# Devonian Gardens Trail

## *Concept Plan*

Presentation to Parkland County Council

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parkland county DIALOG®

**>> Final Report**

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# presentation overview

- introductions & study overview
- public engagement process & key outcomes
- project vision and guiding principles
- route options
- trail typologies & standards
- questions & comments

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# introduction

Trail development continues to be a focus of investment by Canadian communities, in acknowledgment of the many recreational, public health, social, and environmental benefits that trails can provide. Trails, as a primary component of an active transportation network, encourage better connection within a community, and provide a place for people to walk, bike, and enjoy the natural environment. All people, to some extent, engage in active transportation daily, and there are many strategies and approaches to integrate it into every day life. Trails have many benefits for both individuals and the broader community, and are valuable public facilities that support an overall quality of life.

A trails conceptual plan is a vision; one that provides the basis for a Community to support, encourage, and expand trails use from within. In order to be successful, the trails plan must not only outline the physical route and trail facility desired, but also the necessary operational and programming initiatives required to support the trail over the future. Planning for and constructing a new trail connection is an investment in both time and money, and therefore it is essential that the plan respond to the short and long term needs of the Community.

The Devonian Gardens Trail project is an opportunity to plan for a high quality active transportation link that fulfills an important function on a neighbourhood, community, and regional scale. The implementation of this trail not only connects two important, regional open space destinations, but enhances the overall quality of life for Parkland County through the provision of a desirable recreation facility. Beyond the County, this trail forms an important piece of a broader vision for Regional open space, as key element of the River Valley Alliance Plan of Action. The long term implementation of this trail will support Parkland County's vision as an innovative and progressive rural community, and an important contributor to the Capital Region.

# project overview

- goal to develop a conceptual plan for a trail connection from devonian botanical gardens to prospector’s point day use area.
- alignment of approximately 5000m.
- accessible, multiple-use, non-motorized.
- strong emphasis on community input to establish program & interest for the trail.
- trail link identified as part of the river valley alliance plan of action (2008).

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# public engagement process

- stakeholder visioning workshop
- two public consultation workshops
- online survey
- stakeholder interviews
- individual follow-up and discussion
- public review period for draft plan & online response forum

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# what we heard – during the process

- broad general support for a trail
- specific & focused concerns from residents
  - proximity to private property
  - existing non-permitted uses
  - overall need for a trail
- strong opposition to motorized uses
- what happens after construction (operations & maintenance)

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# what we heard – draft plan

- continued general support for a trail
- concern that the voices of few will influence the outcome for many
- continued concern over the proximity of the trail alignment options to private (residential) property
- strong concern over alignment options towards westridge.
- no clear preference between the two original route options proposed

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# study context & best practices

This chapter provides a summary of the existing physical, socio-economic, and environmental attributes of the study area, with specific reference to the relevance to the conceptual trails plan. In order to develop appropriate and rational recommendations for this trails link, it is essential to have a thorough understanding of not only the physical conditions of the study area, but the overall context as well.

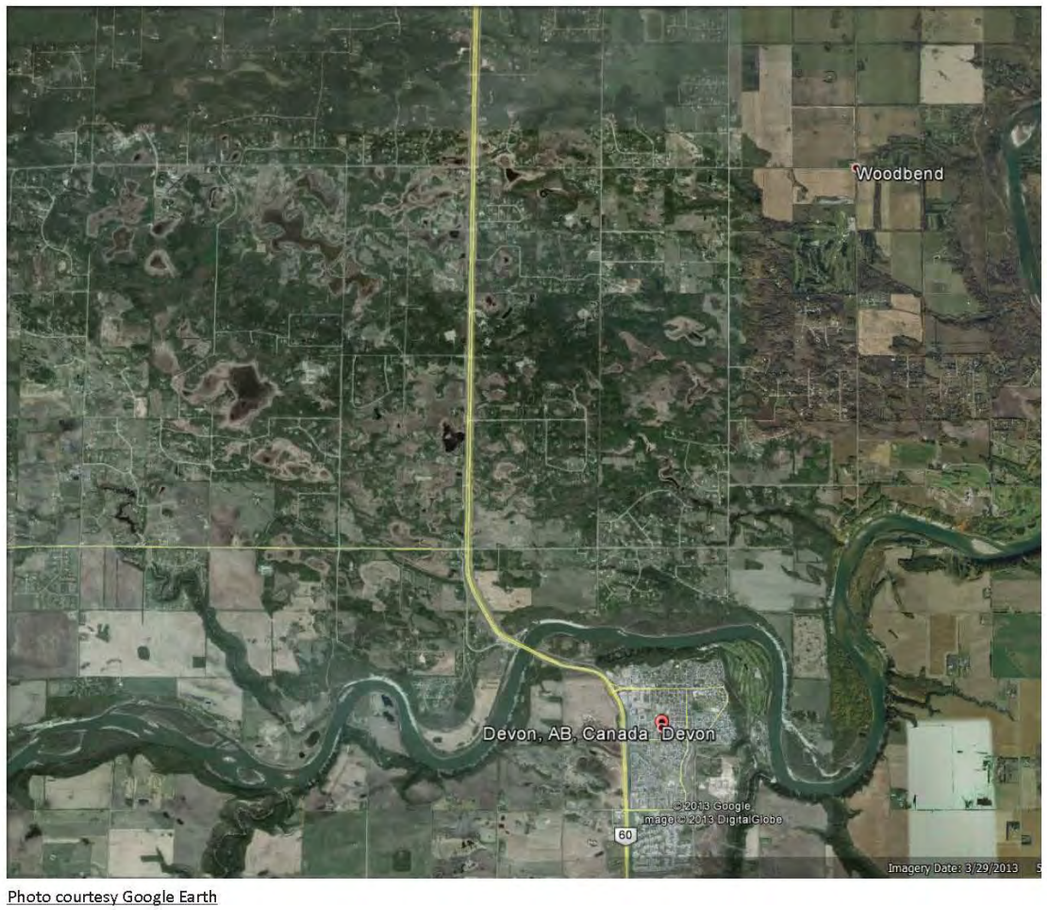


Photo courtesy Google Earth

# study context

- community demographic profile
- RVA plan of action
- planning & policy context
- trail design & development best practices

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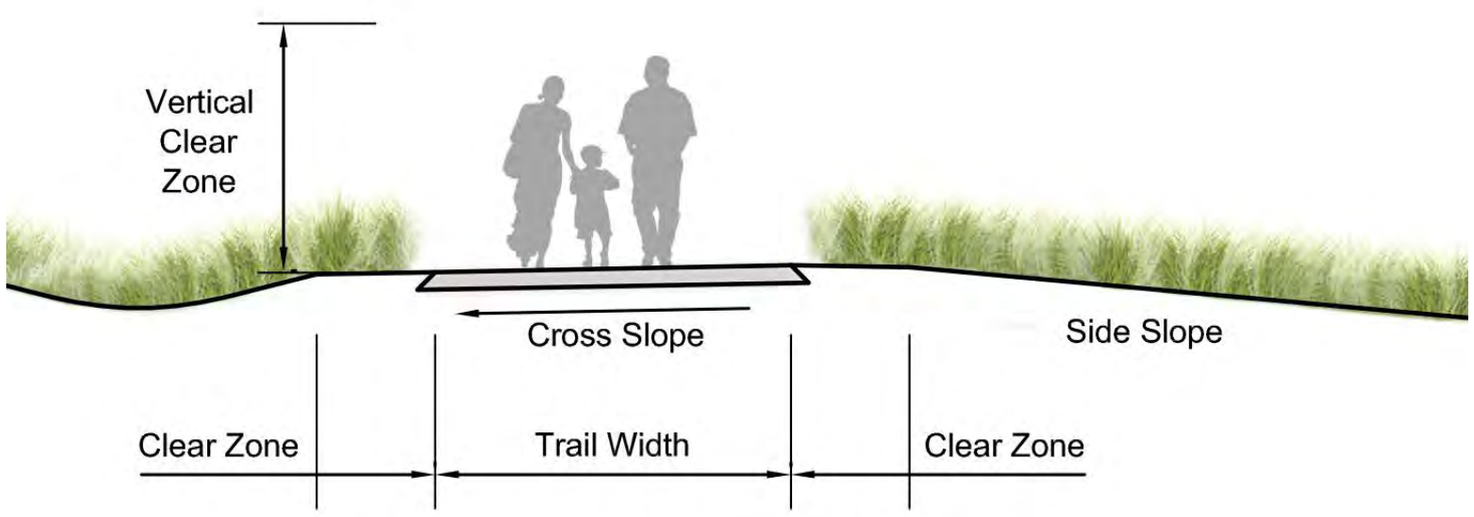
# trail design

- spatial standards
- crime prevention through environmental design
- ecology & wildlife

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# conceptual plan

This chapter describes the vision for the trail linkage, as well as the physical route options. The vision and route options arose from a combination of factors; the public engagement program, the technical review, field investigations, and other environmental, economic, and aesthetic considerations.

The intent of the plan is to balance connectivity with public safety and acceptance, regional aspirations with local interests and input, and public investment with public benefit. The plan is presented in terms of its overall vision and guiding principles, and then specific route options and typologies.

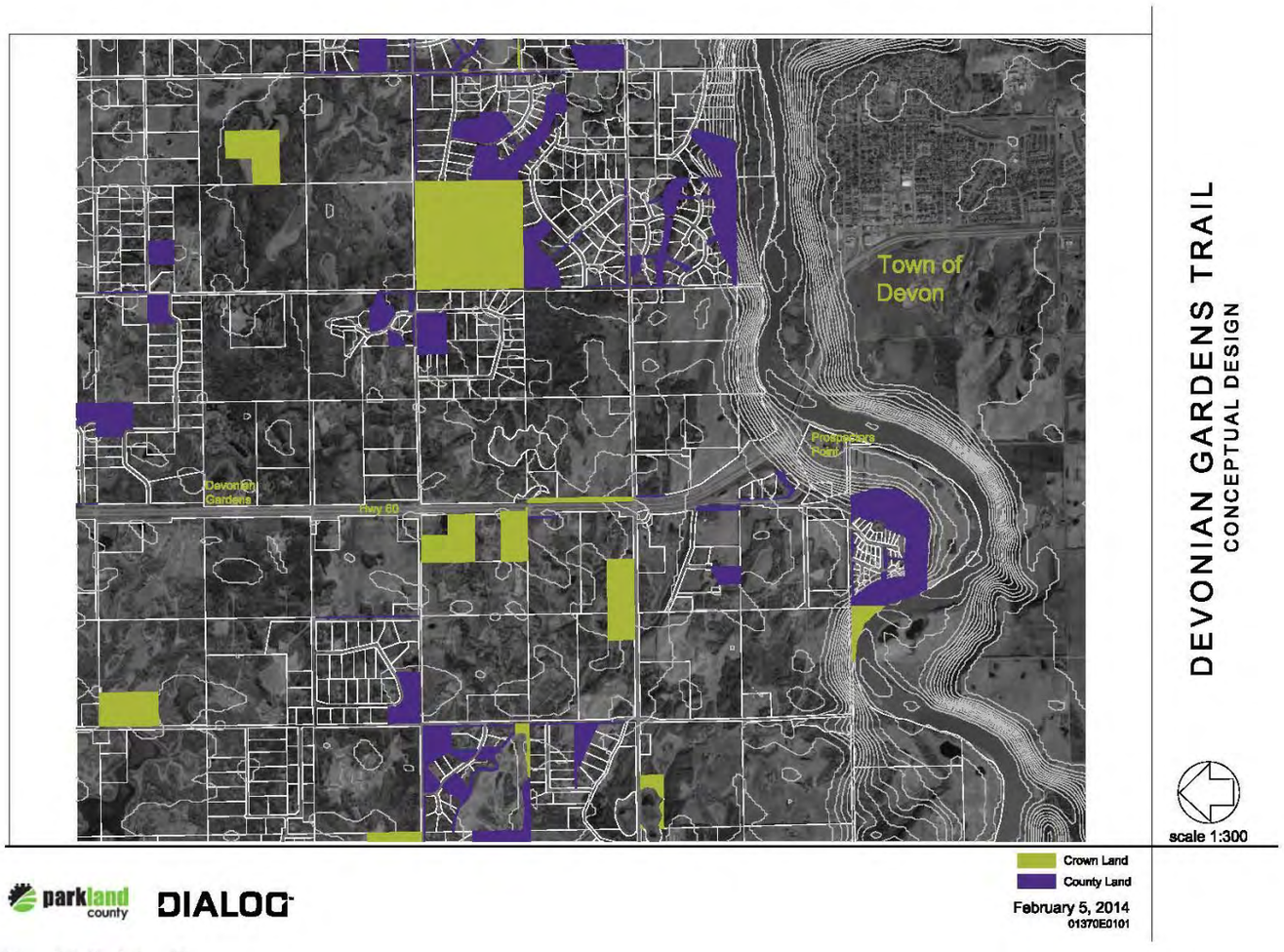


Figure 3.1: Study Area Map

# project vision

*To achieve a well conceived and high quality conceptual trail alignment between Prospector's Point Day Use Area and the University of Alberta's Devonian Botanical Gardens that protects, preserves, and enhances the surrounding landscape and quality of life for Parkland County residents.*

# guiding principles & objectives

**Technical Design**: Create a multi-use, non-motorized, semi-developed trail connection between the North Saskatchewan River Valley and the Devonian Botanical Gardens.

- *Design the trail to support non-motorized uses such as walking, running, biking, and cross country skiing.*

- *Emphasize accessibility where topography and landscape conditions permit.*

- *Design the trail to mitigate non-permitted uses through restrictive gates and trail-heads.*

- *Integrate appropriate trail amenities such as signage and garbage receptacles.*

# guiding principles & objectives

**User Experience**:  Create a pleasant, enjoyable trail experience for users.

- *Design the trail to for a semi-primitive user experience, emphasizing the preservation of the rural character of the study area.*
- *Take advantage of the natural amenities and location of the trail connection.*
- *Integrate site interpretation and education at key opportunities.*
- *Consider the longevity of the trail, and how it may connection to future trails in the area or other open spaces.*

# guiding principles & objectives

**Private Property Rights:** Through all stages of the trail, from concept to design and implementation, respect and acknowledge the rights and interests of adjacent property owners.

- *Promote positive interaction between key project stakeholders.*
- *Integrate design strategies such as buffering and physical screening to mitigate potential impacts.*
- *Develop trail regulations that promote respect and etiquette along the trail.*
- *Enforce trail regulations and create a trail stewardship committee to work with user groups to regulate the trail*

# guiding principles & objectives

**Safety:** Design a safe trail for all users to enjoy.

- *Restrict non-permitted uses of the trail through physical design strategies.*
- *Encourage visibility and eyes on the trail.*
- *Address safety while providing for an enjoyable trail experience.*
- *Minimize user conflict through responsive trail design.*

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# guiding principles & objectives

**Environment**: Plan and develop a trail connection that minimizes negative impact to the landscape and encourages public education and environmental stewardship.

- *Recognize and mitigate potential negative impacts to wildlife and habitat along the trail corridor.*

- *Locate the trail along established corridors, to direct use away from more sensitive habitats.*

- *Integrate public education and interpretive opportunities along the trail.*

- *Use the trail implementation as an opportunity for restoration projects, such as the planting of native vegetation in buffer areas along the corridor.*

# trail nodes

i) devonian botanical gardens

ii) prospector’s point

iii) westridge  golf course

# trail linkage options

i) highway 60

ii) off-road

iii) westridge connector

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# overall route options


DEVONIAN GARDENS - PROPSECTORS POINT TRAIL

# highway 60


DEVONIAN GARDENS - PROPSECTORS POINT TRAIL

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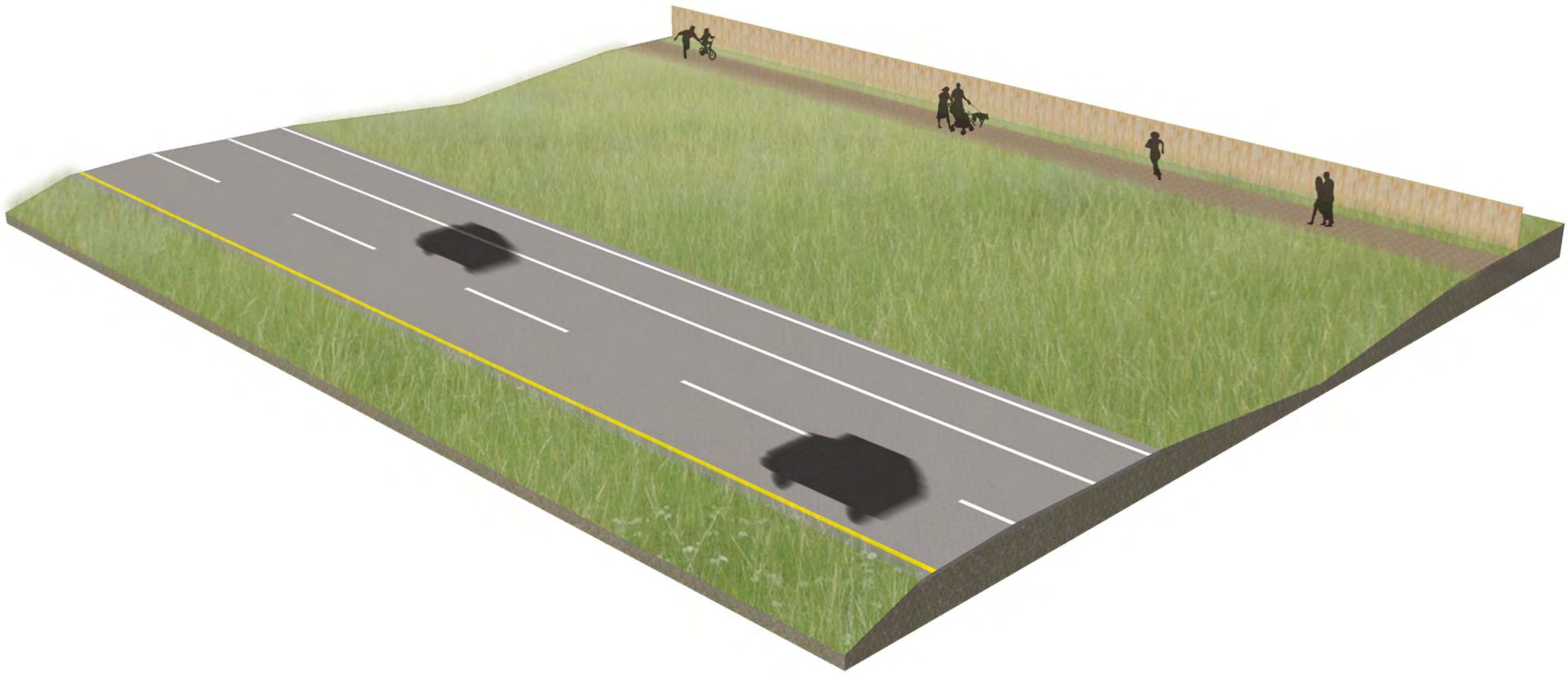

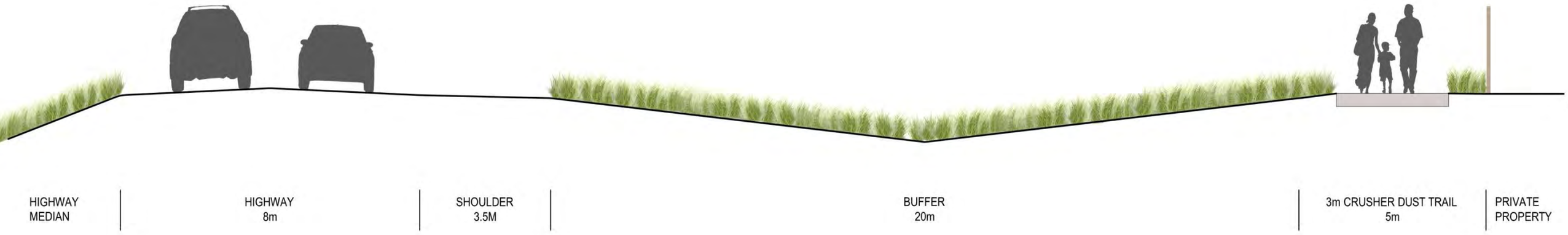
HIGHWAY
MEDIAN
HIGHWAY
8m
SHOULDER
3.5M
BUFFER
20m
3m CRUSHER DUST TRAIL
5m
PRIVATE
PROPERTY

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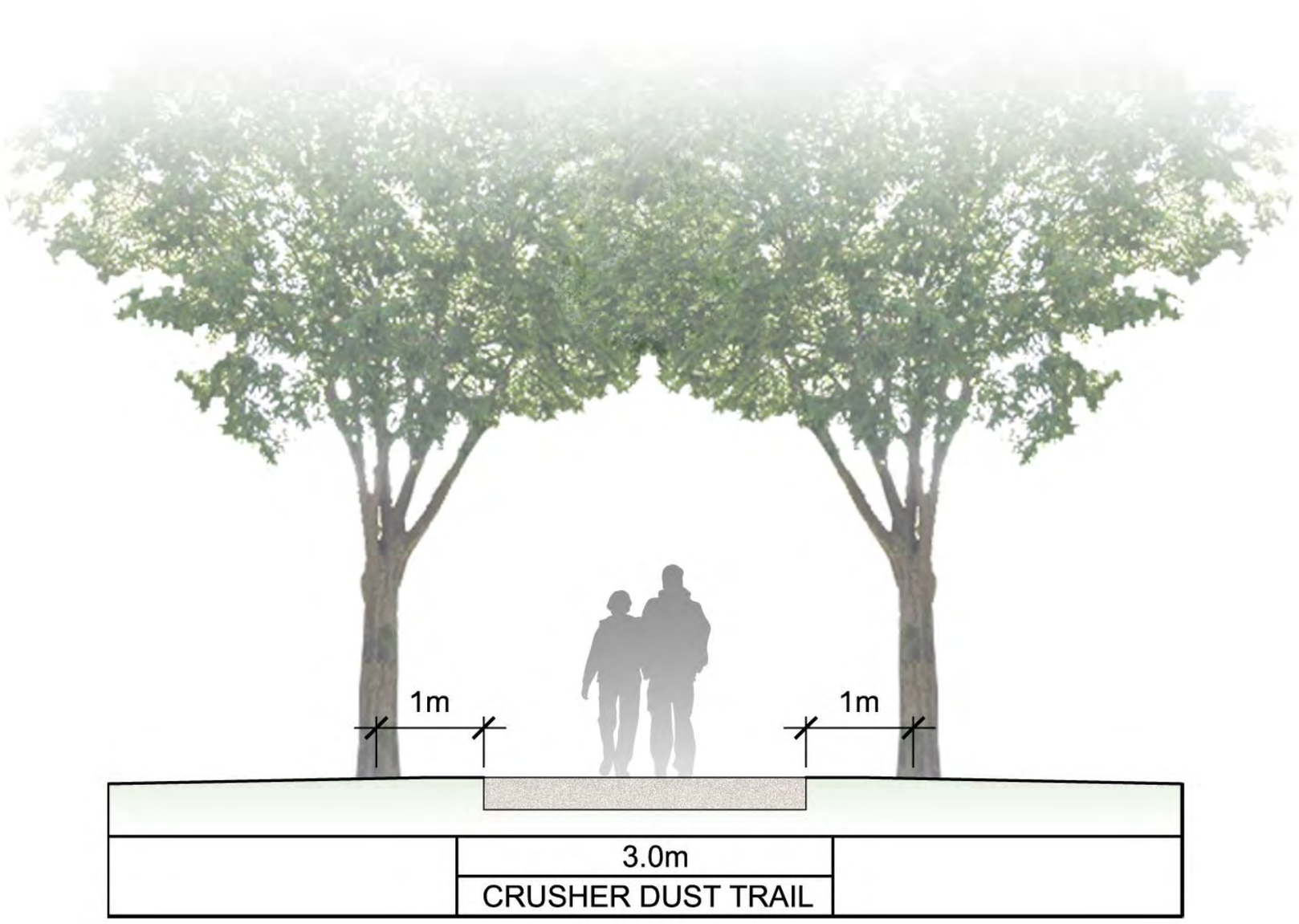
| Guiding Principle | Opportunities | Constraints |
|---|---|---|
| Technical Design | • conceptually, there is sufficient width to provide for a trail along the eastern edge of the highway.<br><br>• there are few physical barriers to the trail (i.e. vegetation, water courses).<br><br>• Alberta Transportation provides specific technical guidelines for the implementation of this type of trail. | • it is understood that in the long term, the highway may be widened and the trail would have to be removed.<br><br>• the connection from Prospector's Point to the ROW is steep and would be challenging to construct and use.<br><br>• Given the shoulder width, it would be difficult to design barriers to block OHV use.<br><br>• Permission would be required from Alberta Transportation. |
| User Experience | | • User experience would be negatively impacted by the proximity to a major highway. |
| Private Property Rights | • the route would have minimal impact on adjacent landowners, given the current usage of the adjacent parcels. | |
| Safety | • High visibility of the trail would be a natural deterrent to crime or trail user safety. | • Safety of users would need to be provided through the use of a physical barrier from traffic. |
| Environment | • There is a low likelihood of impact to habitat, given the adjacent highway. | • There is low opportunity for ecological restoration or habitat improvement, given the proximity to the highway. |
| Other Unique Considerations | | • The future development of the highway may preclude the feasibility of this option. |

# off-road trail


DEVONIAN GARDENS - PROPSECTORS POINT TRAIL


1m
1m
3.0m
CRUSHER DUST TRAIL

PRIVATE PROPERTY

BUFFER
9m

ROADWAY
7m

SWALE
3m

CRUSHER DUST TRAIL
3m

BUFFER
3m

PRIVATE PROPERTY


OFF ROAD
5m
3m CRUSHER DUST TRAIL
5m
VEGETATION BUFFER
10m
PRIVATE PROPERTY
PL


OFF ROAD
5m
3m CRUSHER DUST TRAIL
5m
BERM
10m
PRIVATE PROPERTY
PL

| Guiding Principle | Opportunities | Constraints |
|---|---|---|
| Technical Design | • For the off road sections of this trail, design is relatively straightforward.<br><br>• The width of the road allowance would permit gates to restrict OHV use. | • For certain sections, the trail would travel adjacent to a County road, and could be challenging given the rural road cross section. |
| User Experience | • Trails users would benefit from the semi-primitive, natural focus of this trail route. | |
| Private Property Rights | • Design strategies for buffering should be applied for all sections bordering residential development. | • Concern from specific neighbourhoods regarding the trail's potential impact on their property. |
| Safety | • Formalizing trail use provides the opportunity to restrict and enforce OHV restrictions.<br><br>• Increased trail traffic naturally deters undesirable uses. | • CPTED principles for visibility should be provided to encourage eyes on the trail. |
| Environment | • Trail has the potential to preserve a green corridor connecting existing large open space blocks.<br><br>• Trail is proposed in an alignment that already experiences non-formal trail use, therefore impact is minimized. | |
| Other Unique Considerations | | • limited land acquisition / land agreements required.<br><br>• strong but focused community opposition. |

# westridge connector


DEVONIAN GARDENS - PROPSECTORS POINT TRAIL

| Guiding Principle | Opportunities | Constraints |
|---|---|---|
| Technical Design | • Unknown and requires further study. | • Unknown and requires further study. |
| User Experience | • Unknown, but would anticipate to be similar to the off-road trail option. | |
| Private Property Rights | • Design strategies for buffering should be applied for all sections bordering residential development. | • Limited public land for this connection would require extensive land acquisition / land agreements. |
| Safety | • Formalizing trail use provides the opportunity to restrict and enforce OHV restrictions.<br><br>• Increased trail traffic naturally deters undesirable uses. | • CPTED principles for visibility should be provided to encourage eyes on the trail. |
| Environment | • Trail has the potential to preserve a green corridor connecting existing large open space blocks. | • Patterns of use and sensitive of habitat are unknown and would require further study. |
| Other Unique Considerations | • An alternative route that provides a connection from Devonian to the River Valley, which could link into future RVA projects along the north shore. | • Unknown connection that requires further study, given the private land along the proposed alignment.<br><br>• There is no second node or destination for this link, and future RVA facilities along the north shore are not presently identified. |



# trail design standards

This chapter provides a summary of the technical design guidelines recommended to be applied during the detailed design and implementation process. These guidelines are based on the technical review process completed for this study, and reference the Alberta Guidelines for the Construction of Trails in Highway Rights-of-Way, the Alberta Trail Builder Design Manual, the Velo Quebec Technical Handbook of Bikeway Design, the Alberta Recreation Corridor and Trails Classification System, the American Association of State Highway and Transportation Officials Guide for the Development of Bike Facilities, the International Mountain Bicycling Association Canada.

## Proposed Trail Typology

The proposed typology for the Devonian Gardens trail link is a multi-use, non-motorized trail. This facility will benefit the majority of trail users, and is consistent with the vision of the Community and of the River Valley Alliance. Given the route options evaluated during this study, there are two primary facility types, an off road multi-use trail, and adjacent to the highway multi-use trail.

# trail design standards

- off-road stone & asphalt dust multi-use trails
- multi-use trail within highway ROW
- multi-use trail adjacent to county road
- trail buffers
- bridges and crossings
- signage & markings
- maintenance


# moving forward

This report describes the long term vision for a trails connection from the North Saskatchewan River Valley to the Devonian Botanical Gardens, and outlines an achievable and financially feasible phasing and implementation plan. The proposed plan is consisted with the objectives outlined by both the River Valley Alliance Plan of Action and Parkland County's strategic planning documents, as well as the direction and input received from the steering committee and the Community.

# implementation process

- preliminary review of conceptual plan
- detailed design of preferred route
- programming & operational support
- implementation - construction
- post implementation –maintenance period

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# budget estimates

- order of magnitude costing
- three route alignments, two surface types
- includes allowance for detailed design
- does not include land acquisition

# budget estimates

| Trail Linkage | Approximate Length | | Allowance for trail meandering | Cost per metre (3.0m wide crusher dust) | Approximate Trail Cost | Associated Amenities / Costs | Detailed Design & Contract Adminstration (20%) | Construction & Design Contingency (20%) | Estimated Cost |
|---|---|---|---|---|---|---|---|---|---|
| Highway 60 | Adjacent to Road | 4840 | 5808 | $150.00 | $871,200.00 | $58,080.00 | $185,856.00 | $223,027.20 | $1,338,163.20 |
| Off Road - option a | Off Road | 1354 | 1625 | $130.00 | $211,224.00 | $16,248.00 | $45,494.40 | $54,593.28 | $1,087,516.80 |
| | Adjacent to Road | 2587 | 3104 | $160.00 | $496,704.00 | $31,044.00 | $105,549.60 | $126,659.52 | |
| Westridge Connector | Unknown | 9000 | 10800 | $130.00 | $1,404,000.00 | $108,000.00 | $302,400.00 | $362,880.00 | $2,177,280.00 |

| Trail Linkage | Approximate Length | | Allowance for trail meandering | Cost per metre (3.0m wide asphalt) | Approximate Trail Cost | Associated Amenities / Costs | Detailed Design & Contract Adminstration (20%) | Construction & Design Contingency (20%) | Estimated Cost |
|---|---|---|---|---|---|---|---|---|---|
| Highway 60 | Adjacent to Road | 4840 | 5808 | $250.00 | $1,210,000.00 | $96,800.00 | $261,360.00 | $313,632.00 | $1,881,792.00 |
| Off Road - option a | Off Road | 1354 | 1625 | $250.00 | $338,500.00 | $27,080.00 | $73,116.00 | $87,739.20 | $1,532,260.80 |
| | Adjacent to Road | 2587 | 3104 | $250.00 | $646,750.00 | $51,740.00 | $139,698.00 | $167,637.60 | |
| Westridge Connector | Unknown | 9000 | 10800 | $250.00 | $2,250,000.00 | $180,000.00 | $486,000.00 | $583,200.00 | $3,499,200.00 |

# maintenance forecasts

- regular maintenance will be essential
- annual inspections + as needed basis
- vandalism, garbage, vegetation
- trail surfacing & drainage, fencing & signage
- typically $4000 - $6000 per kilometer, per year for a base level of service (annual inspection, not track setting, etc)

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# education & outreach

- educational programming
- trail enforcement
- strategic partnerships
- trails stewardship committee
- especially critical during the first few years

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# why make the investment?

- environmental benefits
- public health benefits
- economic benefits
- transportation & connectivity benefits

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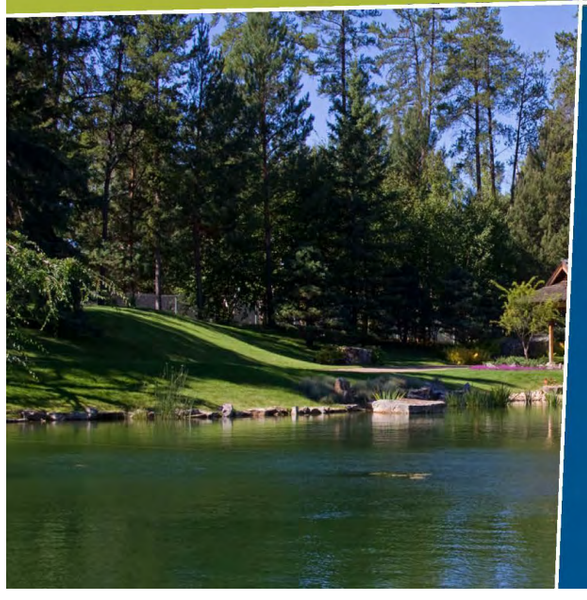
# questions & comments?



Devonian Gardens Trail

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