results of the assessment and associated mitigations will be provided in a supplementary report that will be submitted to Strathcona County.

4.3.3 Vegetation and Wildlife

Fragmented treed areas comprise approximately 5 ha of the Property. These were mainly located around residential buildings and property boundaries. The majority of these trees are likely trembling aspen, balsam poplar, and white spruce.

While the Property includes several habitat types that will attract migratory birds, field studies will confirm the presence or absence of birds and herptiles. Since there is no evidence of flowing water or lentic habitat greater than 2 m deep, impacts to fish are not a concern within the Property.

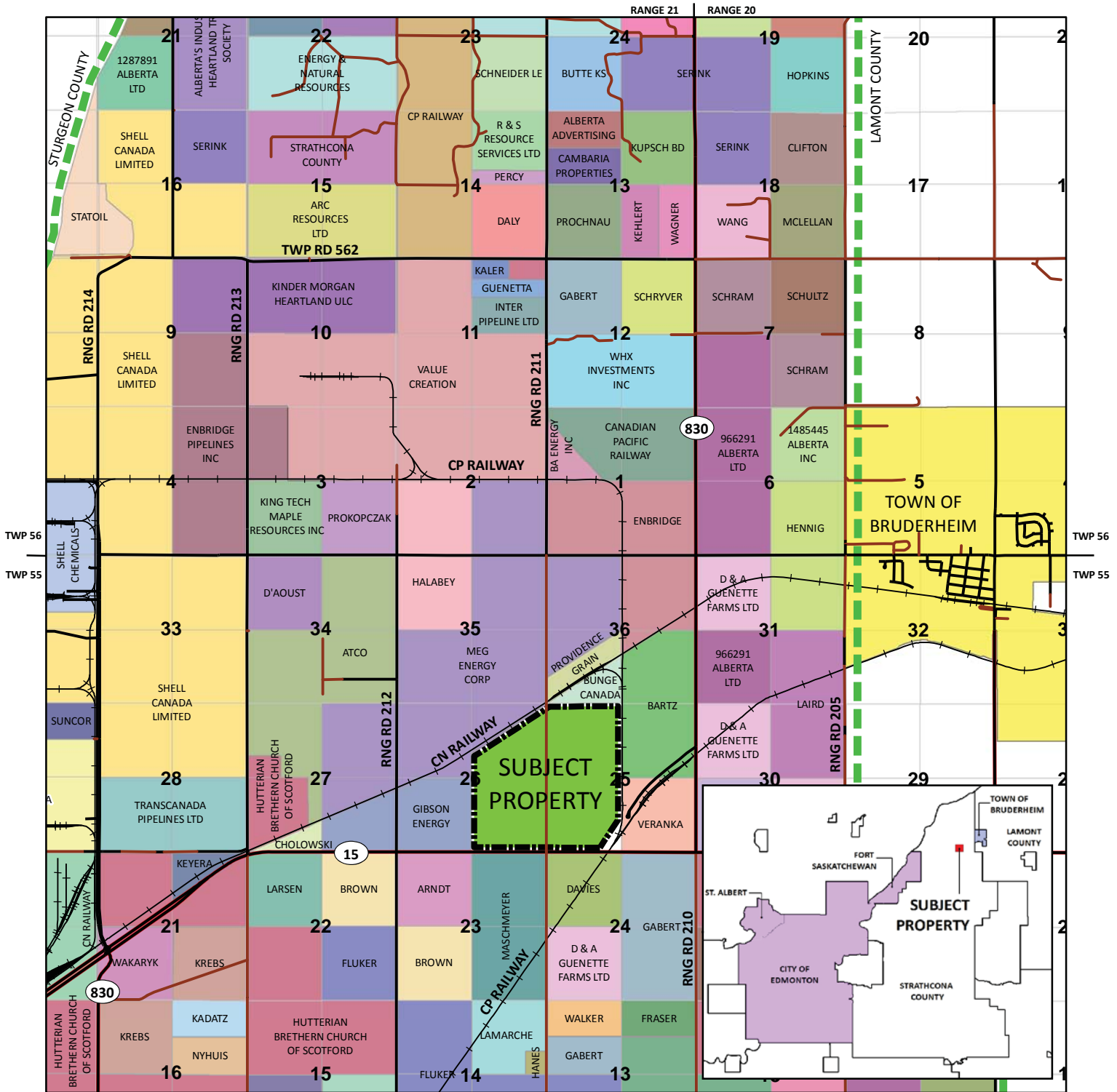
4.3.4 Desktop Geotechnical Assessment

In May, 2015, a desktop geotechnical assessment was conducted by Golder Associates Ltd. This report is attached as Appendix E to this ASP Amendment Application. The scope of work of this study was to review relevant publicly-available geotechnical information within the study area and assess the geotechnical feasibility and suitability of the site for constructing a rail terminal.

The available information used as part of this geotechnical interpretation assessment included LIDAR imagery, air photos, water well drilling records within 800 m of the Property, an existing environmental impact assessment (EIA) from December, 2007 on property located immediately north of the Property, and additional existing geology studies of the area. A more extensive geotechnical assessment including a matrix of test holes across the property will be undertaken in support of a future development permit application.

The primary surface unit on the Property would consist of the Cooking Lake Till which is described as a mixture of silt, sand, and clay with a relatively high percentage of clay-sized particles (approximately 25 to 45 percent). The terrain analysis indicates primarily glacial-lacustrine clay veneers (less than 1 m thick) or blankets (1 to 3 m thick) near surface overlying clay till deposits.

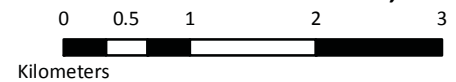
It is expected that the groundwater levels are relatively close to ground surface at the site, as evidenced by shallow ponds throughout the area. Past experience in the area



LEGEND

- SUBJECT PROPERTY
- COUNTY GRAVEL ROAD
- RAILWAY
- TOWN OF BRUDERHEIM
- STRATHCONA COUNTY BOUNDARY
- COUNTY PAVED ROAD
- HIGHWAY

SCALE 1:60,000



SITE LEGAL DESCRIPTIONS
 NW 25-55-21-4
 NE 26-55-21-4
 SE 26-55-21-4
 SW 25-55-21-4



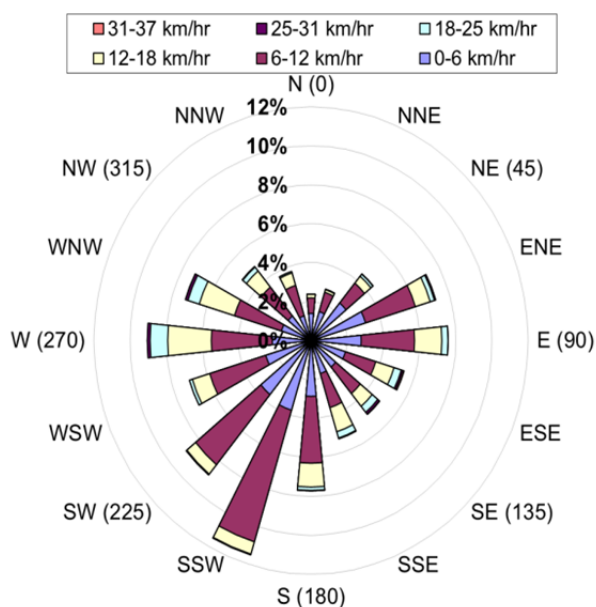
has also indicated that groundwater is typically encountered within 1 to 2 m below existing grade.

Based on the available information, the desktop assessment indicates that the subsurface conditions are considered fair to good for the development of a rail terminal, and is suitable for such an intended use. The two development aspects that will need to be further considered, amongst other design considerations, include subgrade preparation and availability of suitable fill.

4.3.5 Prevailing Climate and Weather

The annual average precipitation (rainfall plus snowfall) rates based on data from 1971 to 2000 from Fort Saskatchewan and Edmonton regional airports was reported by Environment Canada to be 472 millimeters (mm) (365 mm rainfall), and ranged from 460 mm (355 mm rainfall) to 483 mm (375 mm rainfall). Information obtained from Environment Canada climate data indicates that the average ambient temperatures range from 2.4 to 3.9°C within the Fort Saskatchewan and Edmonton regions. Mean daily temperatures are in the 15.0 to 16.5°C range in the summer and -7.32 to 9.1°C range in the winter.

Wind roses from the continuous monitoring sites in the Fort Air Partnership (FAP) monitoring network at Bruderheim display the overall wind direction and wind speed, as shown in Figure 1 below. The predominant direction is from the southwest and the speed averages 6 to 12 km/h as the modal category.

Figure 1 - Wind Roses - Town of Bruderheim Recording Station

Source: Fort Air Partnership, 2015

4.3.6 Existing Use of the Property

Two farmsteads are located on the Property, both on the east side of Range Road 211. The farmstead located on the southwest corner of NW 25-55-21 W4M is currently unoccupied, although the yard is maintained and is currently used for storage. The other farmstead, located in SW 25-55-21 W4M at the intersection of Range Road 211 and Highway 15, is currently renter-occupied but will be vacated on July 31, 2015. The remainder of the Property is currently being used for crop production.

4.3.7 Existing Road Traffic

The Property is located within Strathcona County, and is approximately 10 km northeast of Fort Saskatchewan, directly north of Highway 15. Highway 15 forms the southern boundary of the Property, and Range Road 211 bisects the Property down its middle until it intersects Highway 15.

Highway 15 is a two-lane undivided highway with a posted speed limit of 100 kilometers per hour (km/h) in the vicinity of Range Road 211. It has a rural cross-section with ditches on either side. Highway 15 becomes a four-lane divided highway 3.75 km west of the Range Road 211 intersection.



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1/4 SECTION

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Range Road 211 is currently a dust-suppressed gravel, two-lane undivided roadway with a rural cross-section with ditches on either side. There is no posted speed limit within this section of Range Road 211, however it is assumed that the speed limit is 80 km/h.

The existing Highway 15 and Range Road 211 intersection is a Type II (c) configuration with stop controlled on the north and south legs. Average annual daily traffic (AADT) generated by turning movements onto or from Range Road 211 at this intersection is approximately 300 vehicles. The 2013 AADT for Highway 15 near Range Road 211 is 9110 vehicles, with an average growth of four percent per year since 2004. Turning movements north of the CN Rail line crossing at Range Road 211 on the north side of Property indicates how much traffic exits and enters the Providence Grain Terminal. Alberta Transportation (AT) traffic counts indicate the following:

- AM Peak: Northbound – 21 vehicles per hour (vph); Southbound – 14 vph
- PM Peak: Northbound – 8 vph; Southbound – 11 vph
- Truck Traffic: Approximately 20%

A Transportation Impact Assessment (TIA) was undertaken by McElhanney Consulting in May, 2015 and is included as Appendix F to this ASP Amendment Application. Since the 2013 AADT has already exceeded the designed maximum AADT of 6000 vehicles per day, a detailed analysis was carried out in this 2014 study in order to determine what type of intersection configuration would be able to further accommodate an operational rail terminal on the Property for the medium term. Additional details of the TIA results are explained in Section 6 below.

Twinning of Highway 15 within the vicinity of Range Road 211 is currently being evaluated by AT to determine the feasibility of this option. Once the twinning of Highway 15 is planned, the Highway 15 and Range Road 211 intersection treatment will be clarified by AT. There is also currently an ongoing Industrial Heartland Transportation Study update underway. Detailed design for the Property will be conducted as part of the development permit stage, and will be reviewed by Strathcona County once again when the final public road alignments have been determined.

4.3.8 Existing Rail Traffic

The TIA also examined existing rail traffic that travels past the Property.

A CP Rail line running northeast to southwest intersects the following roadways in the vicinity:

- Highway 15 at approximately 970 m west of Highway 830;
- Highway 830 at approximately 1070 m north of Highway 15;
- Range Road 205 at approximately 2000 m north of Highway 15; and
- Highway 45 at approximately 2060 m north of Highway 15.

A CN Rail line also running northeast-southwest intersects the following roadways in the vicinity:

- Range Road 212 at approximately 700 m north of Highway 15
- Range Road 211 at approximately 1630 m north of Highway 15;
- Highway 830 at approximately 2670 m north of Highway 15;
- Range Road 205 at approximately 2910 m north of Highway 15; and
- Highway 45 at approximately 2730 m north of Highway 15.

The information summarized in Table 2 below was obtained from CP Rail and CN Rail.

Table 2 – CP Rail and CN Rail Train and Train Traffic Local Average Characteristics

	CP Rail	CN Rail
Train Frequency	10 to 15 trains per 24 hour period	6 to 10 trains per 24 hour period
Train Length	Up to 125 railcars (52 ft/railcar = 6,500 ft or 1980 m)	
Train Speed	Permissible speed – 40 mph (65 km/h), or equivalent to 17.9 m/s Actual turnout speed – 25 mph (40 km/h), or equivalent to 11.1 m/s	

Based on the information in Table 2, for a 1.98 km long train traveling at 40 km/h, it is estimated that a passing train will result in 2.97 minutes of road blockage. Current federal regulations limit the length of time trains may be stopped on a railroad mainline

when impeding a grade crossing to five minutes when pedestrian or vehicle traffic is present.

The Property is bordered by the CN Rail line running northeast to southwest on the north side of the Property while a CP Rail line and spur line are located on the east side of the Property. Both the CN Rail and CP Rail lines run through the Town of Bruderheim to the northeast of the Property. There is 4 km of CN Rail line between the Property and the western boundary of the Town of Bruderheim. There is also approximately 4 km of CP Rail line between the Property and the western boundary of the Town of Bruderheim.

4.4 Surrounding Existing Land Use and Land Ownership

The majority of land use surrounding the Property south of the CN Rail line is cropland. However, several industrial firms have acquired land or interests in land within the existing Transition Policy Area. Ownership of surrounding parcels is as follows (see Map 4):

- Land directly to the west of the Property in SW 26-55-21 W4M is held by Gibson Energy ULC. This land is currently undeveloped.
- Land directly to the north the Property in Ptn. SW 36-55-21 W4M is owned by Bunge Canada Holdings ULC and is currently undeveloped.
- Providence Grain Group ULC operates a grain transshipment terminal plus a rail siding approximately 800 m in length, north of the CN Rail line in Ptn. SW 36-55-21 W4M. Grain trucks make deliveries to the terminal throughout the year and use Range Road 211 for access.
- MEG Energy Corp. owns land to the north of the CN Rail line in N ½ 26-55-21 W4M. This includes a small portion of land south of the CN Rail line in NW 26-55-21 W4M.
- Enbridge has acquired land adjacent to Highway 830 in NE 36- 26-55-21 W4M and S ½ 1-56-21 W4M.

- The approved TC terminals facility is located approximately 2.5 km west along Highway 15 in S ½ 28-55-21 W4M.
- Adjacent land south of Highway 15 and directly east of the Property remains as active agricultural land under private ownership.

Nearby residential dwellings off the Property are mostly farmstead operations. Six dwellings are located within 800 m (one quarter section) of the perimeter of the Property (excluding the two dwellings within the Property).

The eastern edge of the Property is located approximately 2.5 km southwest of the boundary of the Town of Bruderheim. The distance between the nearest existing residence in Bruderheim to the eastern boundary of the Property is approximately 3.2 km when measured using aerial photography dated September 15, 2014.

The only other population concentration within 5 km of the Property is the Scotford Hutterite colony located in NE17-55-21-W4, which is approximately 4.8 km to the southwest.

Surrounding farmland is crossed by pipelines and contains numerous oil and gas wells. Certificates of title indicate rights-of-way and/or wells in the vicinity of the Property are owned and operated by Long Run Exploration, GED Production Inc., ATCO Gas and Pipeline, MEG Energy Corp. and Lamco Gas Co-Op Ltd. In addition, The Capital Region-Vegreville Corridor Water Service Commission operates a 450 mm diameter water pipeline that runs along the north side of Highway 15 and services the municipalities to the east including Vegreville and beyond.

4.5 Bruderheim Policy Documents

In its Municipal Development Plan, the Town of Bruderheim has recognized the importance of Alberta's Industrial Heartland on its economy. Specifically, the Bruderheim Municipal Development Plan states as follows:

"The largest current influence on the town of Bruderheim's economy is Alberta's Industrial Heartland. Surrounded by the operations of over 40 major petrochemical companies, the economy of the town of Bruderheim is fundamentally linked to the

Alberta's Industrial Heartland as it provides long-term job security for local and area residents, as well as customers for local businesses." (Bruderheim MDP, 2013; Section 2.2.6)

In 2013, the Town of Bruderheim approved a revised Municipal Development Plan, including a future land-use map. The map identifies land south of the CN Rail line and within Town boundaries as largely commercial and industrial with some residential land. Therefore, it is expected that no future residential development will occur in Bruderheim any closer than the boundary of the Town of Bruderheim north of the CN Rail line, approximately 2.7 km from the nearest boundary of the Property.

5 FUTURE DEVELOPMENT OF PROPERTY

5.1 Conceptual Site Development and Access

The conceptual site layout of a rail terminal on the Property is shown on Map 5. On-site infrastructure is expected to include loading facilities for unit trains alongside operational tanks, supporting pipeline connections, loading arms and small pumps.

Rail traffic by CN Rail would enter and exit the Property from the north, while rail traffic by CP Rail would enter and exit a rail terminal from the CP Rail spur on the east side of the Property. Each unit train is expected to enter the site empty and leave full of crude oil products. The rail terminal is expected to be operating up to 24 hours a day and seven days a week.

During the day, it is estimated that three manager-level employees would be on-site, as well as CN Rail or CP Rail personnel who would travel with their train upon its arrival and departure. Maintenance plans will be developed, however at this time it is anticipated that maintenance workers will also be on-site during the day.

Currently, road access to the Property is expected to be by way of Range Road 211 from the north and Highway 15 from the south. It is proposed that the portion of Range Road 211 within the Property will be relocated subject to further studies. Strathcona County and AT are currently undertaking a review of existing and future transportation requirements for Highway 15, Range Road 211 and other roads in the area. The outcomes of these studies will inform the ultimate alignment and connectivity of Range Road 211 to Highway 15. Once the outcomes of the Industrial Heartland Transportation Study update and the Alberta Transportation Highway 15 Functional Plan are determined, Strathcona County will undertake a detailed transportation review as part of the development permit application.

5.2 Conceptual Site Servicing; Water and Wastewater Management

It is expected that the rail terminal would operate with on-site servicing. A full build-out scenario would see a maximum of approximately 20 staff on-site at any one time. On-site water requirements would be minimal and the need for process water is not

anticipated. Options for water sources include water supply from trucked-in water or an on-site well depending on the volume of staff and on-site requirements. Wastewater management could be a closed system of pump-out tanks or septic tanks plus tile field. Detailed servicing implementation would be specified during the development permit process.

5.3 Conceptual Storm Water Management

In March, 2015, a conceptual storm water management plan was prepared by AECOM in support of the Amendment Applications and submitted to Strathcona County on July 3, 2015. The conceptual storm water management plan was updated based on comments received from Strathcona County in October, 2015. A copy of the updated conceptual storm water management plan is included as Appendix G to this ASP Amendment Application. This conceptual storm water management plan identifies the overall storm water management philosophy, design criteria and location of the proposed on-site drainage based on a conceptual rail terminal layout.

TransCanada has acknowledged that a detailed analysis including site visit is necessary to confirm the findings of the current desktop review. These activities are targeted to be conducted at the development permit stage, and will be used to confirm the pre-development runoff rate, off-site drainage routes, as well as to confirm existing culvert locations and sizing. The site visit will also be used to assess the downstream drainage courses, confirming that the proposed discharge rates and volumes will avoid or mitigate impacts on those downstream drainage courses, and/or establish acceptable storm water discharge parameters to protect the downstream drainage courses. A detailed grading and drainage design package will be developed based on the storm water management plan as presented in this report, as well as the subsequent findings of the site visit.

The storm water management plan has been developed under the assumption that the storm water ponds are designed to retain 100% of on-site flow. Therefore, the plan recommends off-site flows are to be re-routed around the rail facility for the purposes of reducing pond size and testing requirements. In accordance with conservative

engineering practices, the conceptual design for the storm water plan is designed to meet an assumed full build-out maximum capacity of four unit trains per day.

5.4 Noise, Vibration, Odour and Lighting Considerations

Principal sources of noise during construction will be from pile driving (early construction), as well as motorized equipment and backup alarms (throughout construction).

Principal sources of noise during operations will be from the following sources:

- Pump operation;
- Train movements on curved track sections;
- Locomotive idling;
- Train movement across discontinuities (e.g., switches). Note that noise due to train movements across discontinuities is minimized in a new, well-built facility;
- Rail car switching. The intended mode of operation of a unit train loading facility is to receive unit trains already assembled, so there would only be minimal switching required within the facility;
- Train movement and start/stop; and
- Locomotive whistling when crossing the CN Rail/CP Rail mainlines (i.e., when returning to the mainlines). There would be no whistling required on site.

TransCanada will design the site to mitigate the effects of noise, odour, and dust at the development permit stage, and in accordance with applicable regulatory requirements. A noise impact assessment will be submitted to the AER as part of regulatory submissions as required. TransCanada will design and operate the facility to comply with applicable Strathcona County bylaws related to noise and nuisance.

5.5 Emergency Response Considerations

Safety is a top priority at TransCanada and the company is committed to designing, constructing and operating its facilities to provide for the safety of employees,

contractors and the public, and to avoid or minimize impacts to property and the environment. That same level of focus, investment and commitment will be applied to TransCanada's rail business.

TransCanada will develop a comprehensive Emergency Response Plan (ERP) for its construction and operation phases that will outline procedures to protect the public and emergency responders, property and the environment in the unlikely event of an emergency. TransCanada's ERP will also satisfy applicable regulatory requirements regarding safety and environmental protection as required by the AER and AT, and will include effective strategies, techniques and equipment to respond to an emergency.

TransCanada consults with the local first responders and officials when developing its ERPs to identify local sensitivities and align its response procedures. By working with communities, TransCanada builds relationships with local first responders and community officials, informing each other of emergency response strategies and gaining an understanding of each other's roles and responsibilities. For the Property and rail terminal, TransCanada will have comprehensive, coordinated response plans with railways and the community.

To prepare for the unlikely event of an emergency, TransCanada will establish relationships with sources of mutual aid. Planning includes establishing pre-incident plans in order for responders to have information about products and equipment, primary entry/egress paths and alternate escape routes, as well as appropriate types of decontamination.

TransCanada's emergency response system is documented and tested regularly through annual emergency management system training and exercises involving employees, responders and the community. TransCanada continually improves its emergency response program by developing and conducting complex exercises to test emergency management procedures, ERPs, and by training staff in effective emergency response. TransCanada also collaborates with external agencies during these drills and exercises to strengthen relationships and to coordinate with first responders.

6 LAND USE ASSESSMENT AND SUPPORTING DOCUMENTATION

This section provides a summary of several technical reports that evaluate operational impacts for the rail terminal. This includes the 2014 Risk Assessment, The Transportation Impact Assessment, 2015 and the Conceptual Storm Water Management Plan, 2015. These studies were conducted considering a conceptual layout and scope for a rail terminal on the Property, and are included as Appendices to this ASP Amendment Application. These studies will also be followed by more detailed reports at the development permit stage.

6.1 Site-Specific Risk Assessment, 2014

As mentioned above, in December, 2014, Doug McCutcheon and Associates Consulting prepared a site-specific risk assessment on behalf of TransCanada for the Property as well as future connecting pipelines. This 2014 Risk Assessment is included as Appendix A to this ASP Amendment Application.

The 2014 Risk Assessment followed the standard process by first defining hazards, and then determining consequences and probabilities for the purpose of defining the risks. These values were then compared to the Major Industrial Accidents Council of Canada (MIACC) criteria for acceptability as shown in Appendix 2 of the 2014 Risk Assessment.

The worst case scenarios reviewed were the following:

- Flammable liquid fires and the radiant heat effects;
- Pipeline ruptures creating shockwaves and resulting fire;
- Boil-over incident involving the storage and surge tanks;
- Boiling Liquid Expanding Vapour Explosions (BLEVE) involving tank cars; and
- Smoke from the fires.

The 2014 Risk Assessment demonstrates that the risk associated with a rail terminal on the Property is within the acceptable range for the MIACC criteria. The potential hazard scenarios will impact the rail terminal site area only and not beyond the Property lines.

6.2 Transportation Impact Assessment, 2015

Road access to the Property is expected to be by way of Range Road 211. It is proposed that portion of Range Road 211 within the Property will be relocated subject to further studies. Strathcona County and AT are currently reviewing existing and future transportation requirements for Highway 15, Range Road 211 and other roads in the area.

A TIA was undertaken by McElhanney Consulting in May, 2015, and is included as Appendix F to this ASP Amendment Application. This study examined the traffic impacts associated with a rail terminal on the Property. The conclusions and recommendations are summarized below with the understanding that there is currently an ongoing Industrial Heartland Transportation Study update and Alberta Transportation Highway 15 Functional Planning Study underway. The outcomes of these studies will inform the ultimate alignment and connectivity of Range Road 211 to Highway 15. Detailed design for the Property will be conducted as part of the development permit stage, and will be reviewed by Strathcona County once again when the final public road alignments have been determined.

- The AADT on Highway 15 is approaching 10,000 within three years based on an annual growth rate of four percent. Twinning of Highway 15 within the vicinity of Range Road 211 will need to be explored by AT.
- The queuing analysis indicated that there will be 51 vehicles (on average) queuing on Highway 15 per train movement on the CP Rail line. Queuing on the highways should not be an issue.
- The left turn warrant analysis revealed that the existing Type II (c) intersection treatment will need to be upgraded to Type IV intersection treatment with additional left turn storage length of 10 m. However, based on the synchro analysis, the existing intersection configuration will be adequate. Once the twinning of Highway 15 is completed, the Highway 15 & Range Road 211 intersection treatment should be a minor road intersection on a four-lane divided highway as shown in Appendix E of the TIA report.

- The eastbound and westbound traffic movements on Highway 15 will operate at a Level of Service (LOS) A at the study intersection. The northbound and southbound traffic movements on Range Road 211 will fail at the year 20 horizon, mainly due to the traffic growth on Highway 15. The rail terminal development itself on the Property would have minimal impact on the Highway 15.
- Traffic signals are not recommended for the study intersection since this intersection is anticipated to continue operating at an adequate LOS in an unsignalized configuration (with stop control on the north and south legs) for the 20 year horizon.
- The intersection sight distances to the east and west along Highway 15 from its intersection with Range Road 211 are adequate.
- Illumination at the study intersection is not warranted.
- Pedestrian movement accommodation at the study intersection is not warranted.

6.3 Conceptual Storm Water Management Plan

The drainage concept for development on the Property has been based on the following principles:

- Off-site flow re-routing;
- Maintenance of the current on-site drainage pattern;
- Development of a new Storm Water Management Facility (SWMF) in the northwest portion of the Property; and
- 100% retention of on-site flows.

Runoff from the proposed on-site drainage area will be conveyed in general to the northwest. The runoff will be conveyed via existing surface drainage paths and proposed ditch and culvert systems. Due to the requirement of a rail facility to maintain a shallow slope and grade, a portion of the existing drainage in the southeast corner of the study

area will be diverted around the site. The runoff will be diverted along the municipal road re-alignment and reconnected to its existing drainage course at the north end of the Property.

Off-site flows are proposed to be conveyed around the east and west edges of the rail terminal. The offsite flows on the west side of the site will be discharged near SWMF #1 to the existing drainage course to the west. Offsite flows on the east side of the site will be diverted around to the north and connect to the ditch where the storm water from SWMF #2 will be discharged.

At this time, the building/tank layout is conceptual and has not been finalized. Therefore, a conservative estimate of 1 ha was used to be comprehensive enough to account for finalized site development plans. Once the building/tank layout has been finalized, further delineation of runoff from those areas can be completed. Additionally, it should be noted that the proposed tanks will have a containment system.

At this time, the areas east of realigned Range Road 211 are primarily undeveloped and are proposed to drain directly off-site. The approximate area contributing to the on-site runoff is 190.0 ha. Since the SWMFs will not discharge during the rainfall event, this is not likely to negatively impact the downstream drainage course. A detailed evaluation of the pre-development runoff rate as well as an assessment of the downstream drainage courses will be undertaken at the development permit stage, to confirm that the proposed discharge rates and volumes will avoid or mitigate impacts on those downstream drainage courses and/or establish acceptable storm water discharge parameters to protect the downstream drainage courses.

Two SWMFs are proposed for the development. To be conservative, at this stage it has been assumed that all of the storm water runoff from the site will be contained within the SWMFs until it can be tested. Water quality enhancement will be provided in the SWMFs. The SWMFs will be wet ponds that will provide time for the settlement of particles suspended within storm water entering the SWMF. The water will then flow northwest and exit the Property through a ditch and culvert system where the flow joins the existing drainage course to the north of the CN Vegreville rail track.

7 PUBLIC ENGAGEMENT PROGRAM

TransCanada strives to be a good neighbour and has been taking steps to fulfill its public consultation obligations for the Amendment Applications. A Public Engagement Plan (PEP) was drafted by TransCanada and subsequently reviewed and approved by Strathcona County in April, 2015. In developing the PEP, TransCanada followed the Strathcona County Terms of Reference for the Preparation and Amendment of Area Concept Plans or Area Structure Plans, TransCanada's practices, policies and goals for Stakeholder Engagement, and one of the a Guiding Principles of Strathcona County's Public Engagement Framework that "public engagement is proactive".

The overall purpose of the public engagement is as follows:

- Build awareness of the Amendment Applications;
- Communicate opportunities to participate in the associated processes;
- Provide transparency in the associated processes;
- Fulfill consultation requirements;
- Determine level of support from citizens and stakeholders;
- Solicit feedback from the public;
- Determine appropriate mitigations to address stakeholder concerns where warranted; and
- Facilitate ongoing communication through the design, construction and life of the rail terminal.

TransCanada has been taking steps as outlined in the PEP to meet the objectives listed above. The public engagement summary provides information on the public engagement activities that have taken place to October 1, 2015, including the information shared and feedback received. The PEP and public engagement summary report are included as Appendix B to this ASP Amendment Application.

This summary does not represent the conclusion of public engagement, since TransCanada will continue to follow the PEP throughout the Amendment Applications process, as well as throughout development and operation on the Property.

8 CONCLUSION

In summary, TransCanada is applying to amend the ASP by amending the designation for the Property on Figure 2 of the ASP from Transition Policy Area to Heavy Industrial Policy Area. Further, a text amendment to the ASP establishing the need for a risk assessment within the Transition Policy Area is requested. The purpose of the ASP Amendment Application is to facilitate a future development permit application for a rail terminal on the Property.

The ASP Amendment Application and the collective Amendment Applications closely align with the County's overall strategic direction and vision found within the County's MDP, as well as its on-going support of Alberta's Industrial Heartland. Further, TransCanada submits that the Amendment Applications are consistent with the original intent of the ASP, which is to concentrate heavy industrial land uses north of Highway 15. TransCanada therefore requests that the County grant this ASP Amendment Application (and ultimately all of the Amendment Applications) in order to facilitate the strategic and regionally-complementary development of a rail terminal at the Property.