

**KEY WILDLIFE AND BIODIVERSITY ZONE PROTECTION PLAN  
FOR THE  
LAC LA BICHE RIVER HDD CROSSING  
FOR THE  
GRAND RAPIDS PIPELINE GP LTD.  
GRAND RAPIDS PIPELINE PROJECT**

**October 2014  
8395**

Prepared for:



Grand Rapids Pipeline GP Ltd. in its capacity as a general partner  
on behalf of  
Grand Rapids Pipeline Limited Partnership

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## 1.0 INTRODUCTION

Grand Rapids Pipeline GP Ltd. (Grand Rapids), in its capacity as general partner on behalf of Grand Rapids Pipeline Limited Partnership, has applied to the Alberta Energy Regulator (AER) pursuant to Part 4 of the *Pipeline Act* to construct and operate pipelines and associated installations, collectively named the Grand Rapids Pipeline Project (the Project). The AER issued Decision 2014 ABAER 012 on October 9, 2014 granting approval for select Project applications subject to the conditions outlined in Appendix 1. Pending regulatory approval, construction of the Project is scheduled to begin in October 2014 and be completed by spring 2017, and will involve the construction of the following components:

- one approximately 460.5 km pipeline, with an O.D. of 508 mm, from the Grand Rapids MacKay Terminal to terminals in the Edmonton area (the 508 mm pipeline) to:
  - initially transport approximately 90,000 barrels per day (bbl/d) of blended crude bitumen from the Grand Rapids MacKay Terminal at SE 34-89-14 W4M, approximately 30 km northwest of Fort McMurray, to the Edmonton area at 8-5-53-23 W4M; and
  - subsequently, transport approximately 330,000 bbl/d of diluents from the Edmonton area or Heartland areas to delivery points in the west Athabasca oil sands area;
- one approximately 460.5 km pipeline, with an O.D. of 914 mm, from the Grand Rapids MacKay Terminal to terminals in the Edmonton area to transport approximately 900,000 bbl/d of blended crude bitumen from the west of Athabasca oil sands area to the Edmonton and Heartland areas (the 914 mm pipeline);
- one 4.1 km, 610 mm O.D. pipeline to transport approximately 400,000 bbl/d of blended crude bitumen from the Grand Rapids MacKay Receipt Station to the Grand Rapids MacKay Terminal (the 610 mm lateral pipeline);
- one 4.1 km, 406 mm O.D. pipeline to transport approximately 200,000 bbl/d of diluents from the Grand Rapids MacKay Terminal to the Grand Rapids MacKay Receipt Station (the 406 mm lateral pipeline); and
- 7 associated pipeline installations, which include 2 tank farms and 5 pump stations located at the following 5 pipeline installation sites:
  - Grand Rapids MacKay Terminal, located at NW 34-89-14 W4M, which includes a tank farm and pump station;
  - Grand Rapids Thornbury Terminal, located at NE 29-79-14 W4M, which includes a pump station;
  - Grand Rapids Wandering River Pump Station, located at NW 19-73-16 W4M;
  - Grand Rapids Grassland Pump Station, located at NE 15-67-18 W4M; and
  - Grand Rapids Heartland Terminal, located at SE 28-55-21 W4M, which includes a tank farm and pump station.

For ease of description, the proposed pipeline route is described using KPs, starting at the Grand Rapids MacKay Terminal at NW 34-89-14 W4M (KP 0.0) and ending at terminals in the Edmonton area at SE 5-53-23 W4M (KP 460.5) (Figure 1). The figures, KPs and legal locations described in this report are based on revision 6B of the proposed Project route.

The proposed pipeline route crosses a Key Wildlife and Biodiversity Zone (KWBZ) associated with the La Biche River for a length of 0.8 km from KP 261.2 to KP 262 (Alberta Environment and Sustainable Resource Development [AERSD] 2014) (Figure 2). Grand Rapids commissioned TERA, a CH2M HILL Company (TERA) to prepare a KWBZ Protection Plan. This plan will address mitigation measures to be considered

and implemented during the planning, construction, reclamation and operations phases of the Project within the KWBZ associated with the La Biche River.

## 1.1 Regulatory Guidelines

The KWBZ Protection Plan has been developed in consideration of the current regulatory guidelines related to KWBZs. In general, regulatory guidelines provide recommendations for industrial development to minimize all industrial activities within KWBZs, minimize activity during winter months to avoid displacing wildlife, reducing new access within KWBZs and follow timing restrictions. The applicable guidelines related to KWBZs are summarized below. Grand Rapids will continue to facilitate open communication with regulatory agencies throughout Project planning and execution in regards to regulatory policies related to the KWBZ.

### Recommended Land Use Guidelines: Key Wildlife and Biodiversity Zones

The *Recommended Land Use Guidelines: Key Wildlife and Biodiversity Zones* (Alberta Sustainable Resource Development [ASRD] 2010) provides the following recommendations.

- No industrial activities should occur within KWBZs from January 15 to April 30.
- New permanent access development is not recommended within KWBZs. Where temporary access is required, it should be designed and managed to minimize disturbance to wildlife and wildlife habitat.

### Integrated Standards and Guidelines for the Enhanced Approval Process

The Alberta Government Integrated Standards and Guidelines – Enhanced Approval Process (Government of Alberta 2013) provides the following desired outcomes.

- Protect the integrity of ungulate winter ranges, river corridors and biodiversity areas where species tend to concentrate.
- Protect locally and regionally-significant wildlife movement corridors.
- Protect areas with rich habitat diversity and regionally-significant habitat types and habitat diversity.
- Protect hiding and thermal cover.
- Protect the complex biological structure and processes of identified riparian areas.
- Reduce excessive mortality of wildlife from all sources.
- Protect ungulate energy reserves, body condition and reproductive potential.

Approval standards include the following.

- No industrial activities should occur within KWBZ from January 15 to April 30 with the following exception under favourable (non-adverse) ground conditions: pipeline installations are accessed using Class IV or V roads; and activities are planned within 100 m of an all-weather road.
- Where materials are available, rollback should be placed across the entire pipeline right-of-way width for at least 40% of the length of the pipeline or the length of the right-of-way.

## 1.2 The La Biche River Key Wildlife and Biodiversity Zone

Geotechnical surveys were completed for the La Biche River crossing and are summarized in a report prepared by CCI Inc. dated October 2014. The preferred method of crossing at the La Biche River is a trenchless (*i.e.*, horizontal directional drill [HDD]), which will reduce habitat disturbance within the KWBZ.

The Project is located within KWBZ associated with the La Biche River for approximately 0.8 km and is located on private land that has been cleared up to the banks of the La Biche River and will not require any new clearing within the KWBZ (Plate 1, Appendix A).

Existing bridges will be used to move equipment around the crossing and, therefore, a vehicle crossing will not be required at the La Biche River crossing location.

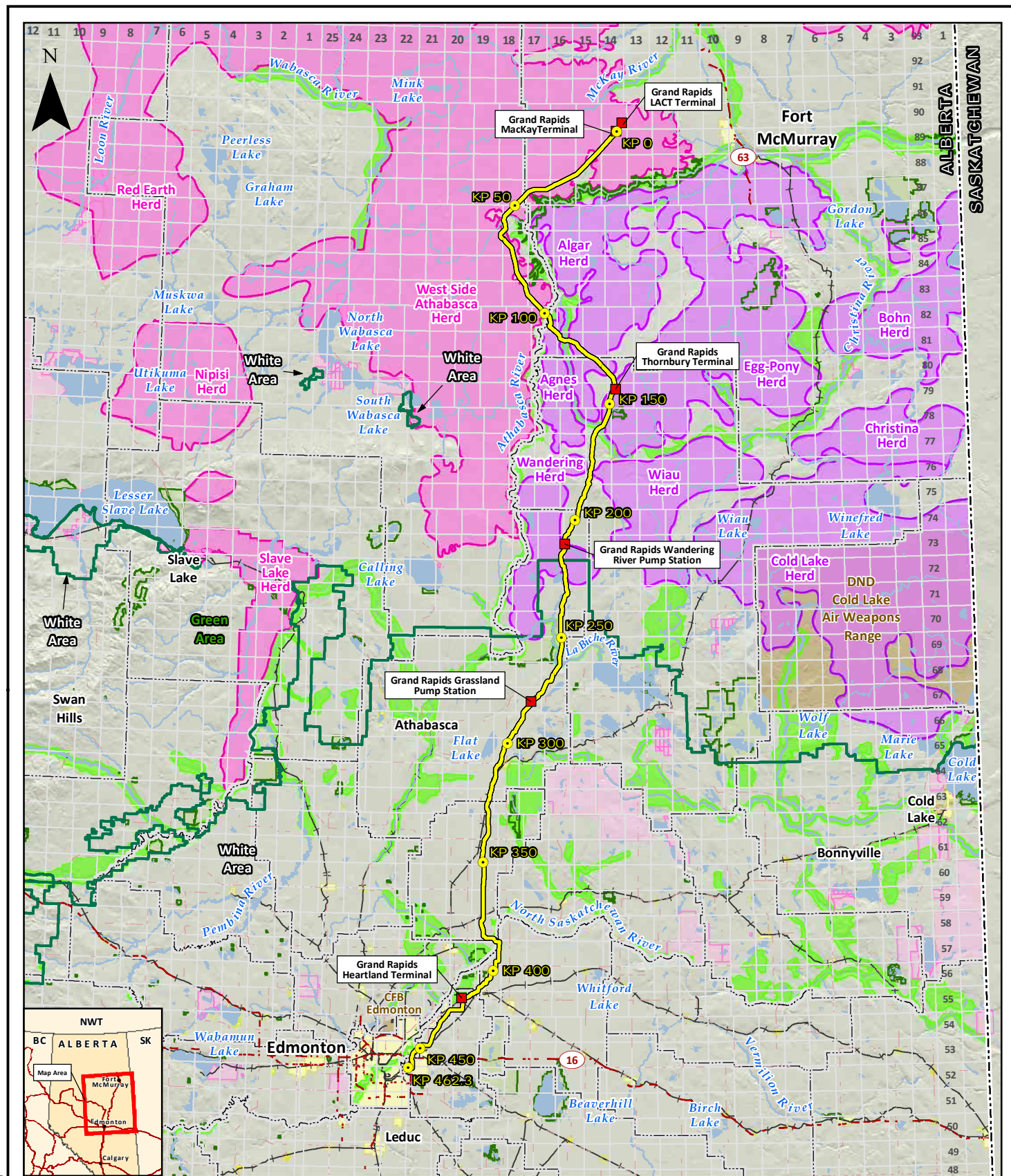
Subject to regulatory approvals, pipeline clearing and construction is scheduled to begin in late fall 2014. The Project is expected to be commissioned and operational by April 2016. The La Biche River is a mapped Class C watercourse, at the proposed crossing locations, and has an instream restricted activity period (RAP) of April 16 to July 15 to protect sensitive life history stages of fish (e.g., spawning, embryo incubation and fry emergence) from being negatively impacted by instream activities (Alberta Environment 2006).

The entry and exit points of the HDD at the La Biche River have been selected to meet the following constructability and regulatory requirements:

- the areas north and south of the La Biche River are generally dominated by fens, swamps and marshes which dictates the requirement for construction to occur under winter conditions; and
- the La Biche River lacks well defined valley breaks and therefore a 100 m buffer from the permanent watercourse bank applies (Government of Alberta 2013).

The entry point of the HDD has been set as far back from the southern banks of the La Biche River as feasible, and it has been located outside of the 100 m recommended buffer. The exit point of the HDD is located over 100 m north of the La Biche River, however, it is located within the 100 m buffer of a meander of the La Biche River to the west. Disturbance to important riparian vegetation within the 100 m buffer is avoided as this area is located on privately owned lands that have been cultivated to the edge of the La Biche River. Grand Rapids is considering options and techniques to access the southern section of the Project under non-frozen conditions to establish access as early as possible to accommodate an early start of pipeline installation at the La Biche River crossing.

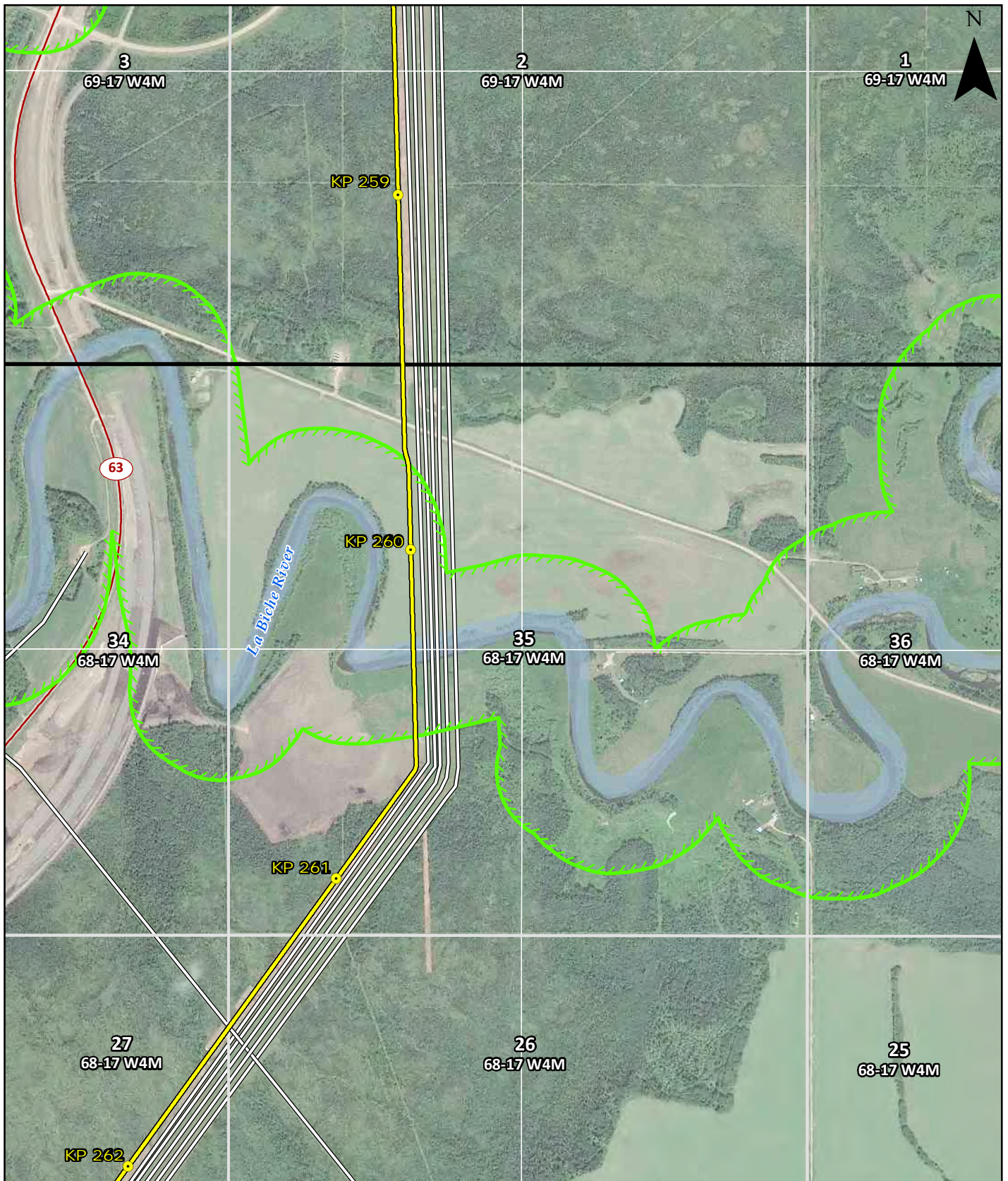
AESRD has communicated that a trenchless crossing method of the La Biche River is preferable. Grand Rapids has discussed with AESRD that it will not be possible to complete construction within the KWBZ by January 15; however, Grand Rapids will endeavor to complete work at the crossing as quickly as possible. The anticipated schedule for the HDD is January 2015 to March 2015. During the application process for the Project there were substantial changes to the environmental regulatory system in Alberta. The Energy Resources Conservation Board was dissolved and the AER was launched in June 2013. On November 30, 2013, the AER took over implementation of the Public Lands Act from AESRD as it relates to provincially regulated pipelines. On March 29, 2014, the AER took over implementation of the Water Act and the EPEA from AESRD. Ongoing consultation will be maintained with the AER related to Project scheduling and Grand Rapids will provide the AER with refined construction schedules as they become available.



**FIGURE 1**  
**REGIONAL LOCATION**  
**KEY WILDLIFE AND BIODIVERSITY ZONE PROTECTION PLAN**  
**FOR THE PROPOSED GRAND RAPIDS PIPELINE GP LTD.**  
**GRAND RAPIDS PIPELINE PROJECT**

SCALE: 1:2,000,000  
October 2014  
8395  
Mapped By: SL  
Checked By: TF





- |                         |                                    |
|-------------------------|------------------------------------|
| Kilometre Post (KP)     | Highway                            |
| Proposed Pipeline Route | Waterbody                          |
| Existing Pipeline       | Key Wildlife and Biodiversity Zone |

**FIGURE 2**  
**KEY WILDLIFE AND BIODIVERSITY ZONE**  
**KEY WILDLIFE AND BIODIVERSITY ZONE PROTECTION PLAN**  
**FOR THE PROPOSED GRAND RAPIDS PIPELINE GP LTD.**  
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## 2.0 CONSULTATION

Grand Rapids has initiated consultation and will continue to work with provincial regulators to ensure that the measures implemented within the KWBZ align with relevant government policy. The KWBZ Protection Plan has been developed in consideration of ongoing consultation with stakeholders, AESRD and the AER. Grand Rapids will continue to work with stakeholders and provincial regulators to ensure that any concerns regarding the KWBZ are addressed prior to construction, and will continue to facilitate open communication throughout Project execution. A summary of Project-specific consultation completed to date is provided in Table 1.

### 2.1 Provincial Regulators

Consultation with provincial regulators has been used to gain a stronger understanding of regulatory requirements within the KWBZ. Grand Rapids has initiated consultation and will continue to work with provincial regulators to ensure that the measures implemented to minimize and mitigate Project effects within the KWBZ align with relevant government policy.

A summary of Project-specific consultation completed to date is provided in Table 1.

**TABLE 1**

**SUMMARY OF CONSULTATION ACTIVITIES WITH  
PROVINCIAL AUTHORITIES RELATED TO THE KWBZ ASSOCIATED WITH THE LA BICHE RIVER**

Name and Title	Method of Contact	Comments
Laurie Kirkpatrick Forest Officer AESRD Fort McMurray	Meeting	February 20, 2013 - Jeff Rau and Jessica Swanson of TERA, Tammy Cummer and Doug Rovers of Grand Rapids and Laurie Kirkpatrick of AESRD met and discussed PLA drawings, EFR applications, caribou and KWBZs.
Grand Rapids Representatives met with the following AESRD representatives:  Ed Barnett - AESRD Marvin Pearce - AESRD Chris Waslyk - AESRD Laurie Kirkpatrick - AESRD Joann Skilnick - AESRD Grant Chapman - AESRD	Meeting	July 24, 2013 - Meeting to discuss the Grand Rapids Project at the AESRD Wandering River Office. Wildlife representatives noted that AESRD would require specific requests for construction within the KWBZ timing constraints.
Joann Skilnick Senior Wildlife Biologist AESRD Fort McMurray	Phone Call	September 4, 2013 - Jessica Swanson of TERA called Joann Skilnick of AESRD to discuss the 100 m buffer required to the edge of valley breaks in KWBZs. The La Biche River crossing did not appear to meet this approval standard and Joann Skilnick had submitted an Information Request regarding this crossing. Jessica Swanson understood from this conversation that in any location where proposed construction is planned within 100 m of a KWBZ be reconsidered by Grand Rapids such that construction is greater than 100 m from the KWBZ. Joann Skilnick also indicated that if it is not possible for construction to be located greater than 100 m from KWBZs that Grand Rapids must provide an explanation as to why construction must be completed within 100 m of the KWBZ as well as proposed mitigation to address the potential sensory impacts to wildlife who take refuge within the KWBZs.
Joann Skilnick Senior Wildlife Biologist AESRD Fort McMurray	Email	September 4, 2013 - Jessica Swanson of TERA sent an email to Joann Skilnick of AESRD during their telephone conversation on September 4, 2013 with the original Information Request from Joann Skilnick and the Environmental Alignment Sheets showing the proposed La Biche River crossing.
Joann Skilnick Senior Wildlife Biologist AESRD Fort McMurray	Email	September 20, 2013 - Joann Skilnick of AESRD sent an email to Jessica Swanson of TERA to clarify setbacks associated with KWBZs. - Construction can occur within the KWBZ, but standards require a setback of 100 m from valley breaks. AESRD recommends that entry and exit holes of the HDD are located 100 m from the valley break or edge.



**TABLE 1 Cont'd**

Name and Title	Method of Contact	Comments
Joann Skilnick Senior Wildlife Biologist AESRD Fort McMurray	Email	October 15, 2013 - Grand Rapids responded to Joann Skilnick's of AESRD comments regarding maintaining a minimum 100 m buffer from edge of valley breaks associated with the La Biche River. The design for the HDD crossing was revisited and the orientation of the drill was reversed to allow the entry point to be set as far back from the valley break as feasible. The exit point is located on cultivated lands.

### 3.0 RECOMMENDED ENVIRONMENTAL PROTECTION MEASURES

The following mitigation measures will be implemented by Grand Rapids to minimize overall impacts within the KWBZ associated with the La Biche River. Grand Rapids is aware of the environmental sensitivities in the KWBZ and is committed to the measures outlined below.

General pipeline mitigation measures are provided in the Project-specific Environmental Protection Plan (EPP) (TERA 2014), including mitigation measures such as general wildlife mitigation (Section 7.1 of the EPP) and access management (Sections 6.0, 8.1 and 8.2 of the EPP). Monitoring of the KWBZ will be included in the post-construction monitoring (PCM) program, which is discussed in Section 9.0 the EPP.

The mitigation measures below are specific to the route options within the KWBZ.

Activity/ Concern	Mitigation Measures
<i>Regulatory Consultation</i>	<ol style="list-style-type: none"> <li>1. Grand Rapids's Environmental Advisor and Environmental Inspector(s) will maintain an open line of communication with the appropriate regulator prior to and for the duration of the Project. See Appendix B for a list of contacts.</li> <li>2. Grand Rapids will submit an as-built map at the end of the construction season describing the work that has been completed for the Project.</li> </ol>
<i>Scheduling</i>	<ol style="list-style-type: none"> <li>3. All efforts will be made to conduct site preparation (<i>i.e.</i>, clearing and grading) prior to January 15.</li> <li>4. An HDD method is planned for construction of the pipeline crossing of the La Biche River. Clearing and site preparation for HDD activities is scheduled to start in November 2014.</li> <li>5. Ongoing consultation will be maintained with the AER related to Project scheduling and Grand Rapids will provide the AER with refined construction schedules as they become available.</li> </ol>
<i>Vegetation Clearing and Habitat Loss</i>	<ol style="list-style-type: none"> <li>6. Maintain habitat by using a trenchless crossing technique (<i>i.e.</i>, HDD) at the La Biche River.</li> <li>7. Reduce the amount of grading and grubbing, where feasible.</li> <li>8. Reduce the disturbance to vegetation and root systems by cutting, mowing or walking down shrubs and small diameter trees at ground level to facilitate rapid regeneration of vegetation. Use of snow padding, mulching or matting in select locations limits the need for cutting or mowing shrubs and small trees and facilitates regeneration of native vegetation.</li> <li>9. Where segments of the right-of-way require rollback for access management or erosion control, ensure sufficient timber of appropriate size is available.</li> </ol>
<i>Access Management and Line-of-Sight</i>	<ol style="list-style-type: none"> <li>10. No new permanent access is planned for the Project within the KWBZ.</li> <li>11. Access to/from the exit and entry points will be via the proposed pipeline right-of-way.</li> <li>12. Restrict all construction activities to the approved, surveyed right-of-way and approved temporary workspace and shoo-flies, and existing roads. All construction traffic will adhere to safety and road closure regulations.</li> <li>13. Access into KWBZ will be restricted to essential Project staff and signs will be placed at the start and end of access roads to deter non-Project traffic.</li> </ol>
<i>Reclamation and Habitat Restoration</i>	<ol style="list-style-type: none"> <li>14. Limit access to the right-of-way within the KWBZ during reclamation and operations, whenever possible, through the use of existing roads or aerial inspections.</li> <li>15. Natural recovery is the preferred method of reclamation.</li> </ol>

<b>Activity/ Concern</b>	<b>Mitigation Measures</b>
<i>Reclamation and Habitat Restoration (cont'd)</i>	<ol style="list-style-type: none"><li>16. Strategic seedling planting (tree and/or shrub) will be implemented at select upland sites. Locations will be determined by the Environmental Inspector, in consultation with the AER.</li><li>17. Woody debris rollback (e.g., tops and stumps or logs) will be used to inhibit human travel over areas of revegetated right-of-way in an effort to promote prompt vegetation recovery.</li><li>18. Remedial measures to control Noxious weed infestation areas will be implemented as required in consultation with the AER.</li></ol>
<i>PCM</i>	<ol style="list-style-type: none"><li>19. PCM will include monitoring of vegetation restoration success and will commence following the first full growing season after construction clean-up.</li><li>20. Supplemental seeding of native species or seedling planting will be implemented to assist in the revegetation process in areas where there is soil erosion or where vegetation cover is sparse.</li></ol>

## 4.0 REFERENCES

### 4.1 Literature Cited

- Alberta Environment and Sustainable Resource Development. 2014. Wildlife Sensitivity Data Sets (digital files). Edmonton, AB. Available: <http://esrd.alberta.ca/forms-maps-services/maps/wildlife-sensitivity-maps/default.aspx>. Acquired: April 2013-March 2014. Last Update Check: June 4, 2014.
- Alberta Environment. 2006. Lac La Biche Management Area. *Water Act* Code of Practice Management Area Maps. Prepared by Alberta Environment and Alberta Sustainable Resource Development, Finance and Administration Division, Resource Information Management Branch, Government of Alberta.
- Alberta Sustainable Resource Development. 2010. Recommended Land Use Guidelines: Key Wildlife and Biodiversity Zones. Fish and Wildlife Service Division. Edmonton, AB.
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- TERA, a CH2M HILL Company. 2014. Environmental Protection Plan for the Proposed Grand Rapids Pipeline GP Ltd. Grand Rapids Pipeline Project. Prepared for Grand Rapids Pipeline GP Ltd.

### 4.2 GIS Data and Mapping References

*This subsection includes references cited on the figures accompanying this report.*

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TransCanada PipeLines Limited. 2014a. Proposed Route Options, KPs (digital files). Calgary, AB. Acquired: May 2014. Last Update Check: May 9, 2014.

TransCanada PipeLines Limited. 2014b. Proposed Compressor Station (digital files). Calgary, AB. Acquired: June 2014. Last Update Check: June 2, 2014.

## APPENDIX A

### PHOTOPLATES



Plate 1

View north along proposed Project to La Biche River showing existing cleared area (for an existing pipeline right-of-way) within the KWBZ associated with the La Biche River at 6-35-68-17 W4M (June 4, 2013).

## **APPENDIX B**

### **PROJECT CONTACT LIST**

#### **Project Contacts**

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Grand Rapids Environmental  
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