

**PARKLAND COUNTY
BYLAW 2016-12**

**BEING A BYLAW OF PARKLAND COUNTY FOR THE PURPOSES OF ADOPTING
A NEW HIGHVALE END LAND USE AREA STRUCTURE PLAN**

WHEREAS Section 633 (1) of the *Municipal Government Act, R.S.A. 2000, Chapter M-26* and amendments thereto authorize a council to adopt an Area Structure Plan for the purpose of providing a framework for subsequent subdivision and development of an area of land within a municipality; and

WHEREAS the Council of Parkland County deems it appropriate and desirable to adopt a new Area Structure Plan for the Highvale area; and

WHEREAS the Highvale End Land Use Area Structure Plan Bylaw 28-97, and amending Bylaws 40-2006 and 2014-25 are no longer required;

NOW THEREFORE the Council of Parkland County duly assembled and under the authority of the *Municipal Government Act*, as amended, hereby enacts the following:

1. That the "Highvale End Land Use Area Structure Plan" attached hereto and forming part of this bylaw, is hereby adopted.
2. That the Highvale End Land Use Area Structure Plan Bylaw 28-97, and amending Bylaws 40-2006 and 2014-25 are hereby rescinded.

AND THAT this bylaw shall come into force and effect from third and final reading and signing thereof.

READ A FIRST TIME this 1st day of May, 2016

PUBLIC HEARING held this 12th day of July, 2016 and this 27th day of September, 2016.

READ A SECOND TIME this 27th day of September, 2016.

READ A THIRD TIME AND FINAL TIME this 27th day of September, 2016.



Mayor



Chief Administrative Officer

Highvale End Land Use Area Structure Plan



September 2016



Engineering
and Land Services



parkland
county

Acknowledgements

The following people are recognized for their insights and dedication to the completion of this Area Structure Plan:

Garry MacDougall, Committee on Keephills Environment
Eric Vanderwell, Committee on Keephills Environment
Erin White, Committee on Keephills Environment
Dan Kuchmak, TransAlta Generation Partnership
Mark Vasilcin, TransAlta Generation Partnership
Cheryl McNeil, TransAlta Generation Partnership
Councillor John McNab, Parkland County
Peter Vana, Parkland County
Martin Frigo, Parkland County
Deanna Cambridge, Parkland County

We would also like to thank the Committee on Keephills Environment (COKE), area landowners and members of the public who attended meetings and provided comments about the ASP.

Table of Contents

1.0	Plan Disclaimer	1
2.0	Introduction	2
2.1	Plan Preparation.....	2
3.0	Policy Context	3
3.1	Municipal Government Act.....	3
3.2	Capital Region Growth Plan 1.0	3
3.3	Municipal Development Plan	4
3.4	County Plans	4
4.0	Regional and Local Context	6
4.1	Size and Location	6
4.2	Land Ownership	6
4.3	Constraints to Development	6
5.0	Development Plan	14
5.1	Community Vision Statement	14
5.2	Goals and Objectives	14
6.0	Land Use Policies	15
6.1	Detailed Plans	15
6.2	Agricultural Development.....	15
6.3	Hamlet of Keephills.....	16
6.4	Country Residential Development	17
6.5	Commercial and Industrial Development.....	17
6.6	Recreation, Parks and Open Space	18
6.7	Heritage	19
6.8	Environment	20
6.9	Crown Land	21
6.10	Transportation Network	21
6.11	Servicing and Utilities	23
6.12	Referrals.....	25
7.0	Plan Statistics	26
8.0	Development Staging and Implementation	27
8.1	Development Staging	27
8.2	Implementation.....	27

Executive Summary

Overview

The Highvale End Land Use Area Structure Plan (ASP or Plan) establishes a planning framework for future land use in the area known as TransAlta's Highvale Mine and surrounding lands which include the Hamlet of Keephills. This ASP provides a future land use concept for the area; it integrates future development opportunities, agricultural and recreational uses, designated environmental areas; identifies a transportation network, and aligns with the community's vision:

The Highvale area has a history that is celebrated, ecosystems that are healthy and biodiverse, a growing Hamlet in Keephills, active and passive recreational amenities for residents and visitors, and an economic base built on agriculture and strategically located commercial and industrial employment areas.

The ASP is a statutory land use plan that replaces the 1997 ASP. An update to the ASP is required at this time because:

- The plan area has undergone substantial changes, including approval of the Sundance 7 gas fired power plant and the expansion of the mine boundary to include pits 8 and 9;
- As part of the mine licensing approval process, reclamation plans for the mine were submitted by TransAlta in 2015 to the Alberta Energy Regulator (AER). ASP policies need to reflect the submitted reclamation plan; and,
- ASP policies need to be regularly updated to align with existing municipal plans such as the Municipal Development Plan (MDP).

Public Engagement

Extensive engagement was undertaken to complete the Plan update. This included the Steering Committee, three resident engagements, and departmental engagement. Staff from County departments were engaged throughout the project to ensure ASP policies align with existing County plans.

ASP Policy Highlights

Land Use Concept

The proposed land uses for the Highvale mine (post reclamation) consist mainly of agricultural, recreational, and conservation lands, with potential strategic development of industrial and commercial nodes. Multi-parcel subdivision (country residential) development may be considered in parts of the plan area, with the majority of residential development directed to the Hamlet of Keephills.

Agriculture

For lands within the current Highvale Mine permit boundary, a maximum of one lot may be subdivided from a quarter section, due to the nature of groundwater resources post reclamation and the desire to retain larger tracts of agricultural lands for agricultural purposes. For lands outside the current Highvale Mine permit boundary, a maximum of four lots may be subdivided from a quarter section, unless otherwise allowed in this Plan, other Statutory Plan, or Outline Plan. CFO's may be permitted in the Plan area when in compliance with provincial regulations and Parkland County's MDP and the Wabamun Lake Sub-Watershed Plan which is expected to be approved later in 2016.

Residential and Hamlet Development

Residential development will be supported in the Plan area in several forms including farmstead development, potential country residential development when developed in accordance with this ASP, and residential development in the Hamlet of Keephills. All future country residential development shall comply with policies outlined in this ASP. Country residential development will also be encouraged adjacent to the Hamlet of Keephills with development primarily focused to the hamlet to support the development of Keephills as a complete community, ASP policies acknowledge the importance of the Keephills library, community hall and school site as a community asset.

Commercial and Industrial Development

Heavy industrial land uses will be prohibited in the plan area post reclamation. Strategic commercial and local commercial development will be supported in the plan area. ASP policies acknowledge existing industrial sites and the repurposing of area infrastructure for future industrial and commercial opportunities. Future resource extraction operations can be considered in the plan area when operations comply with all provincial and municipal regulations and permit approvals, follow best management practices, and do not conflict with agricultural operations.

Environment

ASP policies protect existing Environmentally Sensitive Areas (ESAs), and future end pit lakes and wetlands for their environmental and recreational value. The ASP also acknowledges existing (and future) wildlife and wetland habitats, reforestation opportunities, and setbacks for watercourses. ASP policies also acknowledge the need to address the control of sediment flowing to Wabamun Lake and the North Saskatchewan River.

Transportation Network, Servicing and Utilities

The ASP outlines roadways which will remain open during mining operations, as well as roadways constructed after land reclamation. The ASP transportation network aligns with the County's Draft Transportation Master Plan mapping.

All development in the plan area will require private on-site servicing. Higher density development in the Hamlet of Keephills will require community water and sanitary systems. The ASP outlines several constraints to servicing, and advises how developments can overcome these constraints.

Recreation and Open Space

The ASP proposes a conceptual recreational trail linking Wabamun Lake to the North Saskatchewan River through the Hamlet of Keephills. This non-motorized trail would be developed as demand warrants and resources permit. The ASP also proposes a large park to be located south of Lake Wabamun. Park location, size and programming will be determined in the County's Parks, Recreation, and Culture Master Plan.

Development Staging, Implementation, and Alberta Climate Leadership Plan

Final reclamation certification on mine lands will be completed by 2070. All reclamation activities are regulated by the Alberta Energy Regulator (AER). The County will have land use jurisdiction over mine lands after a reclamation certificate has been issued by the AER.

The ASP will require amendments to the Municipal Development Plan (MDP), and Land Use Bylaw. Agreements with TransAlta will need to be established for land acquisition, and an implementation strategy developed for the ASP.

Land reclamation and development staging may be expedited by the Government of Alberta's Climate Leadership Plan. The ASP will be updated once more information is provided on the strategy.

Summary

The ASP will guide future planning and development decisions within the Plan area. More detailed plans may be required for any future development in order to specifically address land uses, historical and environmental matters, as well as transportation and servicing requirements. The ASP will be reviewed at minimum every 5 years unless significant government policies warrant a review sooner. The Highvale ASP will maintain consistency and align with provincial and municipal plans, while best reflecting development demand and community and resident input.

1.0 Plan Disclaimer

This Area Structure Plan (ASP) reflects current conditions as of August 2016 and the mining area licensed to TransAlta by the Alberta Energy Regulator. Due to the Government of Alberta's provincial policy to phase out coal extraction by 2030, alternative planning and reclamation of the Highvale Mine may follow to meet this goal. Accordingly, this ASP shall be updated with new information from TransAlta as it endeavours to meet provincial policy. At this time reclamation plans remain the same.

The ASP will be reviewed every five years or sooner. Significant changes as a result of government policy may expedite the review of the ASP on timelines agreed to in the future by TransAlta, Parkland County and local residents.

2.0 Introduction

The purpose of the Highvale End Land Use Area Structure Plan (ASP or Plan) is to establish a framework for future land use planning for TransAlta's Highvale Mine area and surrounding lands, including the Hamlet of Keephills. This ASP provides a future land use concept for the area that integrates agricultural, residential, commercial and industrial development opportunities with recreational uses, designated environmental areas, and a future transportation network.

The County has jurisdiction over lands outside the Mine Permit Boundary and will have jurisdiction on Mine lands after a reclamation certificate is issued by the Alberta Energy Regulator (AER) and other obligations are completed. The County does not impose a timeline for reclamation or reclamation conditions.

2.1 Plan Preparation

The preparation of the ASP was a collaborative effort between County Council, Administration, the Project Planning Committee, and ISL Engineering and Land Services Ltd. This collaborative process included the following public engagement activities:

- A project launch was advertised on the County website, Parkland Communicator, Community Voice, Spruce Grove Examiner, and the Stony Plain Reporter;
- A Project Steering Committee was formed to oversee the preparation of the ASP. The Committee included representatives from Parkland County, TransAlta, and the Committee on Keephills Environment (COKE). The Steering Committee met three (3) times throughout the project;
- County staff and referral agencies were contacted to obtain input on current and future requirements;
- A public open house was held on May 28, 2015 to gather perspectives and obtain input on hopes for and concerns in the Plan area;
- A public workshop was held on November 5, 2015 to review the Plan vision and proposed policy directions;
- A public open house was held on March 1, 2016 to review the draft ASP;
- A letter of invitation was sent to all residents in and adjacent to the Plan area and the Paul Band First Nation to encourage attendance for each open house and the workshop. The events were also advertised on the Parkland County website, in the Parkland Communicator, and in ads placed in both the Spruce Grove Examiner and Stony Plain Reporter and other relevant newspapers (where applicable). In addition, social media (Facebook and Twitter) messages were distributed through Parkland County accounts;
- Formal input at each open house and the workshop was gathered via feedback sheets and/or workbooks that respondents could fill out and submit at the event or return by fax or email. The materials were also available online on the project website; and
- The Public Hearing was postponed and the Steering Committee met to review comments from the Public Hearing prior to Council approving the final version of the Plan.

A summary of the public engagement activities and the feedback provided to date is contained in a separate document titled "Highvale End Land Use Area Structure Plan Public Engagement: What We Heard Report".

3.0 Policy Context

Future development in the Plan area will be subject to the relevant provincial legislation and County plans and policies that apply to the Plan area. The ASP must meet the requirements of the *Municipal Government Act*, conform to the principles and policies of the *Capital Region Growth Plan*, and meet the intent of the County's plans and policies. The following information describes the applicable requirements of the legislative context and directs the ASPs response.

3.1 Municipal Government Act

The *Municipal Government Act* (MGA) allows municipalities, such as Parkland County, to create a detailed framework for the subsequent subdivision and development of an area of land through a planning document called an Area Structure Plan (ASP). Section 633 of the MGA states that an ASP must describe:

- The sequence of development proposed for the area;
- The land uses proposed for the area;
- The density of population proposed for the area;
- The general location of major transportation routes and public utilities; and
- May also contain any other matters that County Council considers necessary.

This ASP meets the requirements of the MGA by describing that:

- Development will occur on Highvale Mine lands after reclamation certificates have been issued and on surrounding lands within the Plan area in accordance with market demand;
- Land uses for the Plan area are primarily agricultural, with new residential development occurring primarily through farmsteads, country residential development (when in compliance with the ASP) and in the Hamlet of Keephills;
- Development in the plan area will be encouraged in the Hamlet of Keephills;
- Future recreational opportunities and environmentally sensitive areas will be identified;
- The projected population for the Plan area is 3,313. These population totals include existing and projected new residents. Population values in the ASP may ultimately be higher than proposed due to potential new country residential development;
- The transportation network is composed of Highway 627 and Highway 759, and local roads that provide east/west and north/south connections. The ASP re-establishes the transportation network based on the future land use pattern. Development is served by private water and sanitary servicing; and
- The ASP reflects TransAlta's current mining locations as of 2016, reclamation plans and obligations; and responds to the interests and concerns expressed by area residents as an outcome of the consultation process for the ASPs development.

3.2 Capital Region Growth Plan 1.0

The Highvale End Land Use ASP complies with the relevant principles and policies of the *Capital Region Growth Plan* (CRGP) 1.0, and does not require referral to the Capital Region Board.

3.3 Municipal Development Plan

The *Municipal Development Plan* (MDP), Bylaw 37-2007, as amended, is the primary municipal land use policy document for the County. The MDP provides a framework for the future growth and development of Parkland County. The MDP guides future development by describing the County's overall development vision, goals, objectives and corresponding policies to implement the vision. The primary goals of the MDP are to protect agricultural lands, identify locations for residential growth, accommodate heavy industry and resource extraction activities, identify environmentally significant areas for protection, and maintain an efficient roadway system.

The ASP complies with the relevant policies and maps of the Parkland County MDP. In accordance with the MDP the ASP:

- Encourages ongoing agricultural operations around the Highvale Mine;
- Supports potential new country residential development;
- Designates lands for commercial and industrial development; and
- Identifies environmentally significant areas and encourages their protection.

3.4 County Plans

This section outlines other relevant plans, studies and reports that have been reviewed as part of the preparation of this ASP and identifies how the ASP complies with those plans, studies and reports.

1. Existing Highvale End Land Use Plan Bylaw No. 28-97

The existing *Highvale End Land Use ASP*, adopted in 1997 by Bylaw No. 28-97, created policies for Highvale Mine after reclamation. The new ASP generally follows the format of the existing ASP, and identifies the following key policy areas: Agricultural Development; Commercial and Industrial Development; Recreation, Parks and Open Space; Environment; Transportation Network; and Servicing and Utilities. The new ASP also includes new policy areas, such as lands adjacent to the Highvale Mine, Hamlet of Keephills, and heritage sites, which were not considered in the 1997 ASP. The policies identified within each of these key policy areas address identified constraints to development.

2. Environmental Conservation Master Plan

The *Environmental Conservation Master Plan* (ECMP), June 2014, presents a portfolio of Environmentally Sensitive Areas (ESAs) within the County, and provides best management practices for land development activities to protect and/or restore ESAs. The ECMP identifies six ESAs within the Highvale Mine site. This ASP identifies these ESAs and encourages their protection.

3. Wabamun Lake Sub-Watershed Land Use Plan

The Wabamun Lake Sub-Watershed Land Use Plan (WLSLUP) is under development. The WLSLUP study area shares lands with the northern portion the Highvale End Land Use ASP. Consequently, the policies of the two plans will be aligned to ensure consistency of approach and policy and a healthy watershed and lake.

In summary, the WLSLUP describes historical activity at Wabamun Lake, the state of surface water quantity and quality, wildlife and fish potential, invasive species, vegetation cover, as well as wetland and riparian areas.

4. Draft Transportation Master Plan (under review)

The *Draft Transportation Master Plan* (TMP), December 2014, presents the ultimate roadway classification for the County and interim (2031) roadway classification. For the ASP area, the ultimate scenario proposes a north/south minor collector road along Range Road 52 and east/west minor collector roads at Langley Road and Burtonsville Road. The interim scenario proposes the same minor collector roads, with the exception of the southern portion of the north/south minor collector road along Range Road 52. The new ASP provides a road network that meets the ultimate and interim roadway classification identified in the TMP.

5. Recreation, Parks and Open Spaces Master Plan 2009 (under review)

The Recreation, Parks and Open Spaces Master Plan (May 2009) is currently being reviewed. The current Plan, presents a long term view and strategic plan for recreation and parks planning in the County. The goals of the plan describe that the County should: provide a greater diversity of leisure opportunities; optimize its supply of municipal reserve lands; and, sustainably manage environmentally sensitive areas. The new ASP meets the intent of these goals by: identifying lands for trails and parks, working to retain the Keephills Community Hall, and identifying environmentally sensitive areas and encouraging their protection through environmental reserve designations or other means. The Plan is currently being updated by the County. Updates to the ASP shall consider the new Master Plan in future planning.

6. Fire Services Master Plan 2009 (under review)

The *Fire Services Master Plan*, July 2009, provides a comprehensive assessment of Parkland County's Emergency Service. A portion of the ASP is located within Zone 4 – Wabamun, Zone 6 – Tomahawk, and Zone 7 - Seba Beach; however, the majority of the ASP lands including the Hamlet of



Wabamun Lake near Sundance Generating Plant. Courtesy of TransAlta

Keephills are located outside the boundary of any other Zone. The *Fire Services Master Plan* assesses risks related to: the Highvale Mine and its generating plants; lake rescues; and structural fires. Adequate response times for lands within the ASP boundary will need to meet County requirements.

The Fire Services Master Plan is currently being reviewed by the County. Subsequent updates to the ASP shall consider the Master Plan in future planning.

4.0 Regional and Local Context

This section describes the regional context and existing physical conditions for the ASP lands and how mining operations have affected lands in the Highvale Mine area. An understanding of these conditions is necessary to identify opportunities and constraints for development.

4.1 Size and Location

The Plan area is located in the western portion of the County, as shown on Map 1, and consists of 28,924 ha. The Plan area is bound by Sundance Road, Wabamun Lake and Wabamun Indian Reserve (Paul Band First Nation) No. 133A to the north, the North Saskatchewan River to the south and southeast. The most eastern and western portions of the Plan area are bounded by Range Road 32 and Range Road 61, respectively. The Plan area includes the Hamlet of Keepphills and TransAlta's Highvale Mine Permit Area (Pit 03 – Pit 09). The Mine Permit Area includes two distinct lands that are either A. Mine Disturbed Lands or B. Undisturbed Lands which extend to the Mine Permit boundary. These lands are identified in Map 2.

4.2 Land Ownership

The Plan area currently contains a mix of private, Crown and County ownership. The following table describes the ownership in the Plan area.

Table 4.1: Land Ownership

Ownership	Land Area (ha)	Percentage of Plan Area
TransAlta	15,595	53.9
Private	12,416	42.9
Crown	808	2.8
County	105	0.4
Total	28,924	100

4.3 Constraints to Development

This section identifies and summarizes the constraints to development in the Plan area. The constraints are addressed in Section 5.0, Development Plan.

4.3.1 Current Mining Activity

The mining activity at Highvale is considered a temporary land use; however, the Mine's current life expectancy, subject to market demand and provincial approvals and policy, is 2056. Individual pits may be dormant or active over the course of this timeframe and then closed out and reclaimed in phases. This has impacted and will impact agricultural operations and the transportation network within the Plan area. It is anticipated that all mined lands will be reclaimed and reclamation certification provided by 2070. TransAlta has advised that reclamation will follow the tentative schedule outlined in the following table (**Note: timelines may advance due to the Government of Alberta's Climate Leadership Plan**).

Table 4.2: Tentative Reclamation Schedule

Pit	Reclamation	Anticipated Certification
Pits 03-08	2016 to the mid-2020s	2030s
Pit 09	2022 - 2056	2070
Note: Timelines may advance due to the Provincial Climate Leadership Plan.		



Pit 08, located south of Keephills Generating Plant. Courtesy of TransAlta

4.3.2 Infrastructure

TransAlta will remove all physical infrastructure from the Mine area, including decommissioning of generating plants, cooling ponds, sewage lagoons, and waste storage facilities unless other agreements to re-purpose the infrastructure can be reached between TransAlta, the County, and regulatory bodies. Each of these sites must be remediated to an agricultural capability standard established by the appropriate regulator.

4.3.3 Transfer of Land Ownership

Subsequent to TransAlta's reclamation of the Mine and after the issuance of a reclamation certificate and the completion of other obligations, TransAlta may transfer ownership of reclaimed land to a prospective owner. The prospective owner should be made aware of existing site conditions and requirements of those lands through formal written notification prior to the finalization of sales agreements by TransAlta. After which, the prospective owner may develop the land in accordance with the policies and land use designations identified in the Parkland County MDP, Land Use Bylaw (LUB) and the Highvale End Land Use ASP.

4.3.4 Geology

The Plan area is underlain with clay deposits, namely: the Paskapoo Formation; Paskapoo Formation Ardley Coal Zone; Battle Formation; and Horseshoe Canyon Formation. The end result of the mining process provides a new topography and geology consisting of a mixture of clay, silts and sands with shale, siltstone and sandstones.

The topography of the Plan area after reclamation will consist of a northern and southern area that is created by an east/west ridge. The highpoint of the ridge, at a surface elevation of 850 m, is located at the approximate intersection of Range Road 43 and Township Road 514. In the north portion of the Plan area surface elevations are lowest at Wabamun Lake (730 m), and in the south, the North Saskatchewan River (670 m). A composite image of the Plan area's topography is shown on Map 2.

The behaviour of the new geology within the Highvale Mine lands will be variable and subject to settling and gradual saturation by groundwater

4.3.5 Groundwater

The groundwater resources in the Plan area may not be equivalent to the pre-mining situation. Findings from TransAlta's hydrogeological consultant in March 2016 conclude that there will be three separate possible sources of groundwater in the post-mining period:

1. From within the mined out footprint (mine spoil) - Groundwater in this zone is unlikely to provide a reliable post-mining supply due a generally low hydraulic conductivity and water quality which may not be suitable for domestic or livestock use¹;
2. From soil stratigraphic intervals deeper than the coal zone either within or outside of the mining footprint - Soil stratigraphic intervals beneath the Ardley Coal zone will remain intact following the completion of mining. Of these, the two remaining shallowest aquifer intervals are: the Lower Scollard Aquifer; and the Upper Horseshoe Canyon Aquifer. The permeability of the Lower Scollard Aquifer is generally low, with limited water supply potential. Sandstones within the Upper Horseshoe Canyon Aquifer represent the best potential post-mining groundwater source in bedrock below coal. To obtain this supply will likely require a deeper well strategy than groundwater extraction from the shallower aquifers; and
3. From intact surficial and bedrock aquifers outside of the mining footprint - The water supply potential of the intact aquifers outside of the mining footprint, both above and below coal will not be, with a few exceptions, materially changed by mining. Groundwater levels that may be drawn down in aquifers outside of the mining footprint will recover once mining operations cease.²

4.3.6 Surface Water

The Plan area is within the Wabamun Lake sub-watershed and North Saskatchewan River Watershed and contains existing waterbodies. The Highvale Mine lands will result in a reclaimed landscape consisting of six end pit lakes, ponds, and wetlands of varying sizes distributed throughout the reclaimed Mine area.



Wetland located on reclaimed land within Pit 03. Courtesy of TransAlta

The new waterbodies, lakes, ponds, and wetlands should be protected in the ASP as they will re-establish natural drainage patterns in the Plan area, control storm water runoff to Wabamun Lake or natural watercourses in the North Saskatchewan River basin, provide aquatic and fisheries habitat, and integrate wetlands and other drainage characteristics in the post-mining landscape. These characteristics are attractive to wildlife and will contribute to the re-establishment of natural systems and wildlife movement corridors when accompanied with natural plant communities. Map 3 illustrates a composite image of the waterbodies, specifically end pit lakes and cooling ponds, after reclamation inside and outside the

¹ The low hydraulic conductivity and water quality of the spoil are mainly a result of the natural salinity of the overburden materials and the overburden handling practices.

² The movement of lower quality mine spoil groundwater into adjacent unmined areas is considered unlikely due to the low hydraulic conductivity of the spoil, which will limit the downgradient release of spoil-derived compounds (which are naturally occurring in any case).

Mine area. Alternative water sources such as farm dugouts may be established.

4.3.7 Environmentally Sensitive Areas

The six environmentally significant areas (ESAs) shown on Map 4 contain species of management concern or important wildlife habitats. These include species such as the flat-topped white aster and the Sturgeon spawning grounds within the Sundance Natural Area ESA and the North Saskatchewan River ESA, respectively. Each of the six areas should be recognized as environmentally sensitive and managed appropriately.

4.3.8 Agricultural Land Uses

The Plan area prior to mining was predominantly an agricultural land base. Today, 46.3% of the Plan area is under agricultural production and 50% is used for mining. After reclamation of the Highvale Mine, 71.2% of the lands in the Plan area will have an agricultural capability of Class 3 and 4, while the balance of the lands will have an agricultural capability of Class 5, 6 and 7, as shown on Map 5. Consequently, the majority of the Plan area will be suitable for agriculture once reclamation has been completed.

4.3.9 Population in the Rural Area

Between 2001 and 2011, the rural area's population, which excludes the Hamlet of Keephills, declined from 408 to 249³. This represents an average annual population decline of 4.8%, and translates to a sparsely populated area of 0.86 people/km² or 0.42 dwellings/km².

A residential density of one farmstead/quarter section is recommended for the Highvale Mine permit boundary area to prevent fragmentation of these future agricultural areas. This equates to a population potential of 458 residents (183 dwellings) within 115.8 km², or residential densities of 4.0 people/km² or 1.6 dwellings/km².



Crops near the Keephills Generating Plant. Courtesy of TransAlta

Lands within the rural area beyond the Highvale Mine permit boundary may be developed at a density of four farmsteads/quarter section. This equates to a population potential of 2,650 residents (1,060 dwellings) within 167.9 km², or residential densities of 15.8 people/km² or 6.3 dwellings/km². This approach is supported by the Plan area's historical land use, regional planning policy, and current MDP policy.

³ The rural area population counts were derived from Statistics Canada's federal census dissemination blocks. At the time this project started, Statistics Canada only published population counts by dissemination blocks from its three most recent municipal censuses – 2011, 2006 and 2001. The ten-year period of 2001 through 2011 therefore represents the longest period of census data that was readily available for analysis. Note that Statistics Canada has since discontinued publishing the population counts by dissemination block from the 2001 census, so we are fortunate to have a longer sample size of analysis (ten years instead of five) for this project.

The total rural area, excluding the Hamlet of Keephills, therefore has a population potential of 3,108 residents (1,243 dwellings) within 283.7 km², or residential densities of 11.0 people/km² or 4.4 dwellings/km².

Lands that are suitable for country residential development as directed by this Plan may be considered for such development. Total population of the Plan area therefore, may exceed the proposed population counts presented in this ASP.

4.3.10 Hamlet of Keephills

The Hamlet of Keephills measures 64.9 ha in size and was established on its existing site in 1982. The current Hamlet has an active community hall and library with access to high speed internet. Currently, 16.9 ha of the Hamlet has been developed including 13.6 ha of net residential land subdivided into 33 privately serviced lots that are currently developed with 20 dwellings. The remaining 3.3 ha is developed with a community hall, a library and playing fields. The Hamlet currently has a population of 50 residents, which generates an average of 2.5 people per household. Assuming eventual full development of all 33 privately serviced lots, the subdivided portion of Keephills has a population potential of 83 residents living within 33 dwellings, and a residential density of 2.43 dwelling units/net residential hectare (du/nrha). The original hamlet consisted of large acreage developments.



Keephills community hall: Courtesy Keephills Community Association Facebook page, 2016)

The Hamlet has 28.6 ha of gross developable land remaining within its boundaries that are partially treed and partially under agricultural production. This land area translates to 20.0 ha of net residential land assuming 30% dedication for municipal reserve, public utilities and roads. Based on the current residential density of 2.43 du/nrha and existing land use districting, Keephills could accommodate another 122 residents and 49 dwellings, resulting in a total potential of 205 residents and 82 dwellings at full subdivision and build-out.

The balance of the Hamlet is located within a heavily vegetated ravine in the northeast that is protected as environmental reserve and within the Wabamun Creek ESA.

Future growth of the Hamlet is possible given its available land and existing community amenities. The Hamlet may need to look at intensifying development to ensure the future viability of existing community services and facilities such as the hall and library. Lot sizes could be reduced in size in the future to increase residential density and population to support a more efficient land use, and alternatives to water and sanitary systems (community systems) will be required to support increased densities. The Hamlet may also benefit from a connected trail network through the Wabamun Creek ESA.

Densities will need to be reconsidered as part of further work around developing Keephills as a complete community. The County commits to reviewing hamlet and hamlet densities as part of its ongoing planning initiatives.

4.3.11 Country Residential

Lands located between the Sundance Generating Plant and Wabamun Lake (part of SE 29-52-4-W5M) are districted Country Residential (CR) District in the County's Land Use Bylaw. These lands consist of approximately 16.4 ha or 0.07% of the Plan area and are currently developed with buildings accessory to the Sundance Generating Plant. These lands shall retain their Country Residential (CR) districting in the Land Use Bylaw.

The County may consider future Country Residential development in parts of the Plan area when such development has supportive engineering and technical studies showing land suitability, and meets all legal, permit, and regulatory requirements and approvals.

New residential development will be encouraged in the Hamlet of Keephills, other existing communities, and/or country residential developments to limit the premature fragmentation of agricultural land and to utilize existing hamlet infrastructure and facilities.

4.3.12 Conservation

Environmentally Sensitive Areas are identified on Map 4. There are no existing municipal reserve or environmental reserve parcels dedicated in the Plan area, excepting the environmental reserve lands in the Hamlet of Keephills. In addition, the only lands currently districted Conservation (PC) District in the County's Land Use Bylaw, lie adjacent to the south side of Burtonsville Road, and between Pit 09 and the North Saskatchewan River. These lands represent approximately 19.2 ha or 0.07% of the Plan area, and are undeveloped and heavily vegetated.



Beaver Creek Conversation Site located near Rosewood Beach.

The County's Community Scan and Analysis Report identified that the County has a deficiency of active and passive park space – areas traditionally designated as municipal reserve or environmental reserve parcels. Given the presence of Wabamun Lake, the North Saskatchewan River and valley, and the many watercourses and natural features of the Plan area, it would be appropriate to designate these lands as natural and wildlife conservation areas and open space for future parks and/or trail purposes.

4.3.13 Resource Extraction

Lands within the central portion of the Plan area, known as the Highvale Mine, have been or will be reclaimed by TransAlta in accordance with requirements of federal and provincial statutes and the requirements of the Alberta Energy Regulator.



Highvale Mine Truck and Shovel. Courtesy of TransAlta

Five sand and gravel extraction operations exist along the south boundary of the Plan area on the North Saskatchewan River. Any existing and future sand and gravel extraction operations will be required to comply with provincial requirements, Land Use Bylaw regulations and current best practices to mitigate nuisances and reclaim the lands.

4.3.14 Heritage Sites

The Plan area currently contains four documented cemeteries (Keephills, Highvale, Sundance and Woodlands) and one pioneer cemetery. The Plan area also has four provincially identified archeological and/or paleontological sites (one additional site, located in Pit 08, was removed with mining activity). Alberta Historic Resources Branch has advised that the majority the Plan area has not been assessed for archeological or paleontological resources. Given the history of the area and proximity to lakes and watercourses the Branch has advised that there are likely more significant sites in the Plan area. Developers will be required to prepare historical assessments to identify the presence of archeological or paleontological resources prior to future development occurring.

The Hamlet of Keephills, founded around the turn of the 20th century, was originally located on original Range Road 35 and 0.8 km north of Township Road 512. The Hamlet consisted of: a school, community hall, telephone exchange, a teacherage, and four private residences. The original Hamlet location should be recognized as an important historic site.

Information on the location and type of archaeological, heritage, and historic community resources in the Keephills area is found in the "South Sundance Thermal Power Plant Project Environmental Impact

Assessment Overview Report” (1976). Findings in the report should be used to inform future subdivision and development applications submitted to the County.

4.3.15 Transportation Network



Haul Road near Sundance Generating Plant: Courtesy of TransAlta

The existing road network within the Plan area consists of Provincial highways (759 and 627), County Township and Range Roads, and mine haul roads. The network is somewhat connected in the east and south, however mining activities limit connectivity throughout the Plan area. To maintain existing roadway connectivity throughout mining operations a number of County roads should remain open, as identified in Policy 6.9.2. To establish future connectivity after reclamation, an east/west Township Road near Pit 03, 04 and 05, and north/south connections between Range Road 42 and Range Road 52 are needed.

4.3.16 Servicing Network

There are three main industrial sites in the Plan area, TransAlta's Highvale Mine, TransAlta's Sundance Generating Plant site and TransAlta's Keephills Generating Plant site. These sites include cooling ponds, Keephills Ash Lagoon, and other supporting infrastructure. TransAlta will decommission and remove this infrastructure, unless other prior agreements to repurpose the infrastructure can be reached (see Section 4.3.2 – Infrastructure). However, until these sites and their associated infrastructure are remediated, provincially legislated setbacks, such as a 300 m setback for a sewage lagoon, landfill and waste station still apply.

4.3.17 Energy Infrastructure

The Plan area contains a mix of pipelines, wells and power lines, as illustrated on Map 6. The majority of the energy infrastructure is located south of Highway 627. As a requirement of reclamation, and in accordance with Alberta Energy Regulator (AER) requirements, pipelines and powerlines within TransAlta's mine area will be decommissioned and removed.



Power lines, located east of Keephills Generating Plant.
Courtesy of TransAlta

In 2017 a major power transmission corridor will be developed outside the eastern edge of the Plan area. The Capital Region Energy Corridor Master Plan conceptually identifies this corridor as “Genesee to Fort McMurray, 500kV” and its alignment originates at the Genesee Generating Plant and terminates in Fort McMurray. The development of the corridor and its alignment is subject to change. Development setbacks from this infrastructure in accordance with provincial regulations and AER requirements will apply.

5.0 Development Plan

This plan for future land use and development is based on a clear understanding of existing conditions, a vision of the future for the Plan area, and clear goals and objectives directing what must be accomplished to implement that vision. Sections 2, 3, and 4 described the Plan area's existing conditions.

This section will describe the County's vision, goals and objectives and policies, which will establish the planning framework to guide how the Highvale area will develop.

5.1 Community Vision Statement

The Community Vision Statement for the ASP states that:

The Highvale area has a history that is celebrated, ecosystems that are healthy and biodiverse, a growing Hamlet in Keephills, active and passive recreational amenities for residents and visitors, and an economic base built on agriculture and strategically located commercial and industrial employment areas.

5.2 Goals and Objectives

This section outlines the goals and objectives of the Plan. Based on a technical review of the Plan area and the consideration of community feedback on values and ideas for the Plan area obtained during public engagement activities, the following goals and objectives were identified:

- Make agriculture a priority by protecting lands with CLI Class 1-4 agricultural capability rating from non-agricultural related development;
- Designate lands with CLI Class 5 agricultural capability rating as agriculture and conservation areas;
- Designate lands with CLI Class 6 and 7 agricultural capability rating as recreational and wildlife areas;
- Confined Feeding Operations shall be permitted within the plan area in accordance with Provincial regulation, Parkland County's MDP and Wabamun Lake Sub-Watershed Plan;
- Focus new residential growth in the Hamlet of Keephills, existing communities and/or existing country residential developments;
- Provide opportunities for commercial and industrial uses in strategic areas identified in this plan, along Highway 627 and within existing industrial sites to potentially repurpose areas and infrastructure;
- Recognize and celebrate the history of the Plan area;
- Protect environmentally sensitive areas within the Plan area;
- Identify a conceptual trail network; and
- Provide a connected transportation network.

6.0

Land Use Policies

The land use concept for the Plan area accommodates a pattern of agricultural cultivation, new residential growth in the Hamlet of Keepphills, and a reflection of the County's past land use pattern, current community values, and desired future. The future land use concept is illustrated on Map 7.

6.1 Detailed Plans

Detailed Plans may be required for any future development in order to specifically address land uses, historical and environmental matters, as well as transportation and servicing requirements. Applicant's proposing development within the Plan area may be required to prepare an Outline Plan. At a meeting with the applicant, Parkland County will identify application submission requirements.

6.2 Agricultural Development

1. **Agricultural** – Lands with CLI Class 1 to Class 4 agricultural capability rating, as shown on Map 7, shall be developed for primarily agricultural related land uses. Non-agricultural related uses may be permitted on lands with CLI Class 1 to Class 4 agricultural capability rating provided that they:
 - a. Are resource extraction, public utilities, or extensive recreational uses;
 - b. Are not within identified Environmentally Sensitive Areas;
 - c. Do not impact existing agricultural operations; and
 - d. Have sufficient road access.
2. **Redistricting Agricultural Lands** – The re-districting and subdivision of these lands for non-agricultural related uses shall be prohibited, unless otherwise allowed for in this Plan, other Statutory Plans, or an Outline Plan.
3. **Agricultural/Natural Use** – Lands with CLI Class 5 agricultural capability rating, as shown on Map 7, shall be considered as a transition between agricultural lands and wildlife and wetland areas. Where appropriate, these lands may be developed for agriculture.
4. **Agricultural Subdivision** – The County may approve the consolidation of lands with CLI Class 1 to Class 5 agricultural capability rating for agricultural purposes.
5. **One Lot** – For reclaimed lands within the current Highvale Mine permit boundary, a maximum of one lot may be subdivided from a quarter section, unless otherwise allowed for in this Plan, other Statutory Plan, or Outline Plan. These lands shall be districted AGR – Agricultural Restricted District in the County's Land Use Bylaw.
6. **Four Lots** – For undisturbed lands, a maximum of four lots may be subdivided from a quarter section, unless otherwise allowed for in this Plan, any other Statutory Plan, or Outline Plan. These lands shall be districted AGG – Agricultural General District in the County's Land Use Bylaw.
7. **Confined Feeding Operation (CFO)** – CFO's may be permitted in the Plan area when in compliance with Provincial Regulations, Parkland County's MDP and the Wabamun Lake Sub-Watershed Plan.

8. **Natural Resource Conservation Board (NRCB)** – Parkland County shall work with the NRCB to share information and ensure appropriate environmental management of CFO's within the plan area.

6.3 Hamlet of Keephills

1. **Area Structure Plan (ASP)** – Parkland County may update this ASP for the Hamlet of Keephills.
2. **Hamlet Development** – The following types of development within the Hamlet shall be encouraged by the County:
 - a. A range of residential uses and types;
 - b. Local neighbourhood commercial uses;
 - c. Institutional uses such as churches, community hall, and schools;
 - d. Business industrial uses; and
 - e. Recreational uses.
3. **Keephills Community Facility** – The Keephills community hall and library are key Hamlet and County assets and community facilities. The County shall develop partnerships with organizations, including the local community with an interest in maintaining and sustaining these facilities. Potential uses may include (but are not limited to), a homeschool support centre and a distance learning centre as a means to fully utilize these facilities.
4. **Hamlet Growth** – The County will encourage Keephills as a Complete Community meeting the needs of residents for daily living at all ages and providing convenient access to a mix of jobs, local services, a full range of housing types, and community infrastructure.
5. **Hamlet Servicing** – Existing Hamlet developments developed at current densities may utilize private water and sanitary systems and be developed in accordance with the requirements of Alberta Municipal Affairs and Parkland County. New hamlet development at higher densities will require community water and sanitary systems to be developed.
6. **Requirements for Supporting Documents** – Developers may be required to provide supporting documents at the time of subdivision, outline plan or development permit application as outlined in the MDP or LUB. Such documents may include (but are not limited to) biophysical assessments, geotechnical and environmental assessments, and traffic impact assessments.

6.4 Country Residential Development

1. **Existing Country Residential** – lands south of Sundance Road (part of SE-29 -52-4-W5M) shall retain its Country Residential (CR) use.
2. **Country Residential Development in the Plan area** – The County may consider Country Residential (CR) development in the plan area if all of the following have been met:
 - a. Engineering, and technical studies have found the lands suitable for development. Technical studies that may be required by the County include but are not limited to, geotechnical, domestic groundwater, traffic impact, and biophysical assessments;
 - b. The proposed development complies with the Municipal Development Plan and the Land Use Bylaw; and,
 - c. The proposed development acknowledges findings from the Environmental Conservation Master Plan and any future non-statutory plans that the County may approve.
3. **Country residential development adjacent to the Hamlet of Keephills** – the County encourages the direction of new country residential (multi parcel) subdivision opportunities adjacent to the Hamlet of Keephills to utilize existing hamlet infrastructure and facilities. Requirements in this ASP for country residential development, and all other provincial and municipal plans, applications and permit approvals must be met by proposal applicants.

6.5 Commercial and Industrial Development

1. **Highway and Hamlet Commercial** – The establishment of local commercial development along Highway 627 at Range Road 32A, and commercial development at Highway 759 and Township Road 530 (Sundance Road), or local commercial within the Hamlet may be permitted, if the applicant can demonstrate:
 - a. The proposed use is compatible with adjacent uses;
 - b. The site is suitable in terms of soil stability, groundwater level, and drainage;
 - c. That impacts on the transportation network are addressed;
 - d. Conformity with relevant Statutory Plans, Outline Plan and the LUB; or
 - e. Where opportunities exist for commercial uses along Highway 627 and within the existing industrial sites to potentially repurpose areas and infrastructure
2. **Requirements for Supporting Documents** – Developers may be required to provide supporting documents at the time of subdivision, Outline Plan or development permit application as outlined in the MDP and LUB. Such documents may include (but are not limited to) biophysical assessments, geotechnical and environmental assessments, and traffic impact assessments.
3. **Development, Signage and Landscaping** – Highway 627 and Highway 759 for commercial or industrial developments are the primary gateways into the Highvale Plan area and any development, landscaping, or signage adjacent to these road rights-of-way shall be of a high standard.
4. **Home Based Businesses** – Home based businesses are encouraged as prescribed in existing County's LUB districts. Issues of compatibility with adjacent uses shall be addressed at the time of development permit application.
5. **Business and Medium Industrial** – Industrial land uses shall be business-oriented to medium in nature. Heavy industrial land uses shall be prohibited within the Plan area.

6. **Alternative Energy Use Site** – Subject to a feasibility study, the County may allow development of the lands designated as Business and Medium Industrial for an alternative energy use site and pilot project.
7. **Industrial Development** – Industrial development shall be permitted to locate:
 - a. In areas designated for industrial development by a Statutory Plan or Outline Plan;
 - b. Where opportunities exist for industrial uses along Highway 627 and within the existing industrial sites to potentially repurpose areas and infrastructure; or
 - c. In areas that do not conflict with adjacent land uses in terms of appearance, emissions, noise, or traffic generation, unless suitable buffers are provided, and has a closed loop sewage disposal system.
8. **Industrial Clusters and Spur Line** – Parkland County encourages:
 - a. The clustering of similar and compatible industrial businesses on business and medium industrial sites; and
 - b. The creation of spur lines by accommodating businesses that require rail transportation and proximity to railway rights-of-way.
9. **Resource Extraction** – New resource extraction operations can be considered in the Plan area provided that they:
 - a. Have sufficient road access;
 - b. Has mitigated impacts, or has no impact on existing agricultural operations;
 - c. Follow the best management practices identified in the County's *Environmental Conservation Master Plan*;
 - d. Comply with existing County and Alberta Environment and Parks statutory and non-statutory plans, approved policies, regulations and permit approvals; and
 - e. Are reclaimed to the satisfaction of the County and Alberta Environment and Parks.
10. **Mitigation** – The County may require the use of landscaping, screening, setbacks, the strategic location of outdoor storage or other controls to mitigate nuisance impacts between industrial and non-industrial development.

6.6 Recreation, Parks and Open Space

1. **Recreation** – A new north/south recreational trail network that links Wabamun Lake to the North Saskatchewan River through the Hamlet of Keephills shall be developed by the County.
 - a. The trail network, as shown on Map 7, is conceptual and the general alignment shall follow the Wabamun Creek ESA and along existing and future waterbodies and water courses. Final trail alignment will be determined by a functional planning study with standards for development outlined in the Parkland County *Parks, Recreation, and Culture Master Plan*.
 - b. In all cases, lands used for trail development will be public in nature unless prior agreements are in place between private landowners and the County. The conceptual trail alignment shall use road and utility rights-of-way, public utility lots, and municipal and environmental reserve lands.
 - c. Trail lands will be acquired through the use of Municipal Reserve and Environmental Reserve dedication at the time of subdivision.

- d. Trail sections shall be built as resources and demand warrants, and will be for passive use only (i.e. no motorized vehicles such as quads or skidoos).
 - e. Trail connections may be made in the future to the Sundance Natural Area, the Modeste Saskatchewan Natural Area and the Burtonsville Island Natural Area.
2. **Parks** – A large park located south of Wabamun Lake shall be developed by the County. The location and programming of the park shall be determined in the County's *Park, Recreation, and Culture Master Plan*:
- a. Lands around end pit lakes may be designated for parks, day use areas, or privately operated campgrounds and/or trails, and shall not conflict with agricultural land uses in terms of trespass, noise, traffic generation. The County's *Parks, Recreation, and Culture Master Plan* shall provide more specific guidance on these facilities;
 - b. Public access to shoreline areas shall be facilitated through the dedication of Municipal Reserve and/or Environmental Reserve; and
 - c. The County shall partner with Alberta Environment and Parks and Alberta Fish and Game Association to assist in the development of the park and in land acquisition.
3. **Open Space** – As a condition of subdivision approval, the County shall require the protection and conservation of environmentally sensitive areas, specifically those lands around the Sundance and Keephills Ponds, adjacent to end pit lakes, and along Wabamun Lake and the North Saskatchewan River, by dedication of Municipal Reserve and Environmental Reserve, the provision of Environmental Reserve Easements or Conservation Easement agreements, or by other statutory means as such identified in the *Municipal Government Act*, or the *Alberta Land Stewardship Act*.

6.7 Heritage

1. **Keeping History Alive** – The archeological, paleontological, and historical sites and cemeteries within the Plan area, as shown on Map 7, signify the history of the people and events within this portion of County. These sites and cemeteries shall be:
- a. Protected and programmed as interpretative parks and maintained; and
 - b. Connected to the transportation and/or open space/trail network.

Any proposed development or expansion to an existing development may require the completion of a Historic Resources Impact Assessment, as per the requirements of the Historic Resources Management Branch.

2. **Environmental Impact Assessment Report** – where required by the Subdivision and Development Authority, developers may be required to reference findings from the "South Sundance Thermal Power Project Environmental Impact Assessment Overview Report" (1976). Findings from the report should be used to inform future subdivision and development applications as it pertains to archaeological, heritage, and community issues in the Plan area.
3. **Hamlet of Keephills** – The original Hamlet of Keephills, identified in the location shown on Map 7, shall be recognized as an important historic site through the placement of interpretive signage.

6.8 Environment

1. **Waterfowl Habitat** – Lands around the decommissioned Sundance Cooling Pond and the Keephills Cooling Pond, as shown on Map 7, shall be identified as waterfowl habitat and designated as Environmental Reserve through the subdivision and development process, or protected through Environmental Reserve Easements, Conservation Easement agreements, and/or County acquisition through the Alternative Land Use Services (ALUS) program.
 - a. These lands may be developed for recreational purposes in accordance with a local Statutory Plan or Outline Plan.
2. **End Pit Lakes and Wetlands** – Lands around end pit lakes, wetlands, and lands with Class 6 and Class 7 agricultural capability, as shown on Map 7, are considered riparian and unsuitable for agricultural production. These lands:
 - a. Shall be classified as ESAs;
 - b. Shall be designated as Environmental Reserve through the subdivision and development process, or protected through Environmental Reserve Easements or Conservation Easement agreements and/or the ALUS program; and
 - c. May be developed for recreational purposes in accordance with a Statutory Plan or Outline Plan.
3. **Environmentally Sensitive Areas** – The ESAs described in the County's ECMP and by TransAlta, as shown on Map 7, shall be designated as ESAs. The ESAs should remain in a natural state unless otherwise identified:
 - a. The North Saskatchewan River ESA shall be designated as a habitat and movement corridor for wildlife, recreation corridor, and include designated public access areas;
 - b. The Wabamun Creek ESA shall be protected as a movement corridor for wildlife between the North Saskatchewan River valley and Wabamun Lake along Wabamun Creek;
 - c. The County encourages landowners to follow best practices for the management of natural areas, as identified in the County's *Environmental Conservation Master Plan*; and
 - d. The County shall protect ESAs through the subdivision and development process by designating these lands as Environmental Reserve, or entering into Environmental Reserve Easement or Conservation Easement agreements, and/or through the ALUS program.
4. **Wetland Inventory** – Upon reclamation of the Highvale Mine, the County shall create a wetland inventory in order to accurately account for any future wetland losses. Funds from wetland losses derived from development activities may be integrated into local stewardship and restoration efforts.
5. **Geotechnical Reports**
 - a. Development adjacent to the Highvale Mine lands should maintain a minimum separation distance from the Mine disturbed areas, as established by a geotechnical report prepared by a qualified professional.
 - b. Prior to development on reclaimed lands within the Mine disturbed areas, the applicant shall provide the County with a geotechnical report prepared by a qualified professional.
6. **Flood Plains, Slopes and Watercourses** – Future development will be directed away from flood plains, slopes and watercourses as regulated by the County's Land Use Bylaw.

7. **Reforestation** – Reforestation within the Highvale Mine lands shall be supported and protected through Environmental Reserve, Environmental Reserve Easement, or Conservation Easement taken at the time of subdivision.
8. **Wildlife Connectivity** – To provide sufficient wildlife movement corridors, a setback of 150 m from the shoreline of a waterbody or watercourse for any development is recommended. The specific setback for any development will be determined based upon the provision of recommendations prepared by a qualified biologist through a biophysical impact assessment, or as determined through the County's Riparian Setback Matrix Model.
9. **Sediment Control** – Parkland County, in conjunction with provincial approval agencies, will require the necessary studies to address pre and post development erosion and sedimentation control flowing towards Wabamun Lake and the North Saskatchewan River.

6.9 Crown Land

1. **Land Use** – The County shall support the use of Crown Lands for resource development, limited grazing, conservation, and recreational use.
2. **Notification** – The County will notify relevant government agencies of any proposed use of Crown Lands, and/or of lands containing wetlands prior to development.

6.10 Transportation Network

1. **Road Connections** – TransAlta will, as per the 2003 Memorandum of Agreement (MOA) and 2008 MOA with the County, provide rights-of-way to create roadways throughout the Plan area, as shown on Map 8, as part of the mine reclamation.
 - a. The location of any additional arterials, major collectors, or minor collector road rights-of-way shall:
 - i. Meet the requirements of the County's Transportation Master Plan;
 - ii. Minimize start-stop-movements in future road alignments; and
 - iii. Consider continuous road alignments rather than multiple corners and intersections and connections to existing transportation networks outside of the Plan boundary area.
 - b. The County will make improvements to Sundance Road to ensure it meets County design guidelines, such as widening and horizontal and vertical curves.
2. **Existing Roads Connections** – The following rights-of-way, as identified on Map 8, shall remain open during mine operations and after reclamation.
 - a. Township Road 524 from Highway 759 to the edge of the future realignment;
 - b. Range Road 55 from the south mine boundary to Township Road 524;
 - c. Township Road 523A from Range Road 55 to Range Road 54 (portions may be closed for mining purposes, subject to approval from Parkland County and the Province);
 - d. Range Road 52 from the north mine boundary to Township Road 524;
 - e. Township Road 524 from Range Road 53 to Range Road 52;
 - f. Range Road 45 from Highway 627 to where the road ends to the north (portions may be gated for mining purposes, subject to approval from Parkland County and the Province);
 - g. Range Road 42 from Highway 627 to Sundance Road; and
 - h. Sundance Road from Highway 759 to Range Road 42.

3. **Memorandum of Agreement (MOA)** – After approval of the Plan, Parkland County shall enter into a Memorandum of Agreement (MOA) with TransAlta. The MOA agreement between the County and TransAlta shall consider:
 - a. Connectivity throughout the plan area;
 - b. Access to future end land uses;
 - c. Provide access to reclaimed legal land parcels and roads impacted by mining;
 - d. Financial arrangements in developing the final road network; and
 - e. Existing commitments and obligations outlined in the 2003 and 2008 MOA's between Parkland County and TransAlta remain in place.
4. **Update of Map 8 – Transportation** – Map 8 – Transportation, shall be updated in a timely manner on the adoption of a new MOA between the County and TransAlta.
5. **Water Crossings** – All water crossings (i.e. watercourses, wetlands, lakes) within the Plan area shall be constructed in accordance with Parkland County standards.
 - a. The design of crossings shall consider the locations of existing wildlife corridors as well as the presence of fish and fish habitat. The crossing shall also incorporate any necessary features to maintain natural habitat connectivity and ecological integrity.
 - b. All water crossings require *Water Act* approval or notification (i.e. Code of Practice pursuant to *Water Act*) and potential consultation with Alberta Environment and Parks (AEP) prior to construction. Other environmental regulatory considerations may also apply including but not limited to the *Migratory Birds Convention Act*, *Fisheries Act*, *Wildlife Act*, *Public Lands Act* and/or the Alberta Wetland Policy.
6. **Road Right-of-Way Widening** – Rights-of-way adjacent to subdivision and development proposals may require widening. In such cases, dedication by caveat or plan of survey will be required at a width specified by the County if the site is located:
 - a. At the corner of a Township Road or a Range Road that meet. The right-of-way will be located along the frontage of the subdivision as well as the balance of the quarter section along both the Township Road and Range Road; or
 - b. In the middle of the quarter section or bordering another quarter with no road between them. The right-of-way will be located along the frontage of the subdivision and the balance of the quarter that runs along the particular Township Road or Range Road.
7. **Off-site Levy** – The County may consider the development of a future Highvale off-site levy to fund infrastructure improvements.
8. **Off-site Improvements** – As part of an agreement associated with the approval of a subdivision or the issuance of a development permit, the County may require that the developer pay for all or a portion of any public roadway or trail system.
9. **Design Standards** – All road rights-of-way shall be developed in accordance with the specifications of the County's design standards.
10. **Road Use Agreement** – A Road Use Agreement with the County will be required to address haul routes, maintenance and/or upgrading, dust control, and any other matters relative to the road use.

11. **Development Referral** – The County shall refer all ASP, ASP amendment, redistricting, subdivisions and development applications that include land located within 800 m of a highway to Alberta Transportation for comment.

6.11 Servicing and Utilities

1. **Site Servicing** – All existing developments shall be serviced by on-site water, sewer and all necessary shallow utilities. The County shall not support redistricting, subdivision, or development that does not address site servicing needs. All servicing shall comply with applicable federal and provincial regulations, County standards, and the policies of this section.
 - a. All costs associated with the construction of water, sewer, stormwater and utility infrastructure on a site shall be borne by the landowner/developer.
 - b. Where future developments in the Hamlet of Keephills propose a density greater than those currently existing in the hamlet, community water and sanitary systems will be required.
2. **Water Servicing**
 - a. Development on lands within the Highvale Mine footprint shall rely on local surface water or other sources (a piped system or cisterns) as post-mining groundwater quality is unlikely to provide a reliable post-mining supply due to a generally low hydraulic conductivity and water quality that is not suitable for domestic or livestock use. However, water may also be available from stratigraphic intervals deeper than the coal zone. Dugouts will require a development permit as prescribed in the Land Use Bylaw.
 - b. Development on lands outside the Highvale Mine footprint shall be serviced through on-site systems which may include existing domestic wells.
 - c. The County shall require developers to demonstrate proof of water supply if accessing groundwater, or identify proposed method of water servicing, for all developments within the Plan area.
 - i. Where lots are proposed to be served by cisterns, restrictive covenants shall be registered as a condition of subdivision approval, prohibiting the use of wells or other means of groundwater collection.
 - d. The County encourages all well users to register their use of groundwater under the *Water Act*.
 - e. The County may provide additional waterpoints and waterfills in strategic locations.
3. **Sanitary Servicing** – Any development shall install a septic tank, lagoon or treatment facility for sanitary servicing in accordance with provincial requirements.
 - a. As part of a subdivision or development permit application, the County shall require that developers submit information respecting the proposed location and type of sewage disposal system intended to serve the proposed development. The County may require that soil tests be undertaken by the developer to determine that the soils are suitable to accommodate on-site sewage disposal systems.
 - b. The County will not support any future development which does not comply with County or provincial standards as they relate to sanitary servicing.
 - c. The County may request additional information about a private sanitary system to ensure adequate compliance with County and provincial standards.
4. **Stormwater Management** – All multi-parcel subdivision and major development applications are required to submit a stormwater management report. The Subdivision or Development Authority may

require the submission of a stormwater management plan for any other subdivision or development proposal within the Plan area.

- a. The construction of stormwater management facilities shall adhere to the County's Stormwater Naturalization Policy C-ES04.
- b. The construction and operation of all stormwater facilities shall comply with Alberta Environment and Parks requirements and/or approvals.

5. **Stormwater Discharge** – All developments shall retain stormwater on site and discharge at a post-development rate that does not exceed pre-development release rates.

6. **Green Technologies** – The County will encourage developments to use green building and servicing technologies, such as LEED, BUILT Green or other green building standards for development. All new buildings shall strive to meet green building standards from a recognized standards program and use green infrastructure such as: green roofs, constructed wetlands, bioswales, landscaped ditches, rainfall harvesting, bio-retention cells, xeriscaping and permeable surfacing materials.

7. **Alternative Energy** – The County may undertake studies to consider the need and best locations for solar, geothermal, wind farm, or a greenhouse gas waste heat diversion projects.

8. **Setbacks from Utilities and Oil and Gas Facilities** – Until such time that TransAlta's Mine infrastructure is decommissioned and reclaimed, any development shall adhere to the setbacks identified in the following table.

- a. Any development shall be referred to TransAlta and/or the applicable utility provider to ensure setbacks are addressed and/or future plans for the utility or facility is considered.
- b. Developers will be responsible to notify the County and adhere to any other setbacks or regulation not mentioned in the table below.

Table 6.1: Development Setbacks

Utility/Facility	Setback
Sewage Lagoon	300 m (S. 12, Subdivision and Development Regulation)
Landfill	300 m (S. 13, Subdivision and Development Regulation)
Waste Transfer Station	300 m (Waste Control Regulation AR 192/96)
Power Lines	In accordance with the Alberta Electrical Utility Code
Pipelines	Pipeline Right-of-Way
Abandoned Well	5 m radius around the well (AER Directive 079)
Power Plants	In accordance with Alberta Utilities Commission Rule 007

9. **Emergency Service** – The County shall:
 - a. Review the *Fire Services Master Plan* to ensure the plan reflects the service demands, anticipated development and call volumes of the Plan area; and
 - b. Liaise with the RCMP to ensure police servicing levels are maintained in the Plan area.
10. **FireSmart and Wildfire Protection** – The County shall require developers to incorporate FireSmart principles and standards when preparing Outline Plans and multi-parcel subdivision plans to minimize the potential from wildfire damage.

6.12 Referrals

1. **Notification** – The County shall notify an adjacent municipality and/or First Nations if any development and/or planning initiatives are located adjacent to a municipality or First Nation boundary.

7.0 Plan Statistics

The Plan area currently contains a mix of agricultural, Hamlet, commercial, industrial, recreation, and environmentally sensitive areas, as shown on Map 7. The distribution of these uses is identified in the following table.

Table 7.1: Future Land Use

Land Use	Hectares (ha)	% of Total Area
Agricultural Land	21,508.9	74.0
Agricultural Mixed Use	2,859.1	9.9
Environmentally Sensitive Areas	3,274.6	11.3
Waterfowl Habitat, Recreation, End Pit Lakes	471.0	1.6
Wetlands (including End Pit Lakes)	338.2	1.2
Business and Medium Industrial	277.5	1.0
Provincial Natural Area	128.6	0.4
Hamlet	64.9	0.2
Commercial	1.0	0.0
Total	28,924	100

8.0 Development Staging and Implementation

8.1 Development Staging

Although the Mine's current life expectancy is 2056, it is anticipated that all mined lands will receive a reclamation certification by 2070. However, Pits 03-08 will receive reclamation certificates by the early 2030s or sooner, depending on current provincial approaches to resource extraction and development. By the 2030s, 74% of the Mine area will be reclaimed. Concurrent with the TransAlta reclamation timeline, the County will implement the following actions or initiatives, as identified in the following table, for each stage of reclamation.

Due to the Government of Alberta's approach to phase out coal extraction by 2030, alternative planning and expedited reclamation of the Highvale Mine may follow to meet this goal. Accordingly, this ASP shall be updated with new information from TransAlta as it endeavours to meet the Provincial approach. At this time reclamation plans remain the same.

Table 8.1: Post Reclamation Activities (anticipated as of March 2016)

Pit/Area	Reclamation	Reclamation Certification	Actions or Initiatives by the County (Post Reclamation)
Pits 03-08	2016 to the mid-2020s	2025 to 2030s	74%, or 8,433 ha of the 11,331.1 ha, of mine lands available for sale. - Wabamun Creek Trail, from Wabamun Lake to the North Saskatchewan River through Keephills, is near complete. - Road network near complete. - Alternative energy production site identified.
Pit 09	2022 - 2056	2070	- The remaining 26%, or 2,898.1 ha of 11,331.1 ha Mine lands, available for sale. - Wabamun Creek Trail, complete. - Road network complete.

8.2 Implementation

- Climate Leadership Plan** – The ASP will be updated when substantial information on the Government of Alberta's approach to phasing out coal has been provided. Appropriate changes to the ASP policies and land use mapping will be undertaken where applicable.
- MDP Amendments** – To implement the ASP, the following MDP amendments are required:
 - Lands within the Highvale Mine permit boundary designated as Industrial Commercial in the County's MDP shall be re-designated Agricultural, Environmentally Significant, and Industrial/Commercial, as outlined in this Plan, at the time of reclamation certification.
 - The Confined Feeding Operation Overlay (Map 4) of the MDP shall be amended to account for the location of the future waterbodies, and, where applicable, findings from the Wabamun Sub-Watershed Land Use Plan.
 - The MDP shall identify that Keephills will accommodate future residential growth.

3. **LUB Amendments** – To implement the ASP, the following LUB amendments are required:
 - a. Lands identified as Highvale Mine Pits 08 and 09 shall be redesignated to Direct Control Area 2.
4. **ASP Review** – The Highvale End Land Use ASP shall be reviewed every five years, and amended as necessary, to reflect provincial (i.e. Provincial coal policies), regional (i.e. Capital Region Growth Plan policies) or municipal policy (i.e. Transportation Master Plan updates), updates to the Parkland County/TransAlta Memorandum of Agreement, or TransAlta's mining timelines, sequence of mining or reclamation plans, or any relevant new information.
5. **Reserve Land Acquisition** – In order for the County to acquire lands for Municipal or Environmental Reserve purposes, park lands, and/or trail networks and recreation uses for the benefit of County residents, TransAlta and Parkland County shall establish a protocol that allows the County to purchase reclaimed and other lands.
6. **Sales Agreements** – Prior to entering into any sales agreement with a third party, TransAlta would have met the obligations under the mine license and environmental approvals required to obtain a Reclamation Certificate as outlined by the Alberta Energy Regulator. Any sales agreement between TransAlta and a prospective third party owner shall be negotiated as between the third party and TransAlta but at a minimum would include: disclosure of any then current mine activities; provision of the Reclamation Certification to the purchaser (where applicable), negotiation of any permitted encumbrances (which may include municipal reserve requirements, infrastructure and servicing requirements, public utility lot locations). Any additional assessments or studies shall be discussed and agreed upon by the prospective owner and TransAlta during the negotiation process.

Highvale End Land Use ASP Update

Map 1: Study Area

 Study

 Summer Village

 Indian Reserve

 Hamlet

 Railroad

 Highway

 County Road

 Water Body

 Water Course

 Provincial Natural

 Future Natural Gas-fired Electricity Generating Plant

 Mine Permit Boundary

Mine Licenses

 Pit 03

 Pit 04

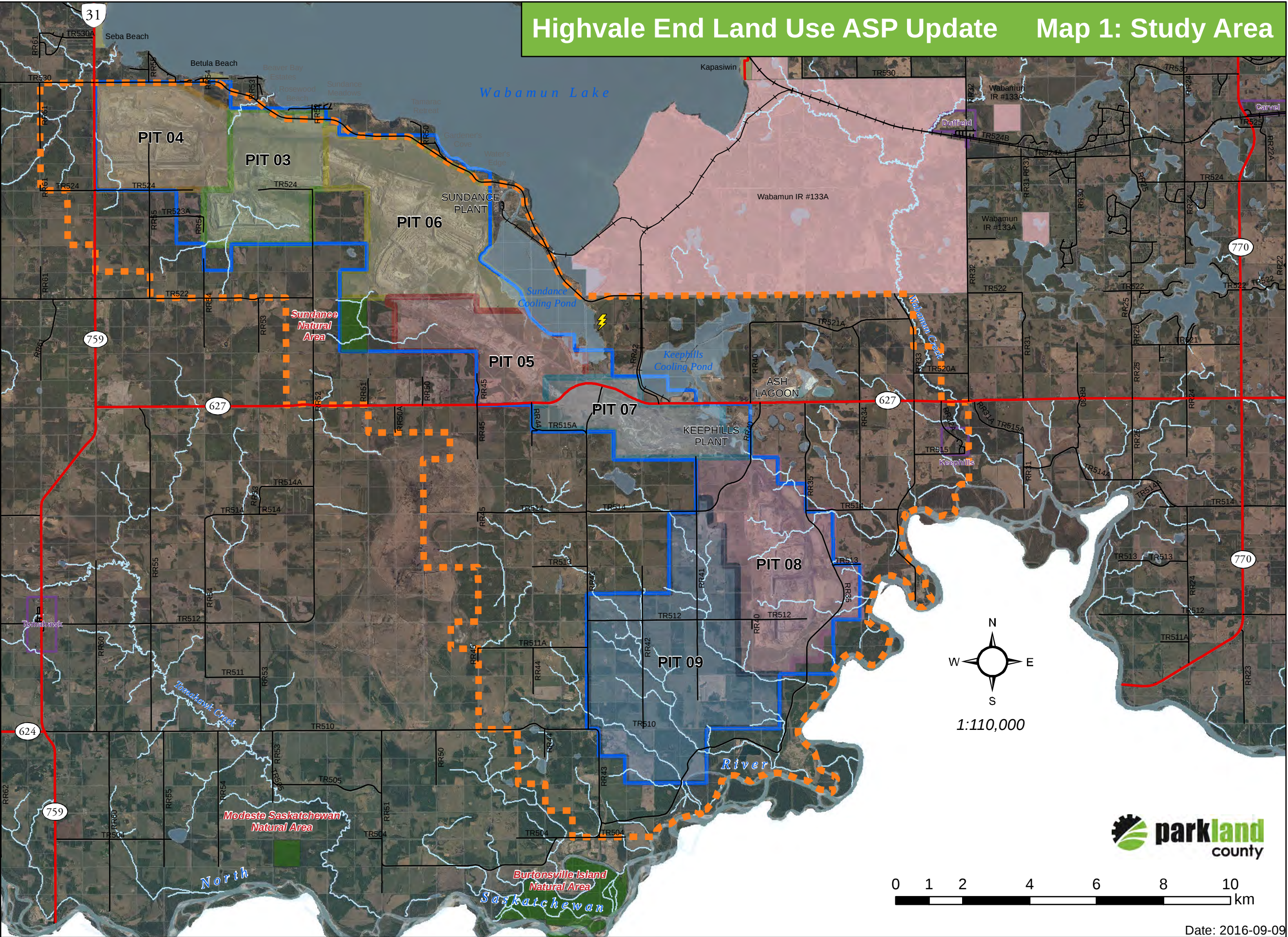
 Pit 05

 Pit 06

 Pit 07

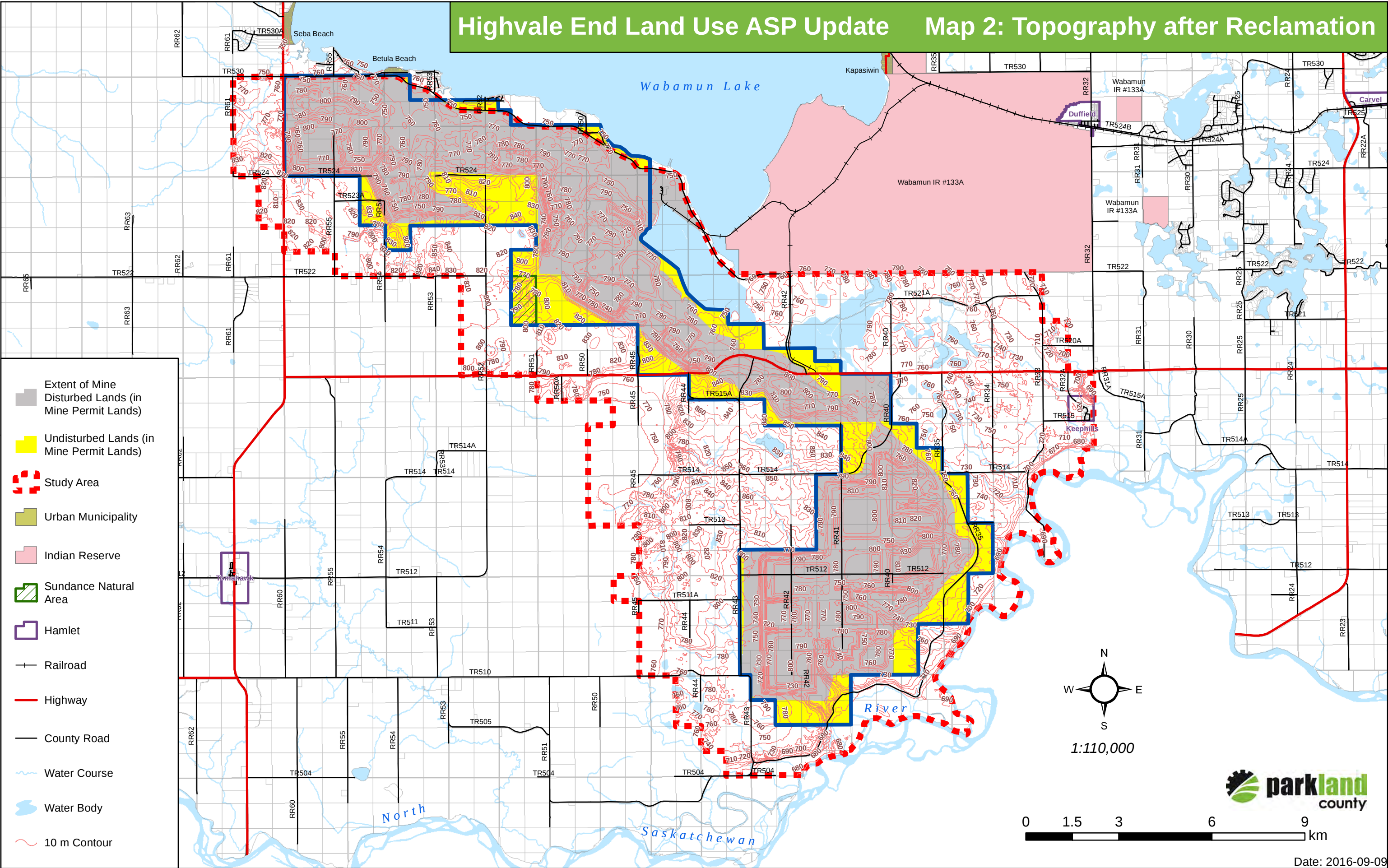
 Pit 08

 Pit 09



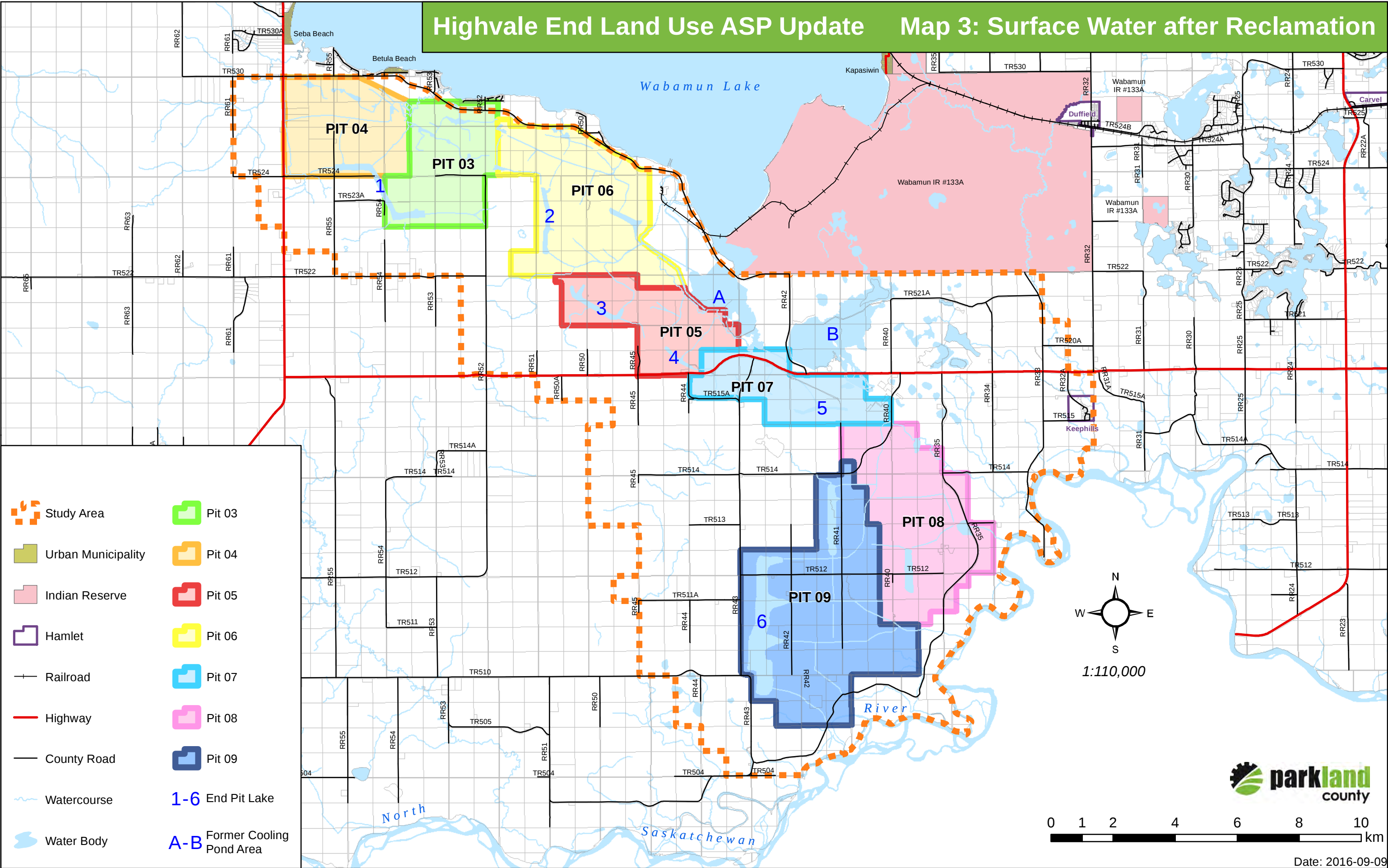
This map is conceptual in nature. Any development patterns including land use, transportation, and infrastructure network items may be subject to minor refinement at the subdivision development stage.

Highvale End Land Use ASP Update Map 2: Topography after Reclamation



This map is conceptual in nature. Any development patterns including land use, transportation, and infrastructure network items may be subject to minor refinement at the subdivision development stage.

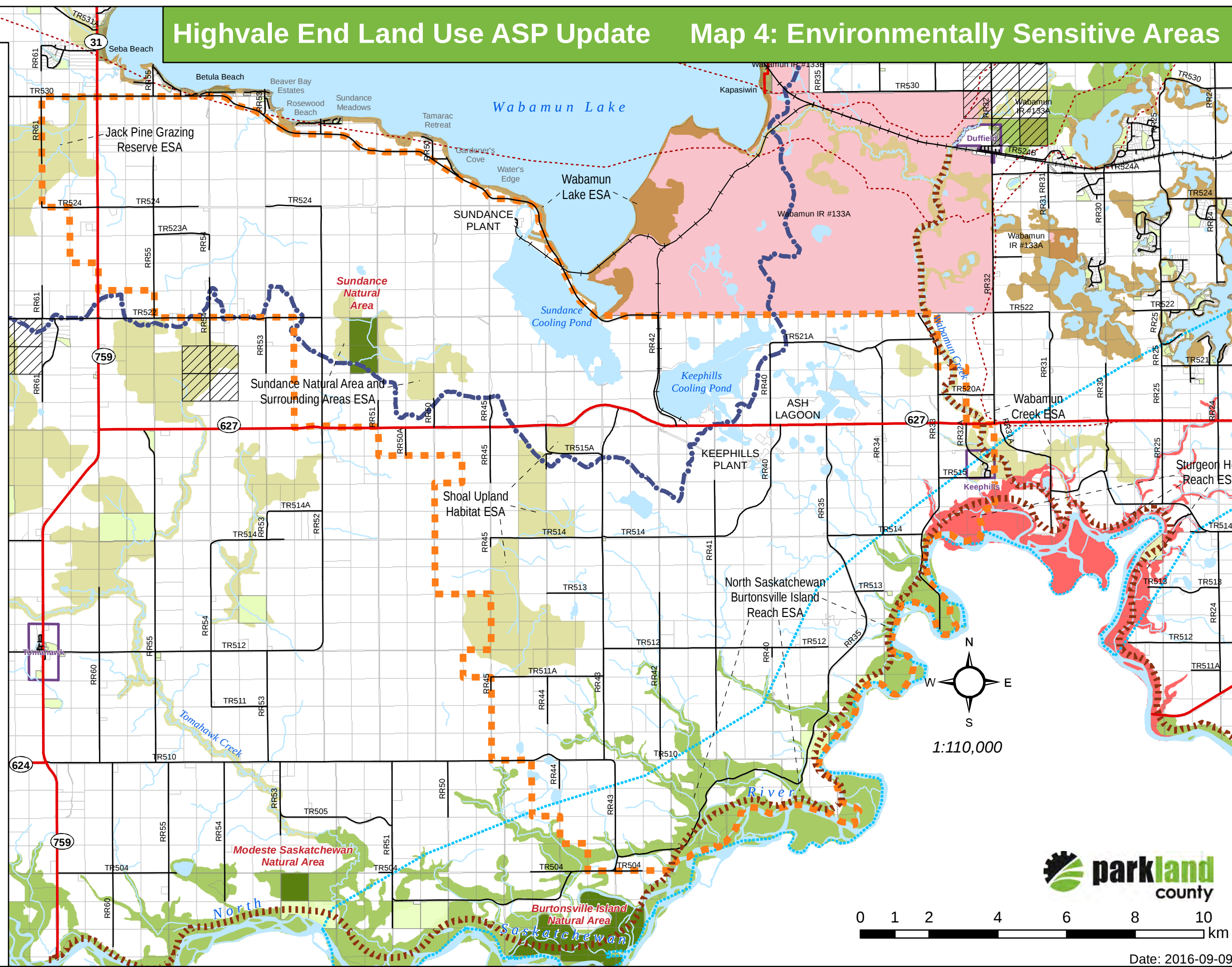
Highvale End Land Use ASP Update Map 3: Surface Water after Reclamation



Highvale End Land Use ASP Update

Map 4: Environmentally Sensitive Areas

- Study Area
- Summer Village
- Indian Reserve
- Hamlet
- Railroad
- Highway
- County Road
- Water Course
- Water Body
- Major Wildlife Corridor
- Groundwater Exploration Restricted Area
- Goundwater Buried Valley Aquifer
- Wabamun Subwatershed
- Minor Local Significance Priority Landform
- Protected Area (Municipal Conservation)
- Provincial Natural Area
- Provincial Park
- Other Crown Lands
- Environmentally Sensitive Area (ESA)***
 - National Significance
 - Provincial Significance
 - Regional Significance
 - Local Significance

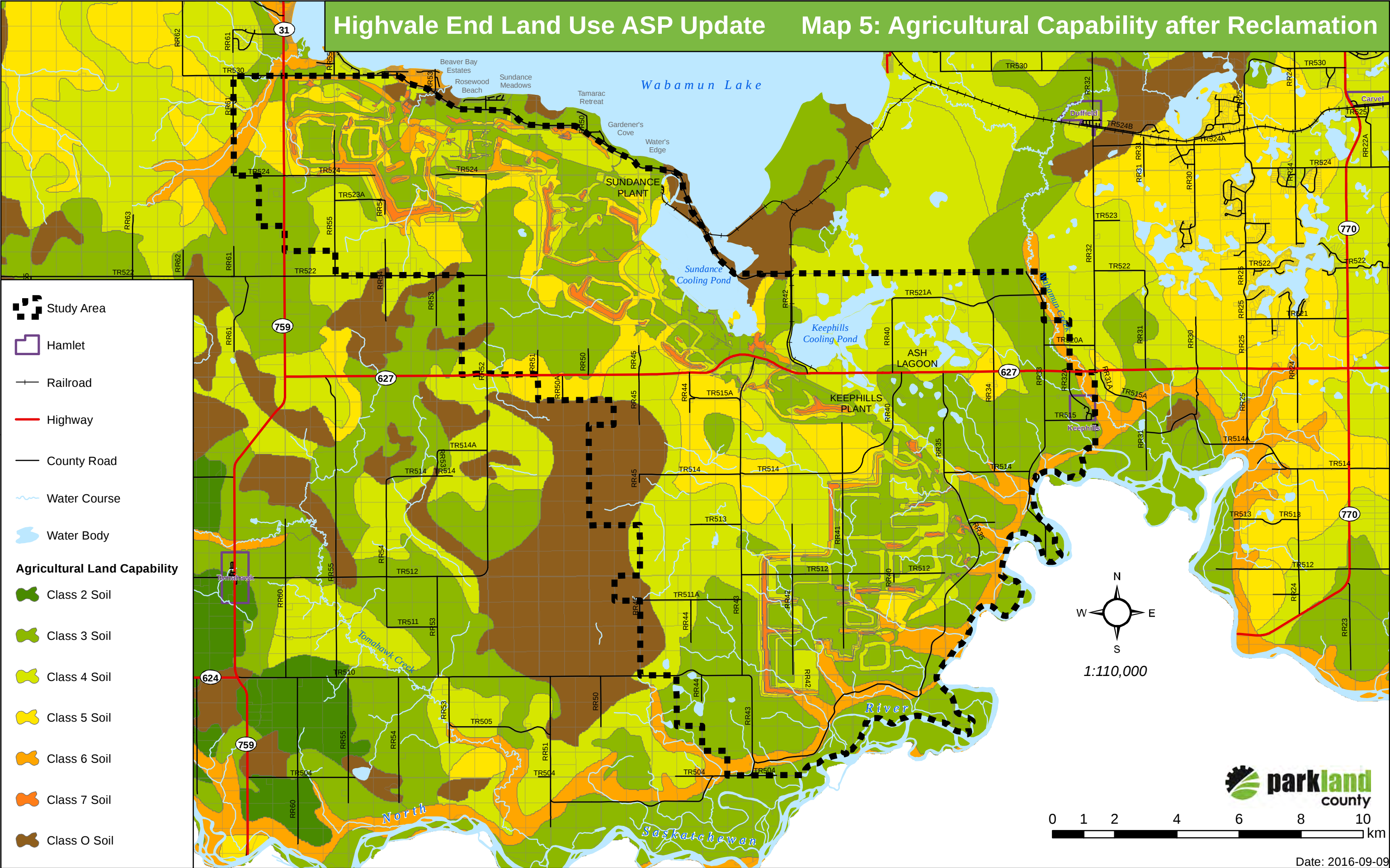


* From 2014 Parkland County Environmental Conservation Master Plan.

This map is conceptual in nature. Any development patterns including land use, transportation, and infrastructure network items may be subject to minor refinement at the subdivision development stage.

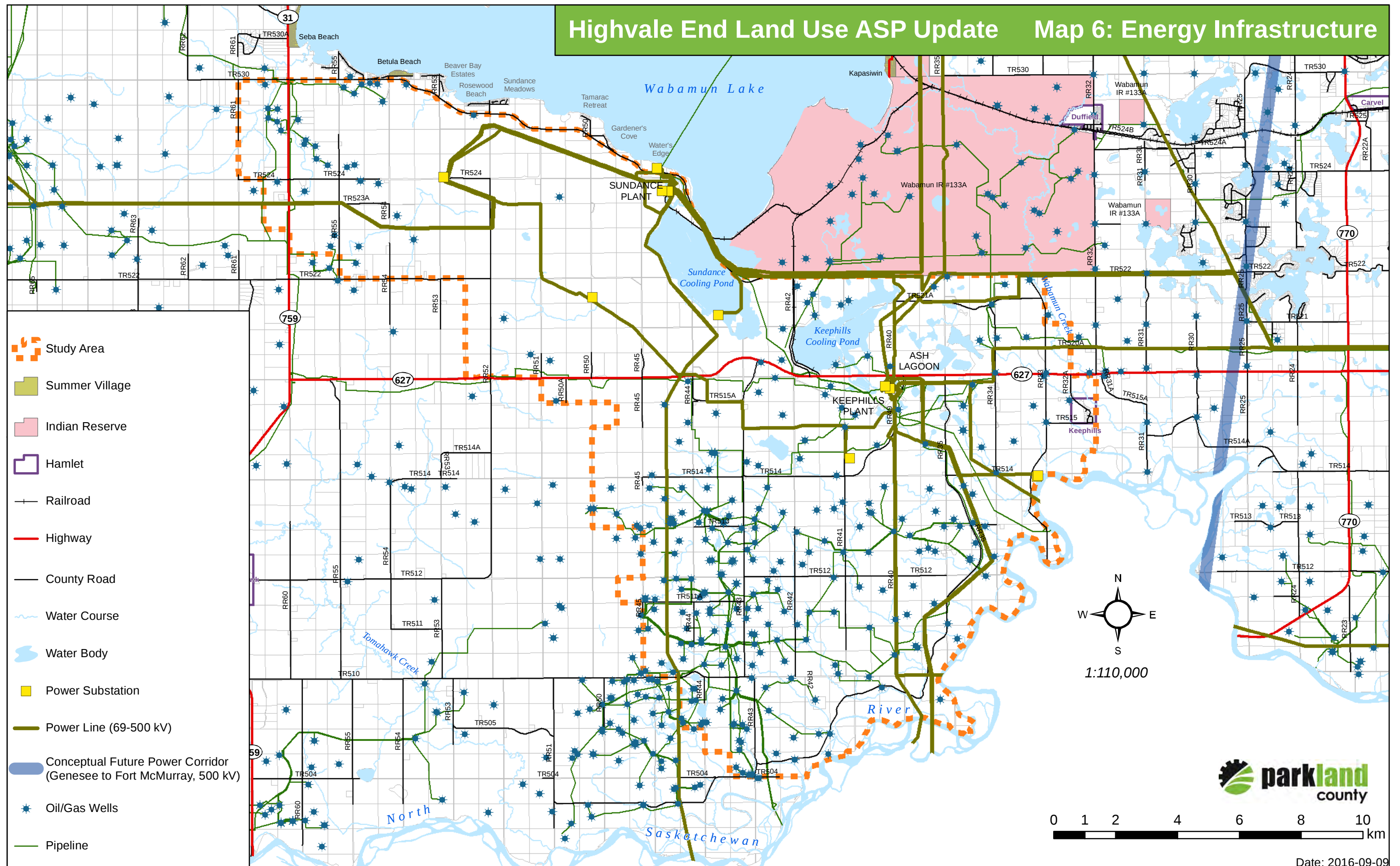
Highvale End Land Use ASP Update

Map 5: Agricultural Capability after Reclamation



This map is conceptual in nature. Any development patterns including land use, transportation, and infrastructure network items may be subject to minor refinement at the subdivision development stage.

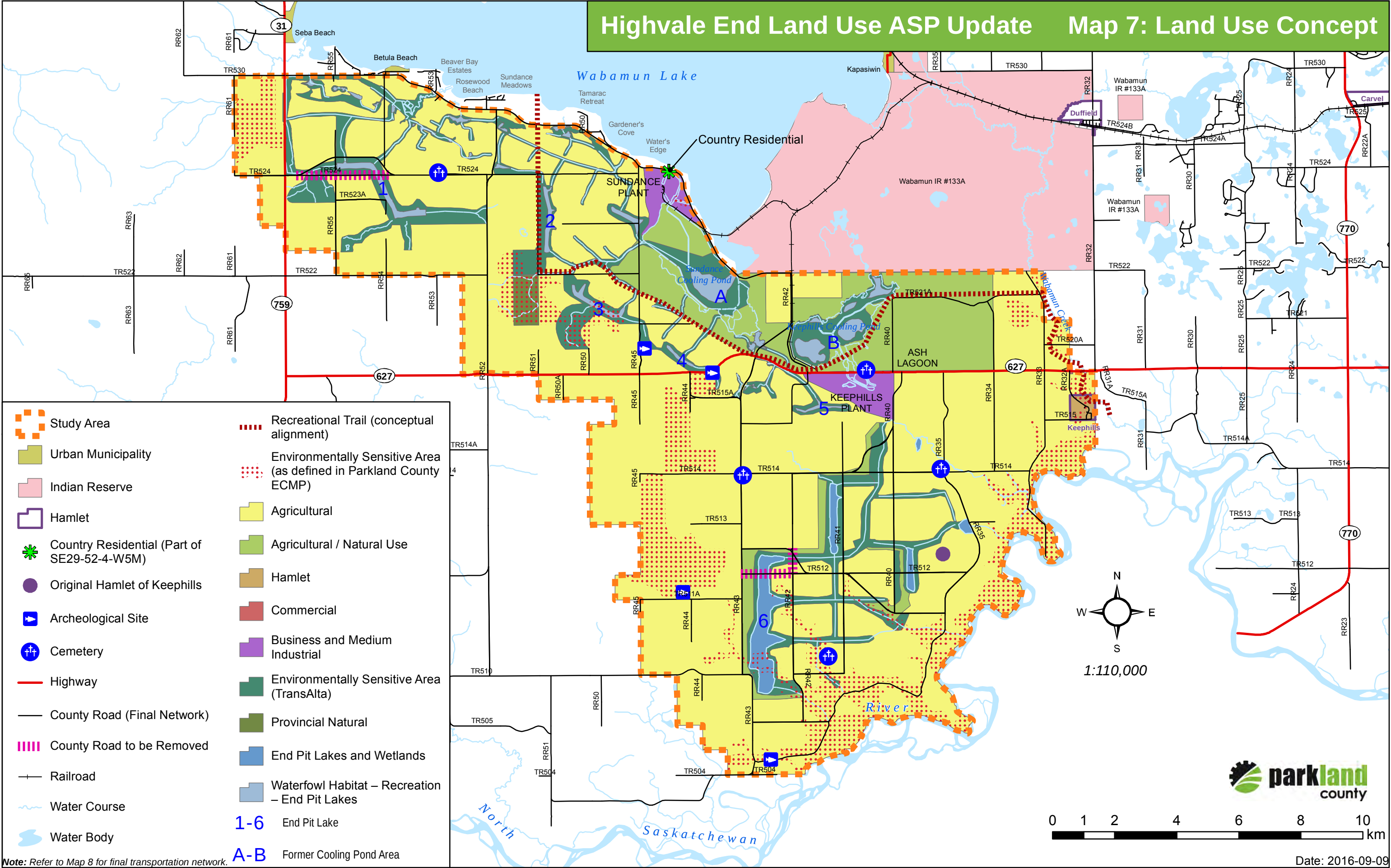
Highvale End Land Use ASP Update Map 6: Energy Infrastructure



This map is conceptual in nature. Any development patterns including land use, transportation, and infrastructure network items may be subject to minor refinement at the subdivision development stage.

Highvale End Land Use ASP Update

Map 7: Land Use Concept



This map is conceptual in nature. Any development patterns including land use, transportation, and infrastructure network items may be subject to minor refinement at the subdivision development stage.

Highvale End Land Use ASP Update Map 8: Transportation Network

