OKANAGAN RAIL TRAIL

April 2016 | 0467.0447.01

Trail Development Plan

Progress Report

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Okanagan Indian Band

LAKE COUNTRY
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REGIONAL DISTRICT NORTH OKANAGAN

City of Kelowna

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OKANAGAN RAIL TRAIL - Trail Development Plan

Progress Report

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Project Scope

In early 2016 regional partners within the Okanagan Valley embarked on the process to develop the initial phase of the Okanagan Rail Trail. The discontinuance of the CN Rail provided a regional opportunity to acquire approximately 50km of rail corridor for multi-modal transportation purposes. Now that the acquisition is complete, the first objective of the owner jurisdictions is to undertake the work necessary to convert the rail bed into a safe and functional basic trail, principally for recreational use by pedestrians and cyclists. Since the beginning of February, 2016, while CN rail completes their obligations on the rail line, a team of consulting engineers, planners, and environmental scientists have reviewed all aspects of the conversion of the rail bed into a functioning trail.

The preparation of this Trail Development Plan has outlined the process from acquisition to concept conclusion and construction, including the development of a trail concept, hosting community meetings for gathering input, preparation of conceptual budgetary cost estimates with associated qualifications/risks, and providing regular reports to the Inter-jurisdictional Team (IDT) at appropriate times during the process.

Trail Development

The long term vision of the corridor is a multi-modal transportation corridor, however, the initial use of the corridor is intended to be a regional trail approximately 50km in length. The multi-use trail will be developed to a basic standard, as a continuous route between Coldstream and Kelowna. The finished surface will consist of crushed and compacted aggregate, suitable for pedestrian and off-road cyclist use. For the majority of its length the trail will be approximately 4.6m wide; and narrower in areas of topographic constraint. Included in the development of this basic standard of trail will be road crossings, signage, access barriers, safety barriers, and support infrastructure to provide a basic level of safe and accessible use by pedestrians and cyclists. Fences, except to control access at road crossings, will not be provided. This IDT project does not include plans to surface the trail with asphalt.

The primary users of the trail will be pedestrians and recreational cyclists. Other potential uses (e.g. horse, dog) were identified during the public consultation sessions undertaken during the planning process; however, owing to unresolved issues between these uses and the primary users, wildlife, local trail access, and bylaw considerations, the inclusion of these uses has yet to have been determined. As a condition of the joint purchase of the corridor motorized vehicles, except for maintenance/emergency vehicles and legitimate accessibility aides, are not permitted on the corridor.

Ongoing monitoring and maintenance of the trail condition is important to ensure safety, quality of user experience, and protection of the corridor. The IDT will work with each owner jurisdiction to develop a basic maintenance plan for the corridor. Issues to be considered and addressed include such things as who is responsible for maintenance of the trail, types and frequency of maintenance activities, condition assessments of structures, drainage, and signage. The frequency of the maintenance activities are based on volume and type of users, management objectives, environmental impact, and availability of funds.

There are approximately 50 road and driveway crossings along the trail corridor. As part of the development plan all crossing locations have been identified and the required upgrades have been suggested. The crossings have been grouped into five categories: Class A through Class D, as well as a Class E which are site specific crossings. The upgrades range from 'do nothing' to pedestrian flashers and overhead pedestrian controlled signals.

An Environmental Assessment was completed in parallel with the trail development plan. The assessment considered regulatory requirements, identified aquatic permitting and suitable work windows for any upgrades that may be necessary, and provided recommendations for future assessment, permitting, and environmental management plans prior to upgrades. The purpose of this assessment was to support future environmental planning and identify mitigation necessary prior to construction to prevent impacts.

Consultation Summary

The public input opportunities occurred as a series of open houses, online idea generation and an online survey between March 14 to March 27. Open houses were held in each owner jurisdiction (District of Lake Country, City of Kelowna, Okanagan Indian Band, and Regional District of North Okanagan) receiving more than 940 attendees. The engagement was designed to gather input for the initial phase of trail development. All additional feedback collected will be retained for future reference, for use in any future planning and development of the trial corridor.

Attendees were encouraged to review display boards, speak to staff and visit online to complete the survey which offered an interactive map feature. Respondents were asked if they supported development of a trail and given the opportunity to provide comments about why or why not. 96% of respondents support development of a trail in the Okanagan Rail Corridor. The home page received more than 10,000 views and 160 ideas were submitted. Respondents interacted with one another by commenting, liking and scoring submitted ideas, more than 2,300 of these interactions were recorded

Cost Estimate

Of high importance during this phase was to complete a reasonable amount of investigation to develop a conceptual plan and budgetary capital cost estimate for public input, to provide the Councils and Board with adequate information to approve the concept, and for fundraising to commence. A Class 'C' cost estimate was chosen as the appropriate level to use at this stage for budgeting purposes and setting fundraising targets The estimate is prepared with limited site information, is based on probable conditions affecting the project, and represents the summation of all identifiable project component costs. The estimated capital cost to complete the concept development and to create contract documents, procure, and construct the trail is $7,690,000. A contingency allowance of 40% including engineering and other contingencies during construction was included in the estimate.

Upon receiving support from each Council and Board on the trail concept, the IDT can move forward with certainty with the concept finalization and preparation of the required construction contract(s). In parallel, the Okanagan Rail Trail Initiative (ORTI) can commence the community fund raising campaign.

Schedule

The timing for construction and opening of the initial phase of the trail is contingent on funding availability. Moving forward with any design and construction work is dependent on a successful community fundraising campaign and will ultimately be at the discretion of the Councils and Board of the partnering jurisdictions.

With the community fund raising commencing in the spring of 2016, it is possible that construction could start in 2016. Early construction would include barrier, gates, and signage to deter unauthorized access until trail is completed and open for use.

The IDT will work closely with ORTI during the fundraising campaign to explore opportunities to potentially advance certain components of the project.

Next Steps

The preparation of this Trail Development Plan is the first step in the process to convert the existing rail bed into a functioning regional trail. Following the completion of this plan, several additional steps have been identified to progress the project towards design and construction.

1. Review input from Councils/Board and Public Open Houses
2. IDT to work with ORTI to commence the community fundraising campaign
3. Further Land Review (Issues and Opportunities)
    a. Parking
    b. Transportation and Connectivity – Connection to existing or future trails
    c. Land acquisitions or disposal
4. Complete the conceptual design – including Survey, Traffic, Drainage, Geotechnical (crush tests and rock scaling analysis), Environmental, Structural and Archeology overview and protocol development
5. Develop phased construction options (e.g. test sections)
6. Preliminary design and permitting
7. Contract documents
8. Barricade/access control installation
9. Contract procurement method – evaluation

1.0 Introduction

In early 2016 regional partners within the Okanagan Valley embarked on the process to develop the initial phase of the Okanagan Rail Trail. The discontinuance of the CN Rail provided a regional opportunity to acquire approximately 50km of rail corridor for multi-modal transportation purposes. Now that the acquisition is complete, the first objective of the owner jurisdictions is to undertake the work necessary to convert the rail bed into a safe and functional basic trail, principally for recreational use by pedestrians and cyclists.

Since the beginning of February, 2016, while CN rail completes their obligations on the rail line, a team of consulting engineers, planners and environmental scientists have reviewed all aspects of the conversion of the rail bed into a functioning trail. The project team has studied the corridor's physical characteristics to determine a basic trail concept, identify construction risks and develop a planning level cost estimate.

This Trail Development Plan report provides a summary of work done to date, and the key assumptions that have been made for the conceptual design of the trail.

2.0 Project Background

2.1 Project Background

The CN Rail line, which was used to bring Okanagan Valley produce and lumber to markets across Canada, was discontinued in June 2013. The local governments saw the need to protect the corridor as a public asset and preserve its integrity and connectivity for multi-modal transportation purposes. In June 2015 the corridor was purchased by the City of Kelowna, the District of Lake Country, and the Regional District of the North Okanagan. At the time of writing, that portion of the corridor running through the Duck Lake (IR7) Reserve is in the federal process of being transferred to the Okanagan Indian Band (OKIB). By acquiring the corridor the communities have made a long-term commitment for ultimate development of the rail corridor as a public multi-modal regional transportation corridor, including the initial use of the corridor as a public trail.

The local governments and First Nation involved in corridor acquisition have created an Inter-jurisdictional Development Team (IDT). The IDT is a joint committee that acts as a common voice for them to work collaboratively to achieve their short and long term goals of for the corridor.

The corridor is approximately 50 km from Gordon Drive to Coldstream:

- 18 km in Kelowna;
- 2.5 km in Okanagan Indian Band IR#7 Duck Lake;
- 16 km in District of Lake Country; and
- 13 km in the Regional District of North Okanagan.

2.2 Scope of Trail Development Plan

The process from acquisition to concept conclusion and construction involves several important steps, including the development of a trail concept, holding community meetings for gathering input, preparation of conceptual budgetary cost estimates with associated qualifications/risks, and providing reports to the IDT at appropriate times during the process. Upon receiving support from each Council and Board on the trail concept, the IDT can move forward with certainty with the concept finalization and preparation of the required construction contract(s). In parallel, the Okanagan Rail Trail Initiative (ORTI) can commence the community fundraising campaign.

Some aspects of the trail development are straightforward, while others pose significant uncertainties and potential risks. This Trail Development Plan has highlighted and identified aspects that require further consideration to manage those risks as the concept advances. All known project uncertainties, assumptions, and risks are identified in this report.

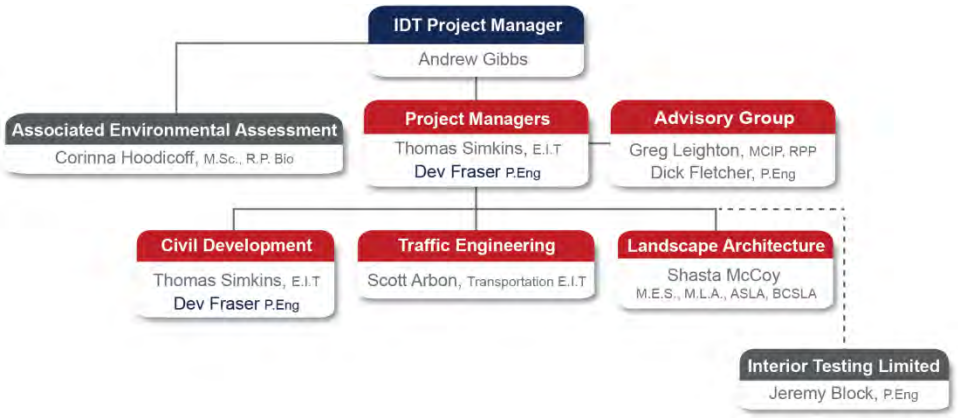
2.3 Project Team

In response to the request of the IDT, a team of consultants were engaged to assist with the development of the Trail Development Plan. The core consulting team providing services for the concept development consists of:

- Civil Engineering, Planning, Landscape Architecture and Traffic Engineering – Urban Systems and Dev Fraser, ORTI;
- Environmental – Associated Environmental; and
- Geotechnical – Interior Testing Services Limited.

To supplement the core project staff, contractors, and other professionals were engaged to provide input during preparation of the Trail Development Plan. Local government staff provided communications support for the community meetings. See **Figure 1** below for a detailed graphic of the project team.

Figure 1: Project Team



3.0 Trail Concept

3.1 Vision

Although the long term vision of the corridor is a multi-modal transportation corridor, the initial use of the corridor is intended to be a regional trail approximately 50km in length. The multi-use trail will be developed to a basic standard, as a continuous route between Coldstream and Kelowna (approximately CN markers 88.0 to 118.0). The finished surface will consist of crushed and compacted aggregate, suitable for pedestrian and off-road cyclist use. For the majority of its length, the trail will be approximately 4.6m wide; and narrower in areas of topographic constraint. This IDT project does not include plans to surface the trail with asphalt. It is noted that, outside of this trail development project, a local jurisdiction may choose to asphalt portions of the trail within its ownership to meet specific local needs (e.g. the City of Kelowna is considering asphalting the route between downtown and the University of British Columbia Okanagan (UBCO) in order to serve cycle commuters to and from the school).

Included in the development of this basic standard of trail will be road crossings, signage, access barriers, safety barriers, and support infrastructure to provide a basic level of safe and accessible use by pedestrians and cyclists. Fences, except to control access at road crossings, will not be provided.

Development of the trail beyond the basic amenities and gravel trail may be considered as a subsequent phase after the basic standard of development is fully funded.

3.2 Assumptions

During the scoping of this trail development project, a number of assumptions had to be made. It is expected that as the project moves forward towards final concept development and construction that these assumptions will be confirmed.

The following key assumptions were made for the purpose of preparing this report:

- The corridor will be publically accessible and continuous;
- In order to limit potential impacts to the environment, archaeological sites, and adjacent land owners, the trail will follow the route of the discontinued rail line where practical;
- The existing rail alignment was constructed within the legal property lines of the purchased corridor;
- The trail will be developed to a basic standard;
- The trail will not be paved as part of this initial phase of development;
- Removal of railway infrastructure and environmental remediation of contaminated sites is the responsibility of CN Rail as a condition of its sale of the corridor;
- Given the preliminary nature of the planning and design process to date, the plans and sections used to communicate the scope and intent of trail development are conceptual in nature. More detailed surveys, plans and sections will need to be undertaken prior to construction of the trail;
- Existing materials will be utilized where possible and practical;
- Road crossings will be developed based on existing information from IDT local governments;
- It is the responsibility of the IDT to liaise with adjacent landowners;
- It is the responsibility of the IDT to address archaeological matters; and
- Significant drainage improvements were not assumed in the concept design given the existing grades. On site re-grading will occur during construction to ensure effective drainage.

3.3 Overall Map

The regional trail is planned to start at Mile 88 in the District of Coldstream and continue to approximately Cerise Drive (Mile 118) in the City of Kelowna. The gravel trail is to be continuous; from Dilworth Drive to Spall the existing asphalt Rails-with-Trails pathway will be relied upon. An overall map showing the extents of the regional trail can be seen in **Appendix A**.

3.4 Trail Use

The flat grade, limited road crossings, and connections to major destinations throughout the valley provide opportunities for many different types of use. The primary users of the trail will be pedestrians and recreational cyclists. Other potential uses (e.g. horse, dog) were identified during the public consultation sessions undertaken during the planning process; however, owing to unresolved issues between these uses and the primary users, wildlife, local trail access, and bylaw considerations, the inclusion of these uses has yet to have been determined. As a condition of the joint purchase of the corridor, motorized vehicles, except for maintenance/emergency vehicles and legitimate accessibility aides, are not permitted on the corridor.

3.5 Maintenance

Determining who will undertake the maintenance is a matter for consideration by each local government and OKIB. There are numerous possibilities including each local government and OKIB being responsible for its own section or a single jurisdiction maintaining the entire corridor. The possibility of contracting out the maintenance also merits consideration. The IDT will work with each owner jurisdiction to develop an operating model for the corridor.

Ongoing monitoring and maintenance of the trail condition is important to ensure safety, quality of user experience, and protection of the corridor. The IDT will work with each owner jurisdiction to develop a basic maintenance plan for the corridor. Issues to be considered and addressed for such things as who is responsible for maintenance of the trail, types and frequency of maintenance activities, and condition assessments of structures, drainage and signage. The frequency of the maintenance activities are based volume and type of users, management objectives, environmental impact, and availability of funds.

The following types of maintenance should be considered:

- **Gravel surface** – restoration of the trail surface by grading. Imported or local materials may be required to fill ruts, low spots, or to address drainage problems;
- **Ditching and drainage** – inspection and maintenance of drainage includes the repair of erosion damage, the cleaning of ditches and culverts, and assessment for potential for drainage problems;
- **Weed control/deadfall** – maintenance of trail side vegetation, brush clearing, and removal of wind/deadfall;
- **Trash/waste collection** – regular removal of litter and garbage from trailhead and along the trail;
- **Structure** – regular inventory and inspection of structures such as bridges, trestles, and erosions control by a professional in the field related to the structure;
- **Signs** – inspection of signs to ensure placement, visibility, and currency;
- **Facility maintenance** – inspection of initial and future trail facilities (e.g. kiosk, washrooms, bench, tables) to ensure they are in good condition; and
- **Rock fall and scaling** – inspection of the rock cuts and adjacent areas for rock fall which may affect the travel surface. A professional geotechnical engineer should be engaged to inspect all rock faces adjacent to the trail determine whether scaling is required and the scope.

4.0 Trail Development

4.1 Trail Development Maps

A series of trail development maps have been created with input from the IDT and senior staff at each of the owner jurisdictions. The maps illustrate the trail extents, identified road crossings, administrative and legal boundaries, and initial access control barricades. The trail development maps are included in **Appendix A**.

4.2 Typical Sections

The ideal trail design width depends on a range of criteria, including the type and volume of users. For the safety and enjoyment of all users, a wider trail is desirable. The typical section chosen for the initial phase of the trail is a 4.6 metre width of compacted gravel surface as shown in **Figure 2**.

The 4.6 metre width meets the recommended Transportation Association of Canada (TAC) Geometric Design Guidelines for a multi-use recreational trail, which states lane width for two-way bike path, shared with pedestrians should be 3.0 - 4.0 metres. The additional 0.6 metres allows for a 4.0 metre paved top with 0.3 metre shoulders in the future if desired. The travel potions of the trail should be kept clear of any lateral obstruction such as sign, benches, or garbage receptacles.

There are however, locations where a 4.6 metre surface is unachievable where the corridor narrows through 'cut' sections between the lakefront and steep rock cliffs. Widening these sections to achieve a consistent 4.6 metre is not economically feasible. In these locations the trail width may be reduced to a minimum of 3.0 metres with signage notifying users of the narrowed path in advance.

Appendix B illustrates the typical section described above.

Figure 2: Typical Section

4.3 Land Use Sections

Given the length of the proposed trail, a variety of different land use sections will interface with the adjacent trail corridor. From urbanized sections in the City of Kelowna to natural lakefront in the northern sections, trail users will experience a variety of environments. The most common land use sections along the trail include the land use sections show in **Figures 3** through **Figure 7**.

Figure 3: Agricultural Land Uses

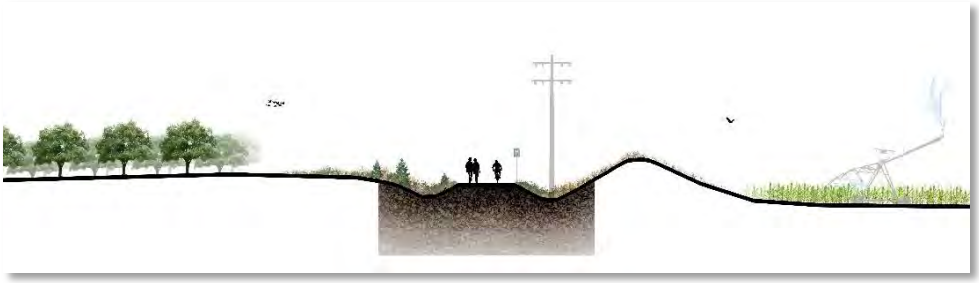


Figure 4: Residential Land Uses

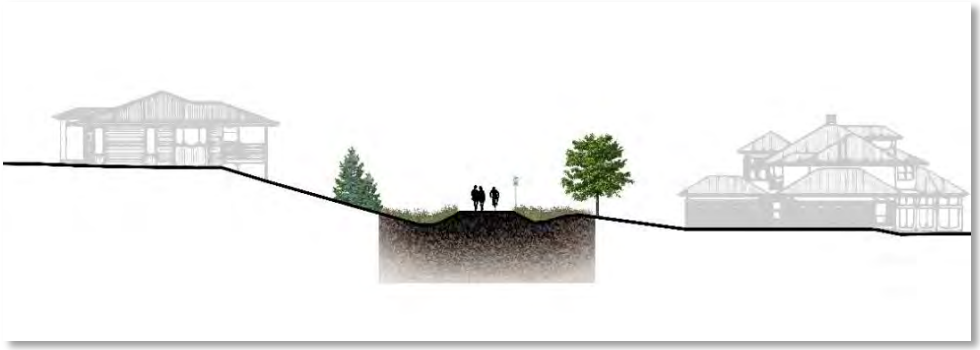


Figure 5: Road and Residential Land Uses

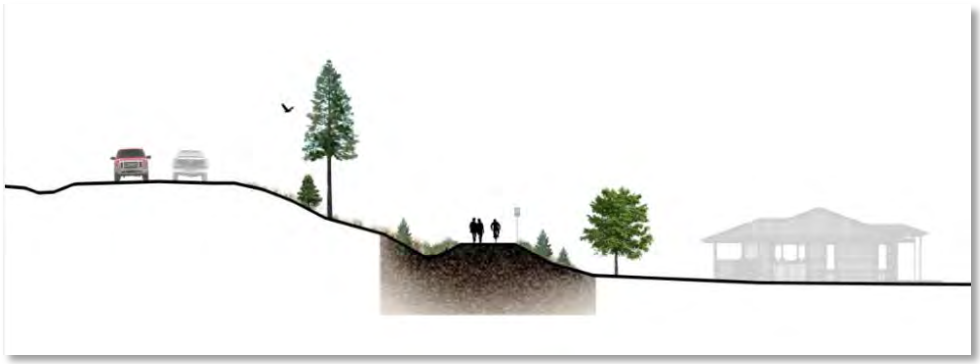


Figure 6: Industrial Land Uses

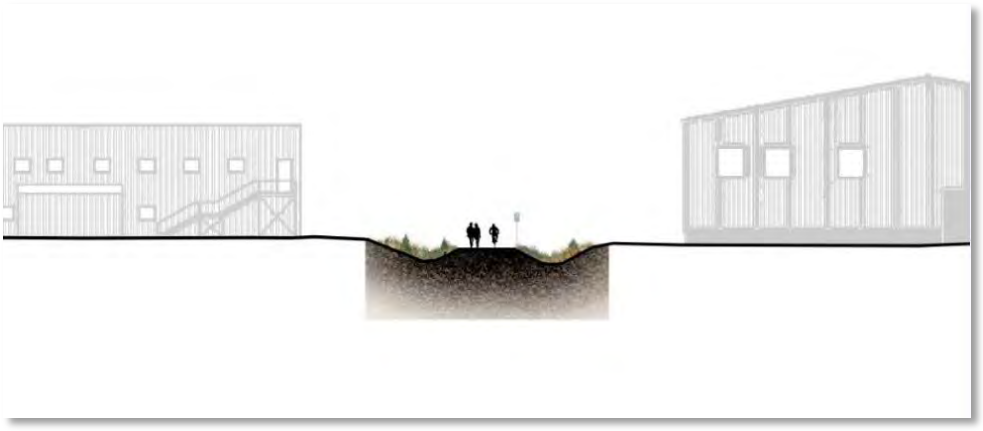
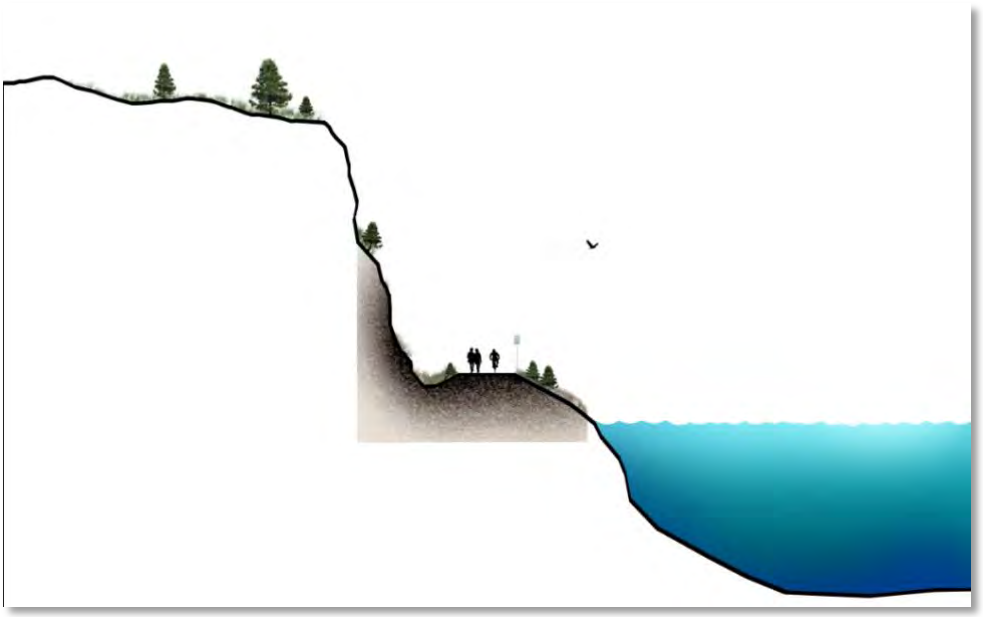


Figure 7: Lakefront



4.4 Access Control and Safety

Access control of the corridor and the safety of the public are both important short and long term considerations. Access control will be implemented at key access points and road crossings through the use of barricades (e.g. gates, fencing, and bollards). The objective of the access control is to prevent unintended use of the trail such as unauthorized motorized vehicles. Considerations for access by maintenance and emergency vehicles at all times will be made.

For the most part there is existing fencing along the corridor that delineates the old rail property from adjacent private property. The provision of new or replacement fencing along property lines, to delineate private property, deter trespass or enhance fencing that already exists, is not included in the scope of work or budget for the project. As with fencing in other applications in the community, the provision of fencing for these purposes is at the initiative of the party wanting the fence.

Safety fencing along some areas with potential risks to public safety has been considered (e.g. at the top of steep cut slopes along Kalamalka Lake) and an allowance has been provide in the budget for such fencing subject to future review and determination.

4.4.1 Barricade Plan

There is an immediate need to implement a barricade plan. A barricade plan created by Katim (**Appendix F**) on behalf of ORTI has been reviewed and incorporated into the development plan with input from the IDT. The plan investigates and identifies the risk of uncontrolled access to the trail, current practices, suggested locations and type of barricades.

It is recommended that gates and fencing be installed as soon as feasible at the identified access points on the Trail Development Maps (**Appendix A**) to reduce risk and liability due to improper use of the trail. The approximate budgetary cost to provide the initial access control is $200,000. The majority of the gates installed will be permanent, however, there may be instances where a gate may be relocated to accommodate future amenities or trail heads.

4.4.2 Road Crossings

There are approximately 50 road and driveway crossings along the trail corridor. As part of the development plan all crossing locations have been identified and required upgrades have been suggested. The crossings have been grouped into five categories: Class A through Class D, as well as a Class E which are site specific crossings. The upgrades range from 'do nothing' to pedestrian flashers and overhead pedestrian controlled signals. These typical crossings are illustrated in **Appendix C** and the assigned classifications for each crossing is identified, with the exception of Class D which is illustrated on the Development Maps in **Appendix A**.

The Transportation Association of Canada (TAC) Pedestrian Crossing Control Guide and Bikeway Traffic Control Guidelines were referenced to determine the treatment for each crossing. However, it should be noted that no traffic data such as Annual Average Daily Traffic (AADT) has been reviewed at this stage of conceptual development. It is recommended that these crossings be technically reviewed and updated using field survey, available traffic data, and comply with the jurisdiction standards during future trail concept development, finalization, and construction.

There are four site specific crossings which do not match the typical TAC road crossings:

- **McCurdy Road** – the trail crossing is in close proximity (30m) to the signalized intersection with Highway 97. A crossing this close to a major intersection is undesirable as it may cause traffic to back up into the intersection or be dangerous to pedestrians. It is recommended that trail users be directed towards the intersection crossing which is already established with crosswalks, islands, and signals. It should be noted that Highway 97 is in the process of being widened from four to six lanes which will reduce the separation distance between the trail and the McCurdy/Hwy 97 intersection;
- **Sexsmith Road** – high traffic volumes and industrial uses along Sexsmith Road may warrant a higher level of crossing treatment. At this stage it has been assumed that overhead pedestrian controlled signals similar to the ones on Glenmore Road south of Cross Road or at the intersections of Cawston Ave and Ellis Street will be installed; and
- **Airport Tugway** – KF Aerospace will periodically require the trail to be closed for a five-minute process for aircrafts to access the maintenance hangers. This crossing will require two gates which can be closed, locked, and restrict access during the aircraft crossing. Further development of this crossing needs to be reviewed with KF Aerospace and an appropriate protocol developed.
- **UBCO Connection** – The City of Kelowna is currently in the process of connecting a pathway from Bulman Road to the University. The design of the Bulman Road pathway connection has been reviewed and a future connection with UBCO, Bulman Road, and the Okanagan Rail Trail are able to be coordinated as an integrated trail network.

4.5 Environmental Considerations

Associated Environmental was engaged by the IDT team to complete the Environmental Assessment for the concept development plan. This work considered regulatory requirements, identified aquatic permitting and suitable work windows for any upgrades that may be necessary, and provided recommendations for future assessment, permitting and environmental management plans prior to upgrades.

4.5.1 Sensitivity Assessment Mapping

A desktop assessment of the corridor was conducted to identify environmentally sensitive sections along the alignment, and to prioritize sections for action into the future. Environmental sensitivities along the corridor, within 50 m of the centreline, were classified based on need for regulatory permitting, alignments close to sensitive aquatic and terrestrial habitats, and proximity to Agricultural Land Reserve. The purpose of this assessment was to support future environmental planning and identify mitigation necessary prior to construction to prevent impacts. The maps attached (**Figures 1 to 11, Appendix D)** have been prepared with the following environmental considerations:

- **Red** – Red areas depicted on the attached figures indicate the **most sensitive** sections where environmental assessment and management plans are recommended during planning and construction of any upgrades to the corridor. Specifically, high sensitive areas are considered:
    - Within 30 m of a mapped watercourse, including stream, creek, wetland, river and lakeshore;
    - Where masked* occurrences of a species at risk have been reported by the BC Conservation Data Centre (* n.b. this sensitive data is provided by the BC Conservation Data Centre in confidence, and the location and details of these occurrences is not publicly shared so is not labelled on the maps.
- **Yellow** – Yellow areas depicted on the attached figures indicate sections considered **moderately sensitive**, where environmental considerations may be necessary during planning and construction of upgrades to the corridor to avoid environmental effects. Specifically, yellow sensitive areas are considered:
    - Where occurrences of a species at risk have been reported by the BC Conservation Data Centre that is not masked from the public (species labelled where appropriate);
    - Agricultural Land Reserve (ALR) adjacent to the corridor.
- **Green** – Green areas depicted on the attached figures indicate sections considered **least sensitive**; however, since many habitats in the Okanagan support rare or endangered species and ecosystems, general environmental sensitivities may be considered during planning and prior to construction in these sections, although no permits or approvals are likely required. For example, the rail corridor traverses areas with steep slopes that may be a hazard, and areas that provide sensitive habitat to species at risk, including wildlife (e.g. badgers), plants (e.g. peach-leaved willow) and ecological communities (e.g. cattail wetlands). Mitigation planning prior to construction will help to identify sensitive features and make site-specific recommendations to prevent impacts.

Regulatory Considerations

The following regulatory framework applies for development of the corridor.

- **Development Permits**

  In each of the municipal jurisdictions, the Official Community Plans include conditions and requirements for **Development Permits** (DPs) to protect the natural environment (both aquatic and terrestrial ecosystems) and farming. Within the District of Lake Country, a DP is not required for the construction, repair or maintenance of municipal works by the District of its authorized agents or contractors. Otherwise, DP requirements in each jurisdiction should be evaluated prior to proceeding with construction planning.

  For example, DP requirements and guidelines for the **City of Kelowna** apply in the following conditions:

- Farm Protection DP application and approval is required before subdivision of ALR land; also when a Building Permit, Soil Permit, or alteration of ALR land associated with specific uses is proposed, including agri-tourism and utility services.
- Natural Environment DP application and approval is required before subdivision of land, and before alteration of land, including but not limited to clearing, grading, blasting, preparation for or construction of services, roads and trails.

Hazardous conditions are also considered DP areas in each jurisdiction. Hazards can include areas susceptible to flooding, mud flows, debris torrents, bank instability, erosion, groundwater seepage, land slip, rock falls, subsidence, avalanche or wildfire. Identification of hazards in these areas is *outside the scope of this report*; however, where construction adjacent to steep slopes may be necessary, we recommend discussing this activity with the appropriate jurisdiction, and if necessary, have it assessed by a qualified professional (e.g., geotechnical engineer).

Provincial Legislation

Riparian Areas Regulation process under Section 12 of the *Fish Protection Act* is triggered when development requiring a DP, building permit, or rezoning, is proposed within 30 m of the high water mark of a waterbody that supports fish or is connected to fish-bearing habitat. RAR defines riparian setbacks for development based on channel width, channel orientation, and potential riparian vegetation height. Development under RAR is broadly defined; for example, "development" includes any disturbance of vegetation or soil, and construction of trails or structures. In some municipal jurisdictions, a RAR assessment is required for any development within 30 m of a stream or lake to determine the Streamside Protection and Enhancement Area (SPEA) setback. If SPEA setbacks cannot be met with proposed designs, then Fisheries and Oceans Canada (DFO) must be consulted and authorization under the *Fisheries Act* may be required.

Government bodies are exempt from RAR; however, not all local governments observe this in the same way. In the City of Kelowna, RAR is replaced by the Natural Environment DP process. In the District of Lake Country, municipal works are exempt from DPs so RAR is not triggered. North Okanagan Regional District and District of Coldstream may require DPs for municipal works such as upgrades to the trail, and would therefore trigger the need for RAR assessment. RAR is not required on lands under federal jurisdiction, including the Okanagan Indian Band reserve.

The ***Water Sustainability Act*** is provincial legislation that protects and manages the use and diversion of both surface and ground water resources. Under Section 11 of the Act, any activities that result in changes in or about a stream require notification or approval, which is usually accompanied by an environmental assessment detailing expected impacts to the aquatic and riparian habitat, mitigation strategies and environmental monitoring during construction.

The **Okanagan Large Lakes Foreshore Protocol** provides guidelines to ensure that works within large lakes do not impose direct or long term cumulative impacts of kokanee shore-spawning habitat. Under this protocol, the foreshore of Okanagan lakes is classified into four zones:

- Black is critical habitat;
- Red is high to very high value habitat;
- Yellow is generally moderate, with some high value habitat; and
- No Colour is unclassified or low value habitat.

Along the corridor are sections of black, red and yellow classified habitat for shore spawning kokanee (see attached maps) identified by the Okanagan large Lakes Foreshore Protocol. There is no specific permitting required by the protocol, but upgrades to the corridor in these sections will need to incorporate these zones and appropriate mitigation as part of ***Water Sustainability Act*** Section 11 applications, and authorization under *Section* 35(2) of the ***Fisheries Act*** may also be required if works are expected below the high water mark.

Applications **to the Agricultural Land Commission under Section 34 (6) of the *Agricultural Land Act* are required when there is dedication of a right of way, construction, or new use of an existing right of way for a recreational trail through Agricultural Land Reserve (ALR).** Guidelines provided by the Commission and local government bylaws work to minimize the potential for conflict between farm and non-farm uses (including recreation) adjacent to ALR. Best practices include maintaining a minimum separation distance between non-farm uses and ALR (e.g.15 m), and incorporating trespass-inhibiting vegetation, earth berms, and fencing. Also **no-build/no-disturb covenants are occasionally requested to maintain this buffer. Approximately 19.4 km (about 40 %) of the corridor traverses through designated ALR, and requires liaison with the Commission.**

A portion of the corridor traverses Kekuli Bay Park on the west side of Kalamalka Lake (at 7 km, Figure 2 map), and will be subject to the *Protected Areas of British Columbia Act,* and the Park, Conservancy and Recreation Area Regulation under the *Park Act*. Direct liaison with B.C. Parks is recommended to determine the status of land and requirements moving forward.

Federal Legislation

The ***Fisheries Act*** is the federal legislation affecting all fish, fish habitat and water quality. The Act prevents anyone from causing serious harm to fish. The *Fisheries Act* requires a request for review to Department of Fisheries and Oceans Canada (DFO) prior to work. If the project is deemed to have the potential to have serious harm to fish, DFO will request an application for project authorization, at which time measures to avoid or mitigate serious harm will be required. Please note that authorizations may take over 120 days for processing.

The portion of the corridor traversing the Okanagan Indian Band Reserve will be subject to federal legislation, including the ***Species at Risk Act*** for any species or their habitats that occur on Schedule 1 of the Act. Liaison with Indigenous and Northern Affairs Canada (INAC) may also be necessary.

4.5.2 Considerations in Aquatic Habitat

The following considerations have been made for aquatic habitats at bridge crossings and shoreline interfaces.

- **Bridge Crossings**

  Up to seven bridge crossings are being considered for upgrade prior to opening the Okanagan Rail Trail, including resurfacing and installation of railings. The location of these crossing locations on the attached maps for reference, and the area within 30 m of a crossing is considered most sensitive (red zones). Short environmental assessments, including a site visit, will be necessary to prepare environmental management plans and permit applications (Section 11 *Water Sustainability Act*) for upgrades to these crossings. Upgrades of these crossings will be exempt from DPs and RAR, but this is ultimately at the discretion of local governments.

- **Lakeshore Upgrades**

  Based on the mapping of the corridor, approximately 22 km of the corridor occurs along the shores of Kalamalka, Wood and Ellison (Wood) lakes. Sections of the corridor that are within 30m of a lake are considered most sensitive (red) for the purposes of this assessment; however, further consideration of shore-spawning habitat sensitivity are necessary for sections where foreshore protocol habitat ratings apply (i.e. black, red and yellow zones on the attached maps). Repairs to subgrade and erosion protection at or below the high water mark in lakeshore areas will require applications (for notification or approval) under Section 11 of the *Water Sustainability Act*, depending on the extent of construction. Applications will require environmental assessment and environmental management plans for construction. We also assume that upgrades at lakeshore will be exempt from DPs and RAR, but this is ultimately at the discretion of local governments.

  Least-risk work windows apply for all construction below the high water mark of lakes and tributaries, especially in areas where foreshore protocols indicate shore-spawning habitat. In some cases, work outside of the least-risk window can be completed if construction is isolated.

4.6 Archaeology Considerations

The Okanagan Valley is the traditional territory of First Nations people, and the rail line route is through an area of significant importance. The land and lakes between Kelowna and Coldstream provided aboriginal people opportunities for settlement, hunting, fishing and travel. The IDT recognizes the importance of preserving archeological sites within the study area and will be engaging an archaeologist to work with Okanagan Indian Band's Territorial Stewardship Team to identify known or suspected sites to avoid impacting them during construction.

During the next phase of the Trail Development Planning, the IDT will work directly with OKIB to firstly undertake a preliminary review of the route to identify areas of significance and then to develop an appropriate protocol for possible findings during construction.

4.7 Construction Methods and Considerations

We are advised that by the end of 2016 CN Rail will have removed the entire rail, ties, and completed its environmental remediation. The corridor will be left in its current state minus the railway rails, ties, spikes, crossings, and railway equipment. The existing rail bed, while it varies throughout, is approximately 3.0 metres wide at the top shoulder of the track, with 2:1 side slopes.

A construction project with this length and scope requires many considerations and assumptions as the corridor varies significantly over its length. Below is a summary of construction considerations made for the initial budgeting of the trail:

4.7.1 Alignment

It has been assumed the current alignment is within the corridor's property lines and that the trail will be built following the same horizontal alignment. There may be a few areas where the alignment should be moved or built to one side, especially along Kalamalka Lake and adjacent to properties that are in close proximity. These will be regular cut and fill operations where excess cut materials will be placed.

4.7.2 Trail Sections

To achieve the desired 4.6 metre width, the existing 3.0 metre wide sections will need to be widened. This process is best described with the typical construction sections in **Appendix E**. The railway was generally built with fill material which provides the opportunity to cut approximately 500mm to achieve the desired width. However, sections where cutting would create a negative effect on ditching and drainage, the width could be achieved by building an extended shoulder using material from the local cut sections. Once the width of the subbase is adequate, it will need to be regraded and compacted to ensure the structure is adequate and sufficient drainage is achieved. Finally, 100mm thickness of high fines 19mm crush aggregate can be placed, prepared, and compacted.

A topographic survey has not been completed at this stage of development but field investigations suggest that a balance of cut and fill sections should be achievable. It is important to note that importing and disposing of cut material offsite is limited as hauling material is not economical due to limited access and distances.

4.7.3 Geotechnical Considerations

On March 21st, 2016, Interior Testing Services Ltd. (ITSL) observed a total of eight (8) test pits to a depth of approximately 800mm below the existing grade. The test pits were located at McCurdy Road, Old Vernon Road, the north east corner of Wood Lake, and Kekuli Bay; two test pits were completed at each location.

75mm of ballast was encountered near McCurdy Road and at the north east corner of Wood Lake. Minimal to no ballast was observed near the Old Vernon Road and Kekuli Bay test pit areas. In general, the soils beneath the underside of the rail ties or beneath the ballast consisted of clean, coarse to gravelly sands, which appear to be suitable for re-use for trail development. Several samples of both the granular soils and the ballast were recovered and gradation analyses will be completed.

The finished trail surface is important to the user experience and longevity of the trail. While the existing subgrade material is suitable as a subbase, an additional 100mm thick surface of high fines 19mm crushed aggregate is recommended. 19mm crushed aggregate with high fines was selected as the finished surface because it is compatible with the natural environment, available in adequate quantities, economical, durable, and, if compacted properly, is acceptable to a large number of user groups such as walkers, joggers, bicyclists, strollers, and wheel chair/electric personal assistive mobility devices. The high fines added to the 19mm aggregate allow for a more compact and firm surface. This is important for heavily used trail as it reduces the amount of rutting and maintenance required.

This recommended structure is also adequate for future paving. Should paving be considered it is recommended that the surface be regraded and that 50mm of additional clean 19mm crushed aggregate be added to ensure effective drainage.

4.7.4 BALLAST

The original rail base was surfaced with approximately 200mm of ballast, and currently, only some portions of the rail ballast have been maintained. Ballast is a uniform large rock material approximately 50-75mm and is difficult to reuse as is. Associated Environmental completed test analyses on the ballast using a modified EPA, ABA classification scheme (EPA 1994, Price 2009). The results from the analysis of five samples along the corridor indicate that the ballast material had no acid generating potential and very low sulphide mineral content. Further sampling and analysis may be warranted in the future in response to site specific observations that may suggest a potential for acid generating potential.

Several options have been considered for the ballast:

- **Remove and Dispose** – this method is expensive and disposal locations are not readily available.
- **Crush and Reuse** – it may be viable to crush and reuse the ballast as an acceptable surface material if it is blended with the subbase. The viability of crushing the ballast needs to be explored further but discussions with several local aggregate firms have been positive and it appears it is economically viable. Further testing to determine the quality of material (e.g. hardness, gradation) produced by crushing has already been scheduled and should be completed by the end of April, 2016.

- **Blending with Subgrade** – the ballast can be blended with the subgrade to a depth of 500mm using a machine referred to as a road reclaimer. The viability of blending the ballast with the subgrade has been discussed with a contractor who has experience with the same application in the past and process appears to be economical.

In preparation of this report construction, pricing has been discussed with experienced contractors for the above three methods. The crushing/reuse option and the blending with subgrade option have similar costs and benefits, and both options appear constructible and feasible. Removing and disposing of the ballast would be very costly and is not being considered further.

4.8 Amenities

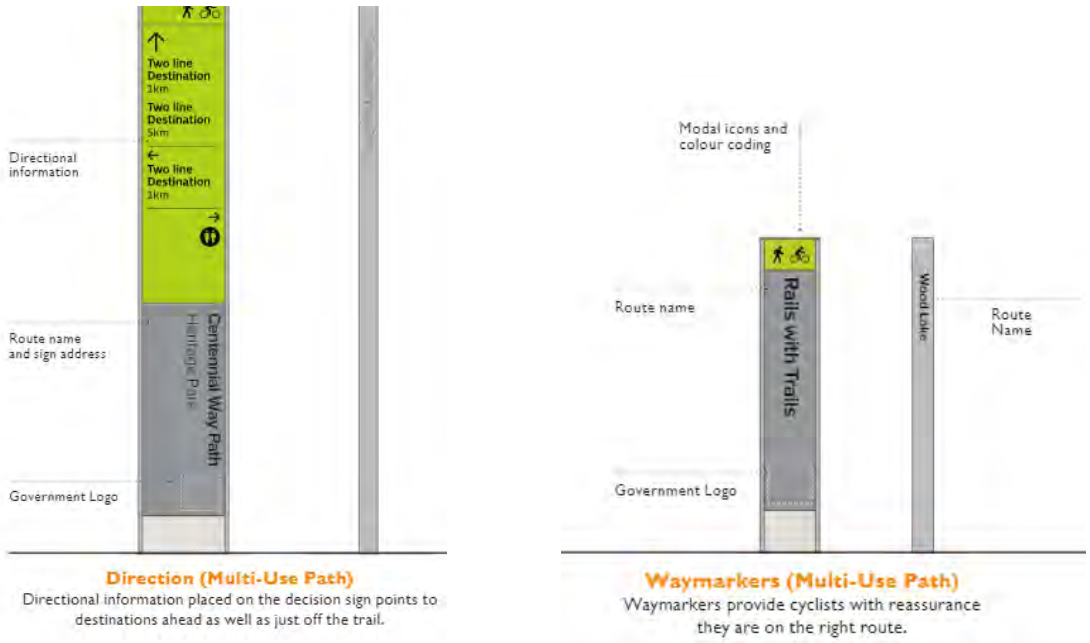
For this initial phase of trail development a basic provision of amenities will be provided, including garbage receptacles and where appropriate, dog bag dispensers in high traffic areas. Although not originally within the scope of this project, the IDT understands that as the trail is developed, amenities such as parking and washrooms at established trail heads will be high priority. It is anticipated that over time and as budgets allow, additional amenities will be built to meet the needs of users.

4.8.1 SIGNAGE

Initial signage for the trail will be limited to regulatory, advisory, and information purposes and should follow the Manual on Uniform Traffic Control Devices (MUTCD) standards. The Central Okanagan regional wayfinding strategy will likely be used to provide a basic level of consistent signage for directional and destination information. The IDT team will confirm the signage requirements for the North Okanagan region communities.

It is expected that over time Okanagan Sylix language and history will be incorporated into the design of interpretive and points of interest signage.

Figure 8: Indicative Regional Signage (Source: Regional Wayfinding Strategy)



5.0 Consultation and Community Engagement

5.1 Community Engagement

The public input opportunities occurred as a series of open houses, online idea generation and an online survey between March 14 to March 27. Open houses were held in each owner jurisdiction (District of Lake Country, City of Kelowna, Okanagan Indian Band, and Regional District of North Okanagan). The engagement was designed to gather input for the initial phase of trail development and additional feedback collected from the engagement process will be retained for future reference, for use in any future planning and development of the trial corridor.

Attendees were encouraged to review display boards, speak to staff and visit online to complete the survey which offered an interactive map feature.

This report provides a summary of input received through the survey and map.

5.1.1 Process

Figure 9: Consultation Process

March 2016	April 2016	2016	2017
PUBLIC INPUT OPPORTUNITY	**COUNCIL/BOARD APPROVAL**	**COMMUNITY DRIVEN FUNDRAISING**	**CN WORKS COMPLETE**
Involve: Invite feedback from stakeholders and the public to make sure concerns and aspirations are considered and understood. Ensure the outcome is informed.	Basic trail design proposed for respective council and board approvals	Okanagan Rail Trail Initiative launches fundraising campaign	Municipalities & OKIB inform (report back) on fundraising milestones, state of the corridor and projected timelines for use: provide balanced and objective information in a timely manner
	NOW	**NEXT STEP**	

5.1.2 Notification

Communications for the Okanagan Rail Trail input started on March 3 with a media release, placing a highlight on the City of Kelowna's homepage, and a concentrated push through social media, particularly on Facebook, Twitter and Instagram on both the City of Kelowna and the District of Lake Country pages.

The material emphasized three points:

1. The opportunity to give feedback at four open houses, one in each owner jurisdiction, and online with an interactive map feature at getinvovled.kelowna.ca.
2. Input will inform the initial phase of trail development and additional feedback collected from the engagement process will be retained for future reference.
3. The initial phase of trail development would be limited to construction of a basic gravel trail with road crossings, signage, and barriers for safe and accessible use by pedestrians and cyclists.

Partners also utilized other channels, including: direct mail invitations to all adjacent property owners along the 50 km rail corridor, an email invitation to MLA's and MP's, print ads in the Kelowna Capital news, Lake Country Calendar and Vernon Morning Star newspaper.

The New View newsletter in Lake Country printed the complete media release about the survey and open houses and was distributed to every mail box in the District of Lake Country.

A Public Service Announcement on March 11 reminded residents in all communities of the open house and survey dates.

5.1.3 OPEN HOUSES

Figure 10: Community Consultation Summary

Four open houses were held, one in each owner jurisdiction (District of Lake Country, City of Kelowna, Okanagan Indian Band, Regional District of North Okanagan), receiving more than 940 attendees.

Display boards giving background information, the trail development vision and benefits, cross-section concepts, aerial map images of the trail route and next steps offered attendees the chance to review information and ask questions of the consultants and Inter-jurisdictional Development Team staff who were present.

Two sets of the aerial maps were made available to allow greater interaction for attendees and staff to answer specific questions.

The Okanagan Indian Band Open House was paired with an existing community planning exercise so the display was pared back for this session due to space. Attendees had the opportunity to view the trail development as part of other initiatives planned for their community.

5.1.4 *Interactive Online Map*

For broader outreach to neighbouring communities, efficiencies and cost-savings, the "Have your Say – Okanagan Rail Trail" Inter-jurisdictional community survey was administered through the City of Kelowna's Get Involved website, as the only jurisdiction with a community engagement platform already in place.

The platform allowed respondents to identify a specific location-based opportunity for the trail and make a comment or submit an idea with the geographic location marked. Respondents were required to sign-up with a valid email address to use the platform and map feature.

The home page received more than 10,000 views and 160 ideas were submitted. Respondents interacted with one another by commenting, liking and scoring submitted ideas, more than 2,300 of these interactions were recorded.

5.1.5 *Survey*

An online survey was available on the home page at the City of Kelowna's Get Involved website driving visitors to one website, but the survey was developed and administered through Fluid Surveys, which did not require the user to create an account. Question types ranged from open-ended responses to rank ordering to simple yes/no answers.

The online survey was available from March 14 to March 27. There were 687 responses with 613 completed responses. While not a statistically valid survey, the primary objectives of the engagement were to:

- Obtain input from residents and stakeholders in all jurisdictions
- Identify and record current and future issues identified
- Incorporate public input into the trail development plan as much as possible
- Obtain comment on the trail concepts

More than 550 fact sheets promoting the website address were distributed and attendees were encouraged to fill out the online survey. Hard copies of the surveys were available upon request at the open houses.

The feedback form had several limitations:

- Individuals could fill out the online feedback form multiple times provided they used a different computer or mobile device
- Individuals who do not reside in the study area could fill out the form
- The map feature was only available online and the platform required respondents to create a user profile which may have limited the number of responses
- The survey was primarily available online which may have limited responses

5.1.6 WHAT WE HEARD

The premise of a trail development plan is that residents and visitors will utilize such a facility. Respondents were asked if they supported development of a trail in the recently acquired Okanagan Rail Corridor and given the opportunity to provide comments about why or why not.

96% of respondents support development of a trail in the Okanagan Rail Corridor. Of those that did not support development of a trail, the reasons given related most frequently to wanting to see the rail service as it had existed continue, preferring to see a passenger rail service or trolley service operate on the tracks and opposition to the cost for acquisition, development and maintenance.

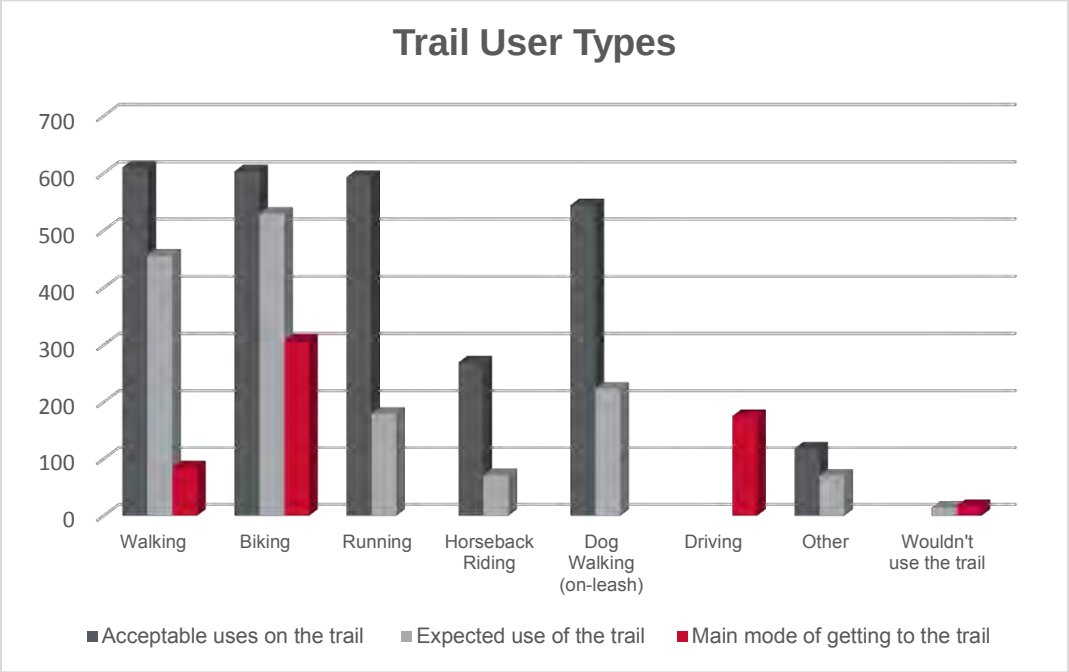
> We want to use it as soon as possible, so developing it initially for use and adding services as we go would be great!
>
> *- Online feedback comment*

Trail Users and Behavior

Respondents were asked to identify their main mode of getting to the trail, how they expected they would use the trail themselves and what they would consider acceptable uses on the trail, keeping in mind that Inter-jurisdictional partners had agreed during the corridor acquisition that trail use would be non-motorized.

As the chart below shows, the main mode of getting to the trail as well as the main use expected on the trail was identified as biking.

Figure 11: Trail User Types



Understanding how residents will use the trail will also help in determining design requirements and future amenity needs. While a number of comments from the open-ended feedback focused on suggestions or complaints about the merits of dogs and/or horses sharing the trail, less than half of the respondents expected to use the trail for those purposes.

Most respondents said they would use the trail once or twice a month (37%) and sixty-four per cent of respondents expected to spend between 1 and 3 hours on the trail per single use.

The majority of respondents said they would expect to travel between 6km to 10 km (30%) and between 11km to 20 km (23%) per single use, together those distances represent more than half the respondents.

My hope is that most people would walk or bike to the trail, so that parking lots could be minimized. For running, an asphalt surface is actually not the best - I would prefer the trail to remain a crush trail. It would be nice if the trail could include playgrounds, interpretive signage, and spur trails to other existing facilities.

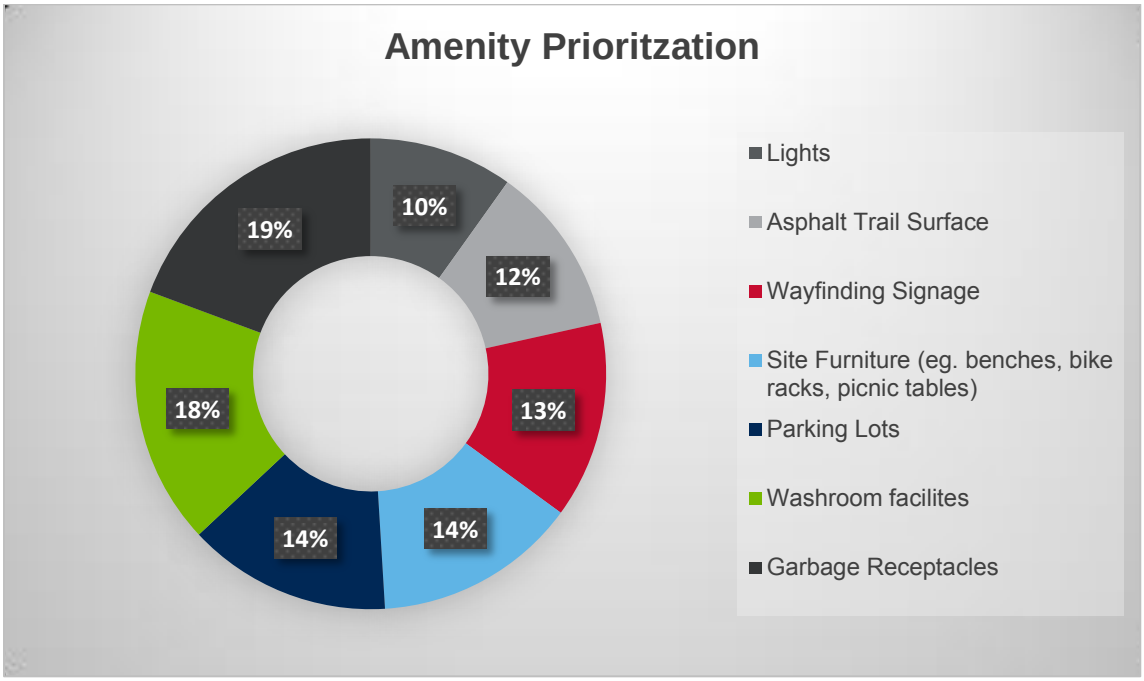
- Online feedback comment

Trail Amenities

Potential improvements to the trail corridor are being deferred until a basic trail can be delivered. Amenities will be reviewed for future, long-term consideration.

Survey respondents prioritized future amenities in order of importance. By attaching a score to each rank (1 being the most and 7 being the least important), amenities were prioritized as follows:

Figure 12: Amenity Prioritization



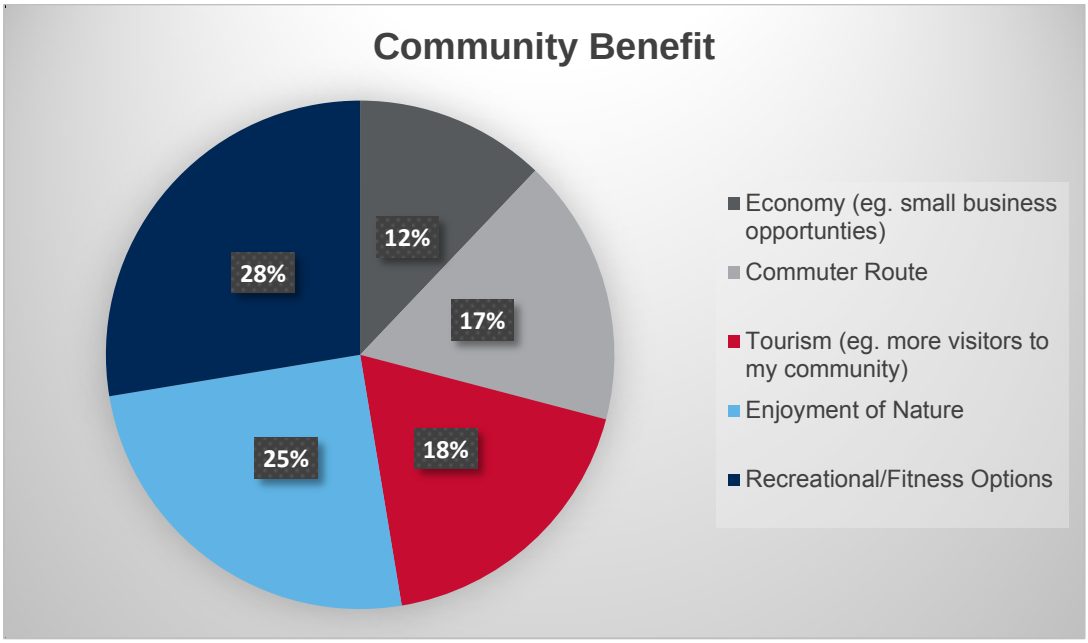
It is interesting to note that while asphalt surfacing had the most first place rankings (24%), it also had the most (and a greater number) of last place rankings (37%). Therefore, the other amenities that were also ranked first and more frequently second and third, had overall higher scores and ultimately an asphalt trail surface falls with lights as the last priorities for respondents.

In considering protection and development of the Okanagan Rail Corridor for use as a public right of way to benefit residents and provide opportunities to meet the transportation and economic needs of the region in the future, survey respondents ranked the primary opportunity for the trail as recreational/fitness opportunities, followed by enjoyment of nature.

I think the trail will be best if kept simple and natural. There is of course a need for safe street crossing, garbage cans and a few benches, but not interpretive signs, art work, even paving. People love to walk along the tracks as it is, its natural beauty is the appeal.

- Online feedback comment

Figure 13: Community Benefit



Common Themes

Common themes that emerged from the open-ended feedback included:

- Importance of connectivity to existing trails, expanding routes or major destinations (particularly UBC Okanagan)
- Private property concerns about trespassing, security, aesthetics
- Requests and suggestions about users (for and against dogs, for and against horses, electric assist bikes, power wheelchairs etc.)
- Considerations for parking, maintenance and access to the trail
- Comments about preserving the natural aspects and wildlife
- Regional opportunities for tourism, business and commuting

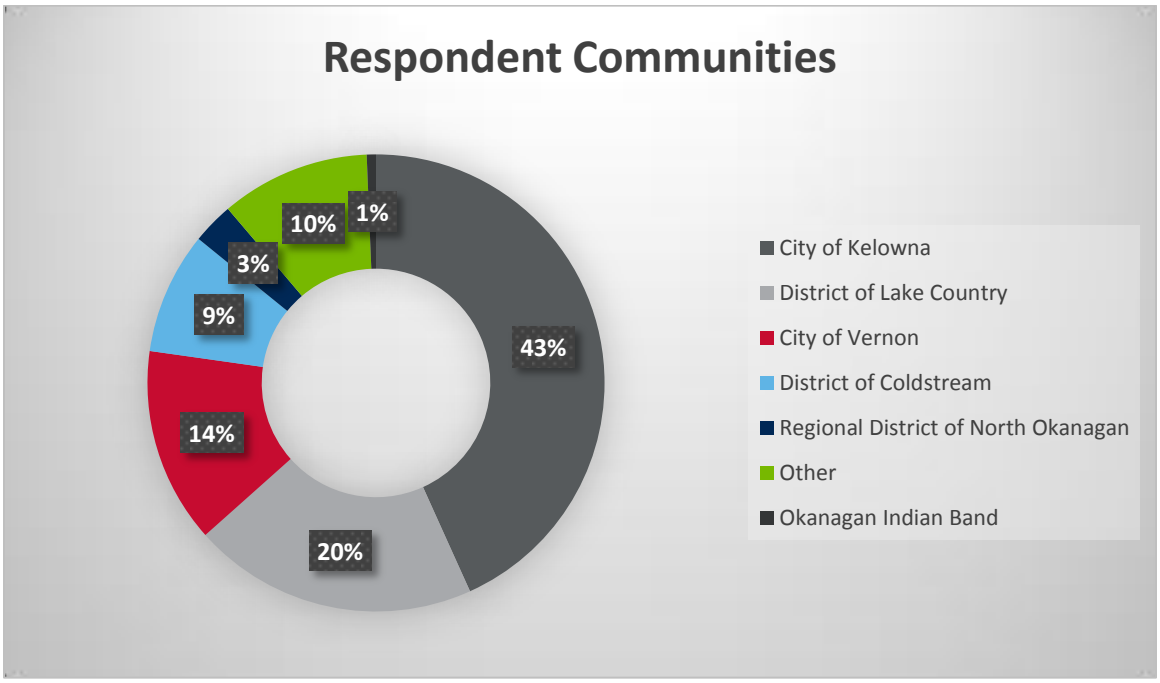
The interactive map allowed users to submit ideas and then to rate other ideas on a scale of 1 to 3, with 1 being 'neutral' and 3 being 'I love it'. The most supported ideas from the map ideas submitted and supported by other users include:

- Priority link to UBC Okanagan (179 votes)
- Beach access points along the trail (79 votes)
- Circle route around Wood Lake (76 votes)
- Bird sanctuary and viewpoints (69 votes)

Respondent Demographics

While not statistically valid respondents ranged in age from 51-60 years (28%) and more than 61 years old (26%) to 31 – 40 years old (17%) and 41 – 50 years old (17%) with 12 per cent of respondents less than 30 years old. Respondents represented populations from across the North Okanagan, with 10 per cent identifying from other communities, mainly West Kelowna and the lower mainland.

Figure 14: Respondent Communities



6.0 Budgetary Capital Cost

The key objectives of the Phase 1 Trail Development plan was to complete a reasonable amount of investigation to develop a conceptual plan and budgetary capital cost estimate for public input and to provide the Councils and Board, with adequate information to approve the concept and for fundraising to commence.

A Class 'C' cost estimate, as defined by the Associations of Professional Engineers and Geoscientists of British Columbia (APEGBC) Budget Guidelines, has been completed and reflects the anticipated costs to design, procure, and construct the initial phase of the Okanagan Rail Trail as outlined above. A Class 'C' cost estimate is the appropriate level to use at this stage for budgeting purposes and setting fundraising targets The estimate is prepared with limited site information, is based on probable conditions affecting the project, and represents the summation of all identifiable project component costs. Class 'C' cost estimates are used for program planning, to establish a more specific definition of client needs and to obtain approval in principle. A contingency allowance of 40% including engineering and other contingencies during construction is appropriate for this class of estimate.

The estimated capital cost to complete the concept development and to create contract documents, procure, and construct the trail is $7,690,000. This estimate does not include an allowance for GST. See **Table 1** below for a breakdown of the estimated cost.

Figure 15: Estimated Cost Breakdown

ITEM	TOTAL AMOUNT
Trail Construction	$2,950,000
Access Control and Road Crossings Upgrades	$1,129,000
Drainage Upgrades	$350,000
Environmental/Bridges/Rock Scaling	$1,063,000
Sub-total	**$5,492,000**
40% Contingency and Engineering Allowance	**$2,196,800**
Total	**$7,688,800**

There are opportunities to stage the construction into more manageable phases of work to provide interim fundraising goals. Interim fundraising goals may build momentum and allow some preconstruction and site preparation to occur. The preconstruction and site preparation work would not be phased based on jurisdictions but rather by type of work. For example, detailed design, contract preparation, rock scaling, cleaning culverts, and ditching could be completed prior to the main construction of the trail.

Below is a list of key construction costs considered and assumptions included in the budget:

- Archaeological – an overview will be completed and a project protocol will be developed for implementation during construction to best manage risk and costs.
- Mobilization – an allowance has been included for approximately four laydown sites. These sites have not been identified at this time.
- Layout Survey – it is assumed at this time that the current rail alignment is within the legal right of way and there is sufficient legal and field evidence for the contractor to complete regular checks to ensure work is maintained within the right of way.
- Ballast – based on the testing to date it is assumed there are no environmental concerns regarding the ballast.
- Clear and grub – limited to locations where additional width is created with fill beyond the current rail section envelope.
- Hydroseeding – areas to be seeded with a drought tolerant mix will be limited to locations where additional width is created with fill material beyond the current rail section envelope.
- Access control and road crossings – based on the classifications shown in **Appendix C** and assumed traffic volumes. Actual volumes to be confirmed during further concept development.
- Fencing – included at road crossings, however, no fencing for security of private property or safety fencing for steep slopes has been included.
- Signage and wayfinding – minimum signage for safety and road crossings and 'you are here' signage has been included. Interpretive and point of interest signage is not included in this initial phase.
- Ditching and Drainage – in general the existing drainage is good. The construction methods proposed have minor impact on the existing drainage. It has been assumed that 20 existing culverts need to be extended and approximately 300-400m of culverts need to be installed.
- Bridge decking and rails – it has been assumed the structures are in good condition and that it will be required to provide decking of some structures and safety rails on both sides of all structures. Therefore it has been assumed that minimal environmental permitting is required due to the nature of the work.
- Rock scaling – based on current site investigation, further investigation and a rock scaling program needs to be discussed with geotechnical and professionals in the field of rock scaling to develop the appropriate approach. The cost estimate includes an allowance for this investigation and for some scaling.
- Erosion control – limited to repair of existing gabion walls along Kalamalka Lake.
- Environmental permits and protection – assumes that a blanket environmental permit per jurisdiction is adequate and silt fence and an Environmental Management Plan during construction is adequate.

7.0 Schedule

The timing for construction and opening of the initial phase of the trail is contingent on funding availability. Moving forward with any design and construction work is dependent on a successful community fundraising campaign and will ultimately be at the discretion of the Councils and Board of the partnering jurisdictions.

With the community fund raising commencing in the spring of 2016, it is possible that construction could start in 2016. Early construction would include barrier, gates, and signage to deter unauthorized access until trail is completed and open for use.

Next, subject to funding availability, safety and environmental protection works (e.g. rock scaling, drainage) would likely be undertaken.

Actual construction of the trail would be reserved until the last phase of construction. This will ensure a continuous, fully functional trail can be opened at one time without concerns for interruption by construction traffic.

8.0 Long Term Corridor Development

By acquiring the corridor the communities have made a long-term commitment for ultimate development of the rail corridor as a public multi-modal regional transportation corridor. Part of that long term commitment is ensuring potential future uses of the corridor are accommodated during any proposed surplus land disposal and other short term planning.

Light Rail Transit (LRT) has been considered as a possible long term regional mode of transportation along the corridor. To ensure future use as a LTR corridor it is important that the communities consider encumbrances are limited and right of way requirements are maintained.

As part of the concept development the required right of width to allow an LRT service and an adjacent trail were considered. A minimum 20 metre corridor of flat land is recommended for a regional LRT corridor.

Appendix G illustrates the typical sections investigated for future LRT. Neither a field nor desktop investigation of the constructability or design criteria of an LRT system along the corridor has been completed.

9.0 Next Steps

The preparation of this Trail Development Plan is the first step in the process to convert the existing rail bed into a functioning regional trail. Following the finalization of this plan, several additional steps are required to progress the project towards design and construction. A broad outline of those steps are described below:

1. Review input from Councils/Board and Public Open Houses
2. IDT to work with ORTI to commence the community fundraising campaign
3. Further Land Review (Issues and Opportunities)
    a. Parking
    b. Transportation and Connectivity – Connection to existing or future trails
    c. Land acquisitions or disposal
4. Complete the conceptual design – including Survey, Traffic, Drainage, Geotechnical (crush tests and rock scaling analysis), Environmental, Structural and Archeology overview and protocol development
5. Develop phased construction options (e.g. test sections)
6. Preliminary design and permitting
7. Contract documents
8. Barricade/access control installation
9. Contract procurement method – evaluation

As more site investigation and analysis is completed, additional steps maybe required to support the design and construction.

Appendix A

Trail Concept Maps

Okanagan Indian Band

LAKE COUNTRY
Life. The Okanagan Way.

REGIONAL DISTRICT NORTH OKANAGAN

City of Kelowna

URBAN systems

Okanagan Rail Trail Overview

Vernon
Coldstream
1Mi
2Mi
88Mi
89Mi
90Mi
91Mi
92Mi
93Mi
94Mi
95Mi
96Mi
97Mi
98Mi
99Mi
100Mi
101Mi
102Mi
103Mi
104Mi
105Mi
Winfield
106Mi
107Mi
108Mi
109Mi
110Mi
111Mi
112Mi
113Mi
114Mi
115Mi
116Mi
117Mi
118Mi
RAIL TRAIL
Kalamalka Lake
RDNO Area B
RDNO Area D
KALAMALKA LAKE PARK
ELLISON PARK
ELLISON PARK
FINTRY PROTECTED AREA
FINTRY PARK
FINTRY PARK
FINTRY PROTECTED AREA
Okanagan Lake
Spion Kop Crown Lands
Wood Lake
Oyama
Oyama Lake
Lake Country
OKIB IR 7
Ellison Lake
Stephens Coyote Ridge
Airport
UBCO
BEAR CREEK PARK
Kelowna
Knox Mountain Park
Rose Valley
Existing Multi-Use Pathway
Dillworth
Rutland
West Kelowna
IR#10
Downtown
Google

The accuracy & completeness of information shown on this drawing is not guaranteed. It will be the responsibility of the user of the information shown on this drawing to locate & establish the precise location of all existing information whether shown or not.

Legend

- Mile Markerpost
- Rail Trail Centerline
- Existing Multi-Use Pathway (City of Kelowna)
- Parks
- Administrative Boundaries

0 250 500 1,000 1,500
Metres

N

Coordinate System:
NAD 1983 UTM Zone 11N

Data Sources:
City of Kelowna
RDCO
District of Lake Country
Google Maps
Geogratis

URBAN systems

City of Kelowna

Lake Country
Life. The Okanagan Way.

Okanagan Indian Band

OK Rail Trail Corridor

Legend

- ● Road / Trail Crossing
- Barricade
- Rail Trail Centerline
- Administrative Boundaries

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m

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Coordinate System:
NAD 1983 UTM Zone 11N

Data Sources:
City of Kelowna
Regional District of Central Okanagan
Regional District of North Okanagan

Project #:	0467.0447.01
Author:	RT
Checked:	
Status:	IFU
Revision:	B
Date:	2016 / 4 / 4

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Sheet 1

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City of Kelowna

Lake Country
Life. The Okanagan Way.

Okanagan Indian Band

OK Rail Trail Corridor

Road/ Trail Crossing Types

Class A
Class B
Class C
Class D
Class E (site specific)

Legend

- Rail Trail Centerline
- Administrative Boundaries

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m

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Coordinate System:
NAD 1983 UTM Zone 11N

Data Sources:
City of Kelowna
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Regional District of North Okanagan

Project #: 0467.0447.01
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Date: 2016 / 4 / 4

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City of Kelowna

LAKE COUNTRY
Life. The Okanagan Way.

Okanagan Indian Band

OK Rail Trail Corridor

Legend

- Road / Trail Crossing
- Barricade
- Rail Trail Centerline
- Administrative Boundaries

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Data Sources:
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Regional District of Central Okanagan
Regional District of North Okanagan

Project #:	0467.0447.01
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Status:	IFU
Revision:	B
Date:	2016 / 4 / 4

URBAN systems

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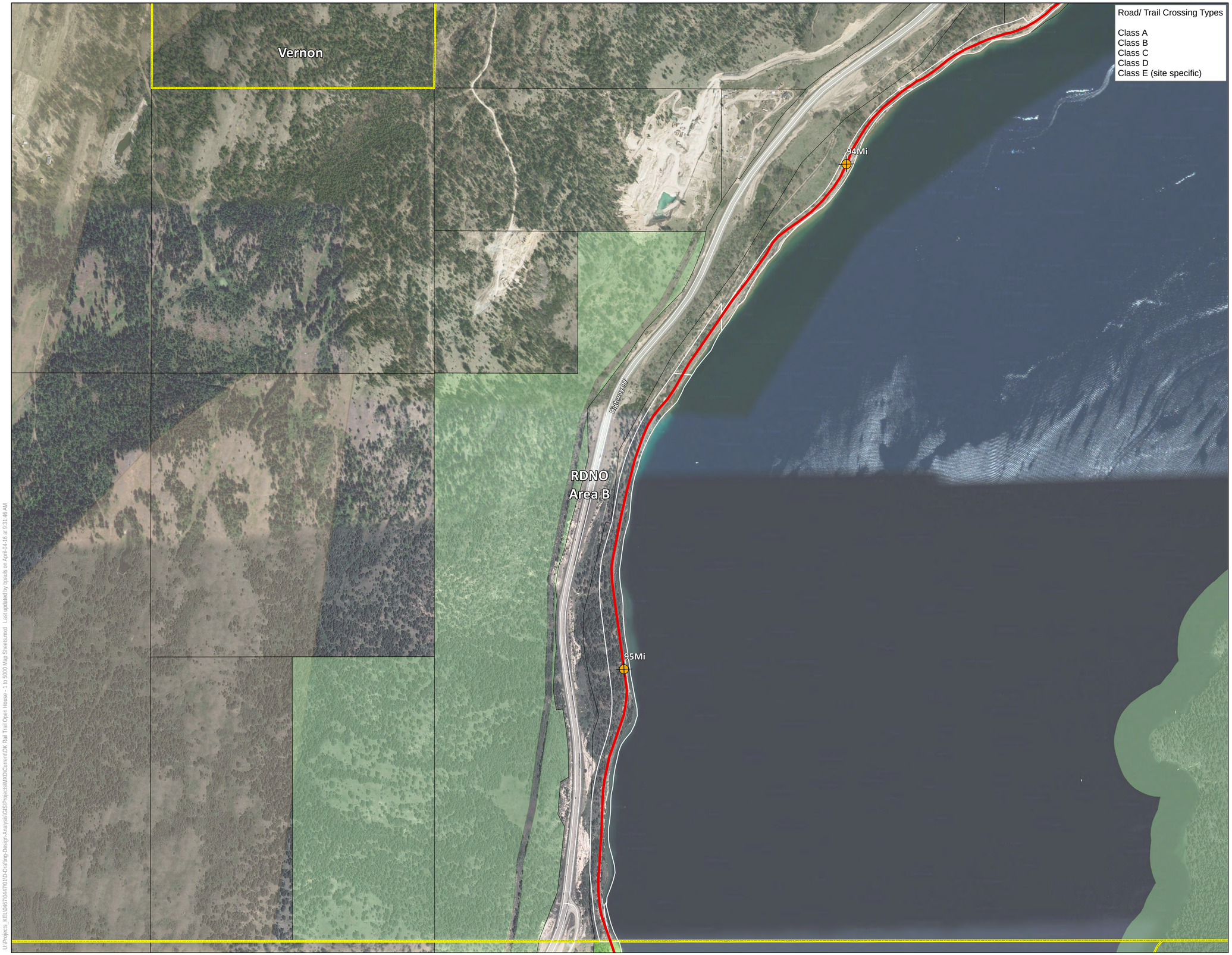

City of Kelowna

LAKE COUNTRY
Life. The Okanagan Way.

Okanagan Indian Band

OK Rail Trail Corridor

Legend

- Rail Trail Centerline
- Administrative Boundaries

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Coordinate System:
NAD 1983 UTM Zone 11N

Data Sources:
City of Kelowna
Regional District of Central Okanagan
Regional District of North Okanagan

Project #:	0467.0447.01
Author:	RT
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Status:	IFU
Revision:	B
Date:	2016 / 4 / 4

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City of Kelowna

Lake Country
Life. The Okanagan Way.

Okanagan Indian Band

OK Rail Trail Corridor

Legend

- Road / Trail Crossing
- Barricade
- Rail Trail Centerline
- Administrative Boundaries

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Coordinate System:
NAD 1983 UTM Zone 11N

Data Sources:
City of Kelowna
Regional District of Central Okanagan
Regional District of North Okanagan

Project #:	0467.0447.01
Author:	RT
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Revision:	B
Date:	2016 / 4 / 4

URBAN systems

Sheet 5

City of Kelowna
LAKE COUNTRY
Life. The Okanagan Way.
Okanagan Indian Band

OK Rail Trail Corridor

Legend

● Road / Trail Crossing
Bridge
Barricade
Rail Trail Centerline
Administrative Boundaries

100 50 0 100 200
m

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Coordinate System:
NAD 1983 UTM Zone 11N

Data Sources:
City of Kelowna
Regional District of Central Okanagan
Regional District of North Okanagan

Project #:	0467.0447.01
Author:	RT
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Status:	IFU
Revision:	B
Date:	2016 / 4 / 4

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OK Rail Trail Corridor

Legend

- Road / Trail Crossing
- Bridge
- Barricade
- Rail Trail Centerline
- Administrative Boundaries

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m

1:5,000 - if printed on 22x34 inch page

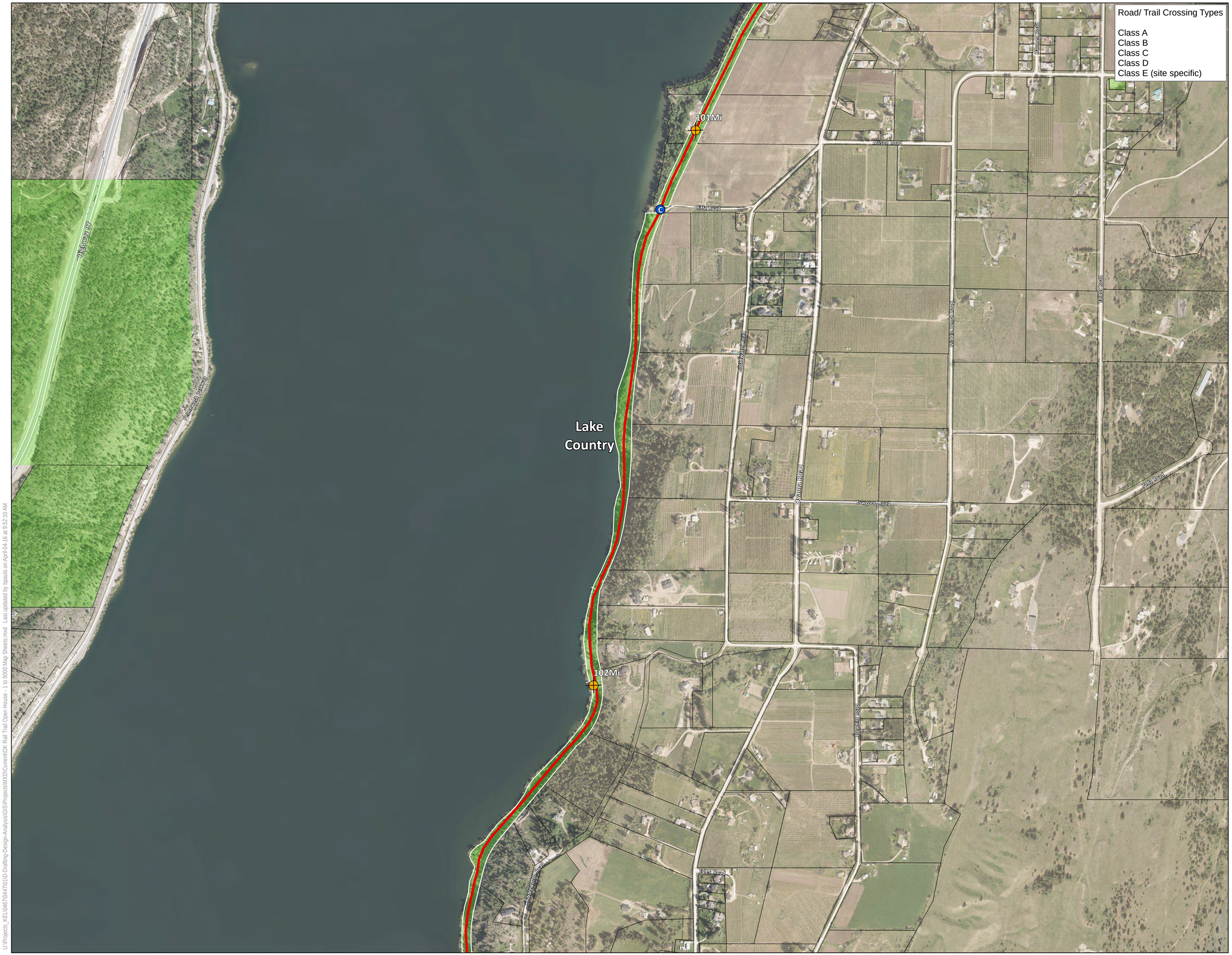
Coordinate System:
NAD 1983 UTM Zone 11N

Data Sources:
City of Kelowna
Regional District of Central Okanagan
Regional District of North Okanagan

Project #:	0467.0447.01
Author:	RT
Checked:	
Status:	IFU
Revision:	B
Date:	2016 / 4 / 4

URBAN systems

Sheet 7



City of Kelowna

LAKE COUNTRY
Life. The Okanagan Way.

Okanagan Indian Band

OK Rail Trail Corridor

Legend

- Road / Trail Crossing
- Rail Trail Centerline
- Administrative Boundaries

The accuracy & completeness of information shown on this drawing is not guaranteed. It will be the responsibility of the user of the information shown on this drawing to locate & establish the precise location of all existing information whether shown or not.

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Coordinate System:
NAD 1983 UTM Zone 11N

Data Sources:
City of Kelowna
Regional District of Central Okanagan
Regional District of North Okanagan

Project #:	0467.0447.01
Author:	RT
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Status:	IFU
Revision:	B
Date:	2016 / 4 / 4

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Sheet 8

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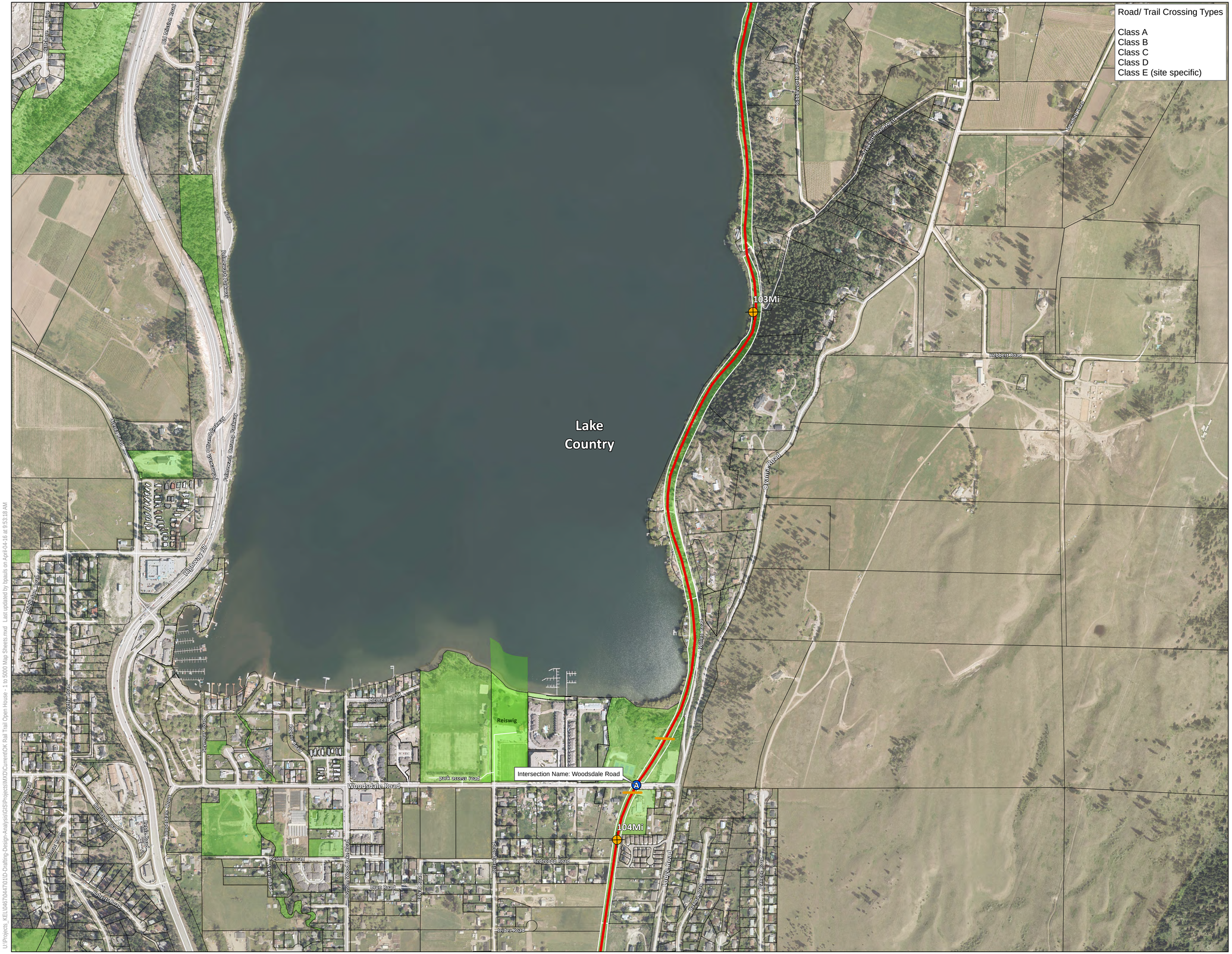

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City of Kelowna

LAKE COUNTRY
Life. The Okanagan Way.

Okanagan Indian Band

OK Rail Trail Corridor

Legend

- Road / Trail Crossing
- Barricade
- Rail Trail Centerline
- Administrative Boundaries

100 50 0 100 200
m

N

1:5,000 - if printed on 22x34 inch page

Coordinate System:
NAD 1983 UTM Zone 11N

Data Sources:
City of Kelowna
Regional District of Central Okanagan
Regional District of North Okanagan

Project #:	0467.0447.01
Author:	RT
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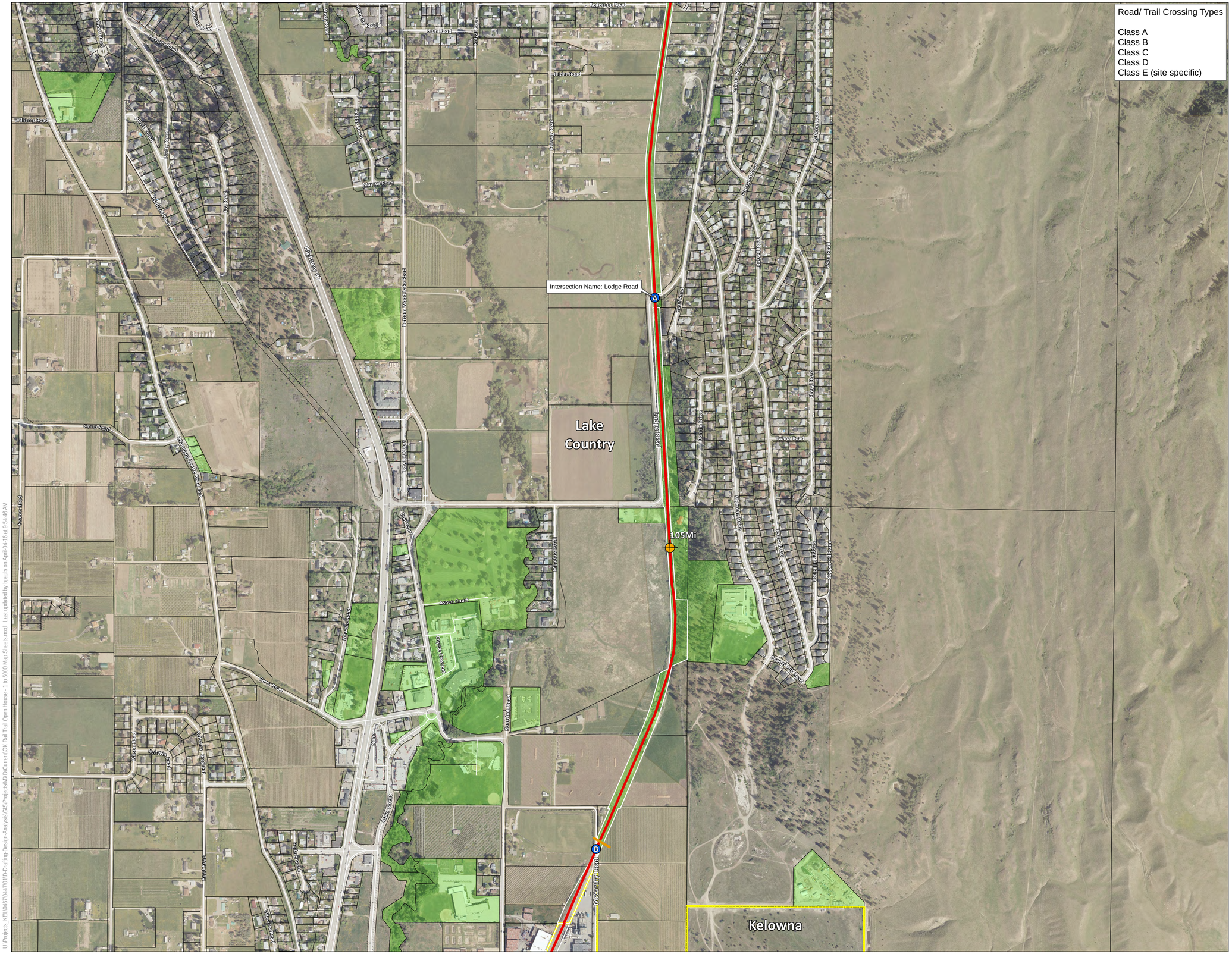
Status:	IFU
Revision:	B
Date:	2016 / 4 / 4

URBAN systems

Sheet 9



Road/ Trail Crossing Types

Class A
Class B
Class C
Class D
Class E (site specific)

OK Rail Trail Corridor

Legend

- ● Road / Trail Crossing
- Barricade
- Rail Trail Centerline
- Administrative Boundaries

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m

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Coordinate System:

NAD 1983 UTM Zone 11N

Data Sources:

City of Kelowna
Regional District of Central Okanagan
Regional District of North Okanagan

Project #: 0467.0447.01
Author: RT
Checked:
Status: IFU
Revision: B
Date: 2016 / 4 / 4

Sheet 10

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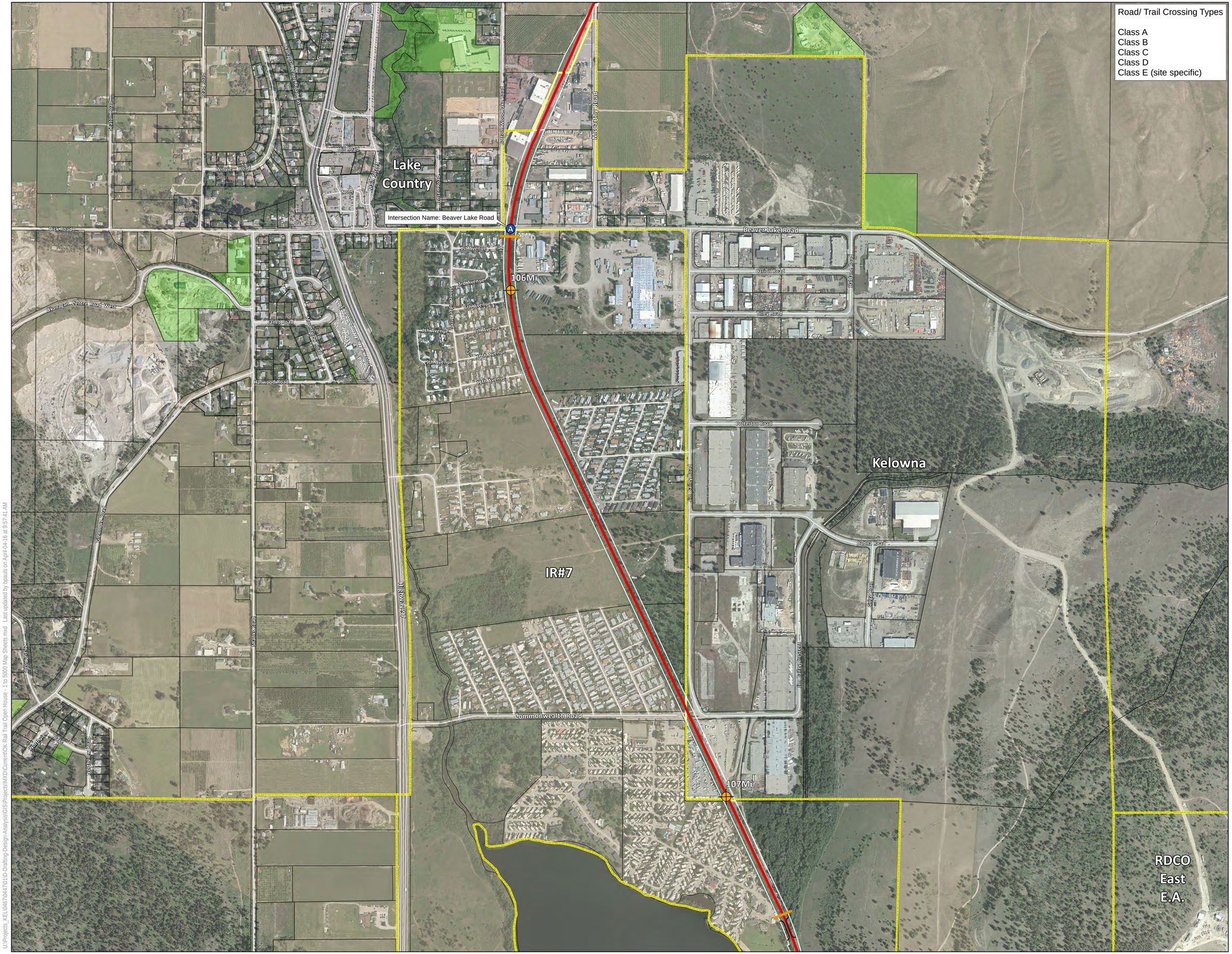

OK Rail Trail Corridor

Legend

- Road / Trail Crossing
- Bridge
- Barricade
- Rail Trail Centerline
- Administrative Boundaries

The accuracy & completeness of information shown on this drawing is not guaranteed. It will be the responsibility of the user of the information shown on this drawing to locate & establish the precise location of all existing information whether shown or not.

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m

1:5,000 - if printed on 22x34 inch page

Coordinate System:
NAD 1983 UTM Zone 11N

Data Sources:
City of Kelowna
Regional District of Central Okanagan
Regional District of North Okanagan

Project #:	0467.0447.01
Author:	RT
Checked:	
Status:	IFU
Revision:	B
Date:	2016 / 4 / 4

URBAN systems

Sheet 11

OK Rail Trail Corridor

Legend

- Bridge
- Barricade
- Rail Trail Centerline
- Administrative Boundaries

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100 50 0 100 200
m

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Coordinate System:
NAD 1983 UTM Zone 11N

Data Sources:
City of Kelowna
Regional District of Central Okanagan
Regional District of North Okanagan

Project #:	0467.0447.01
Author:	RT
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Status:	IFU
Revision:	B
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Sheet 12

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Road/ Trail Crossing Types

Class A
Class B
Class C
Class D
Class E (site specific)

City of Kelowna
Lake Country
Life. The Okanagan Way.
Okanagan Indian Band

OK Rail Trail Corridor

Legend

- ● Road / Trail Crossing
- ━ Barricade
- ━ Rail Trail Centerline
- ▭ Administrative Boundaries

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Coordinate System:
NAD 1983 UTM Zone 11N

Data Sources:
City of Kelowna
Regional District of Central Okanagan
Regional District of North Okanagan

Project #:	0467.0447.01
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URBAN systems

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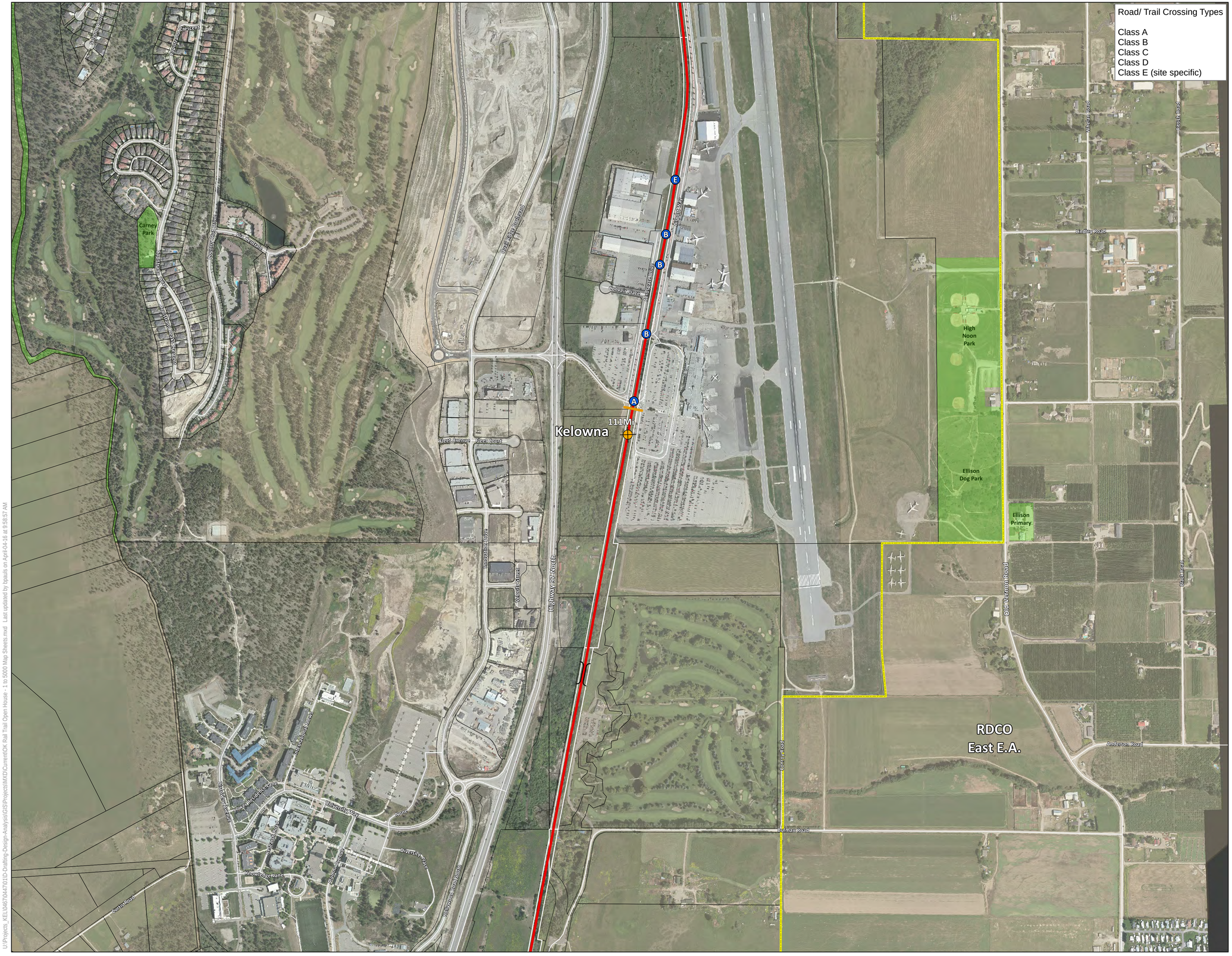

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City of Kelowna

LAKE COUNTRY
Life. The Okanagan Way.

Okanagan Indian Band

OK Rail Trail Corridor

Legend

- Road / Trail Crossing
- Bridge
- Barricade
- Rail Trail Centerline
- Administrative Boundaries

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Coordinate System:
NAD 1983 UTM Zone 11N

Data Sources:
City of Kelowna
Regional District of Central Okanagan
Regional District of North Okanagan

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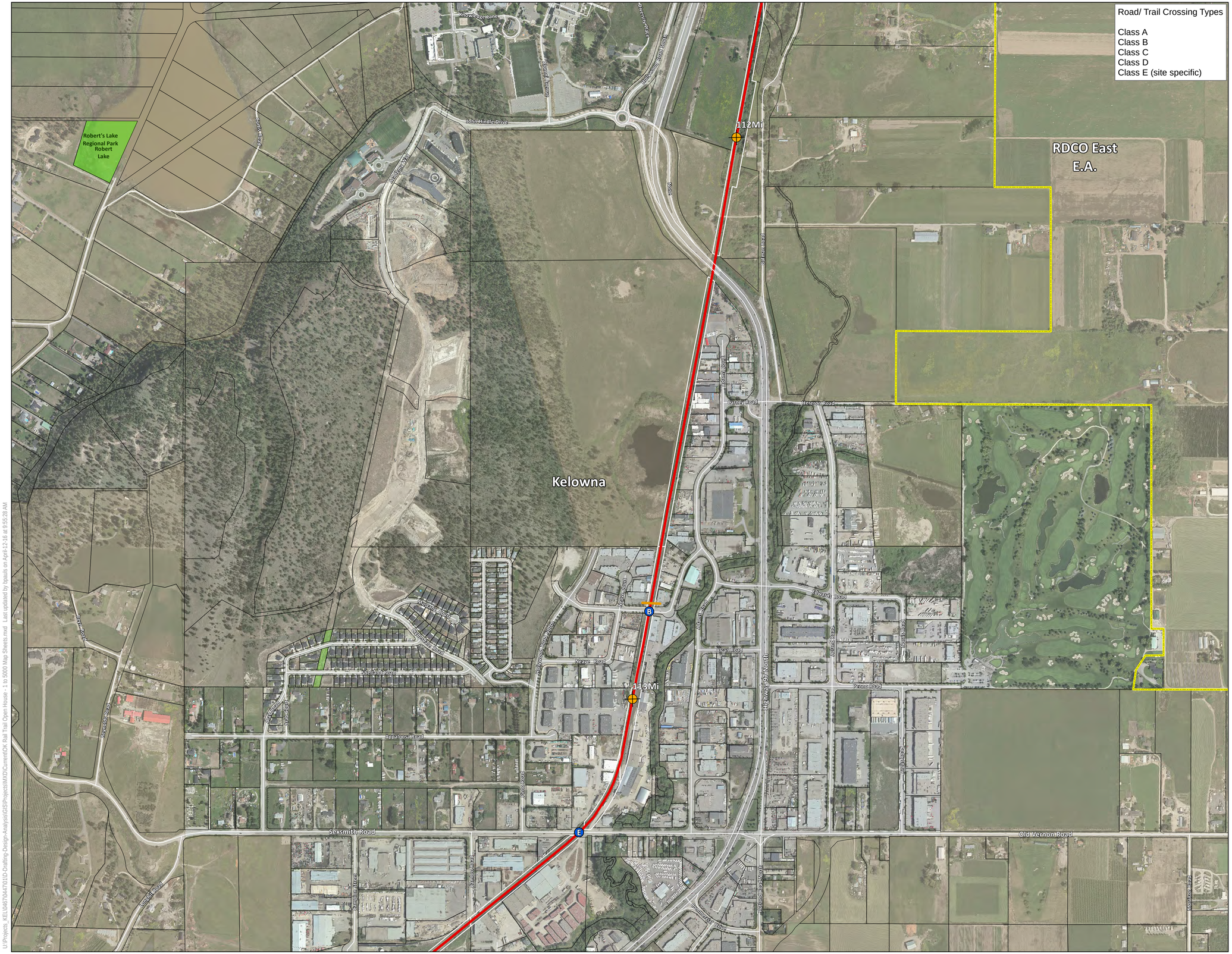
Status:	IFU
Revision:	B
Date:	2016 / 4 / 4

URBAN systems

Sheet 14



City of Kelowna

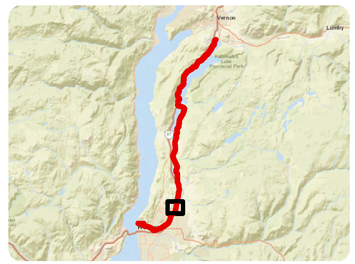
LAKE COUNTRY
Life. The Okanagan Way.

Okanagan Indian Band

OK Rail Trail Corridor

Legend

- Road / Trail Crossing
- Barricade
- Rail Trail Centerline
- Administrative Boundaries



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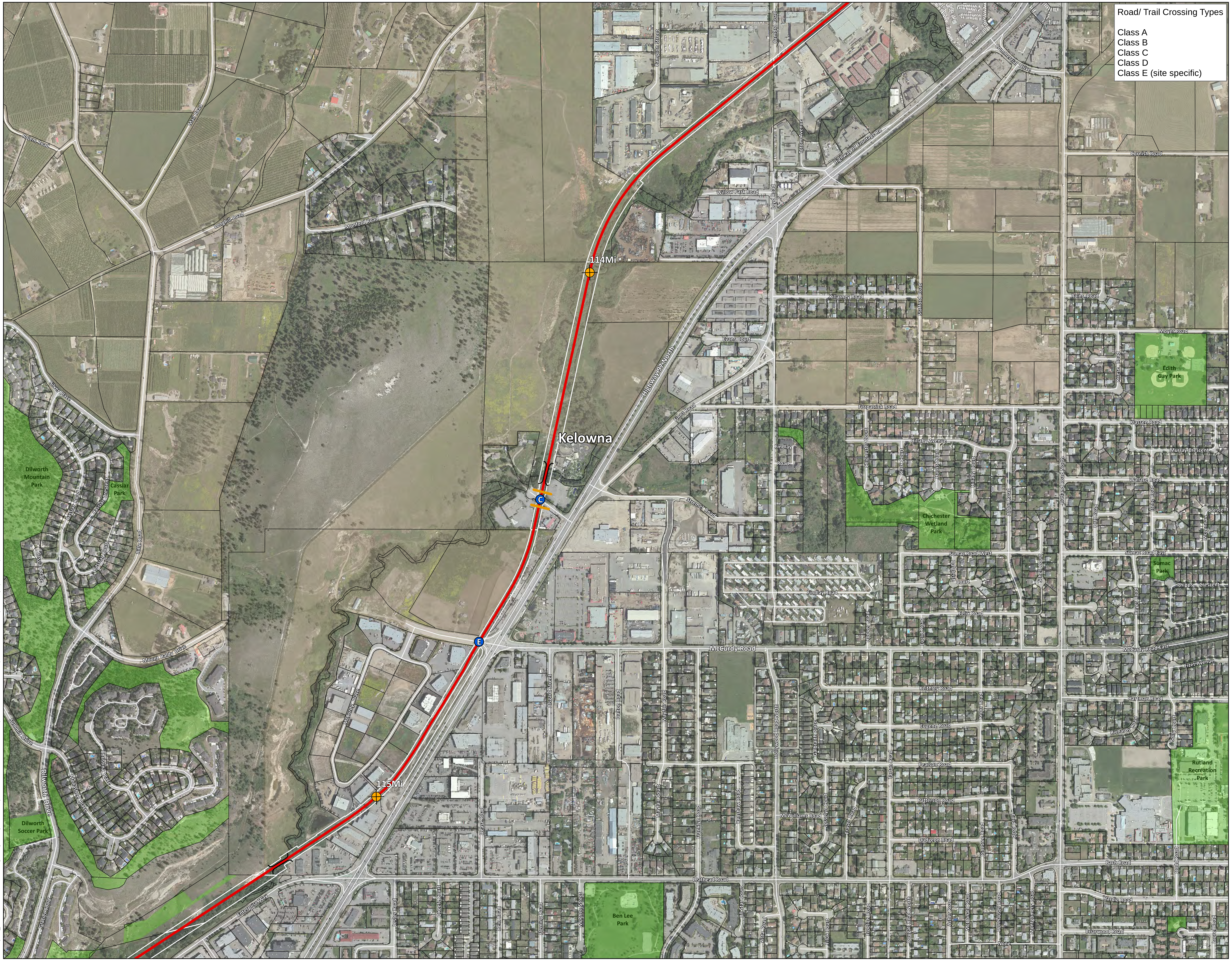
Coordinate System:
NAD 1983 UTM Zone 11N

Data Sources:
City of Kelowna
Regional District of Central Okanagan
Regional District of North Okanagan

Project #:	0467.0447.01
Author:	RT
Checked:	
Status:	IFU
Revision:	B
Date:	2016 / 4 / 12

URBAN systems

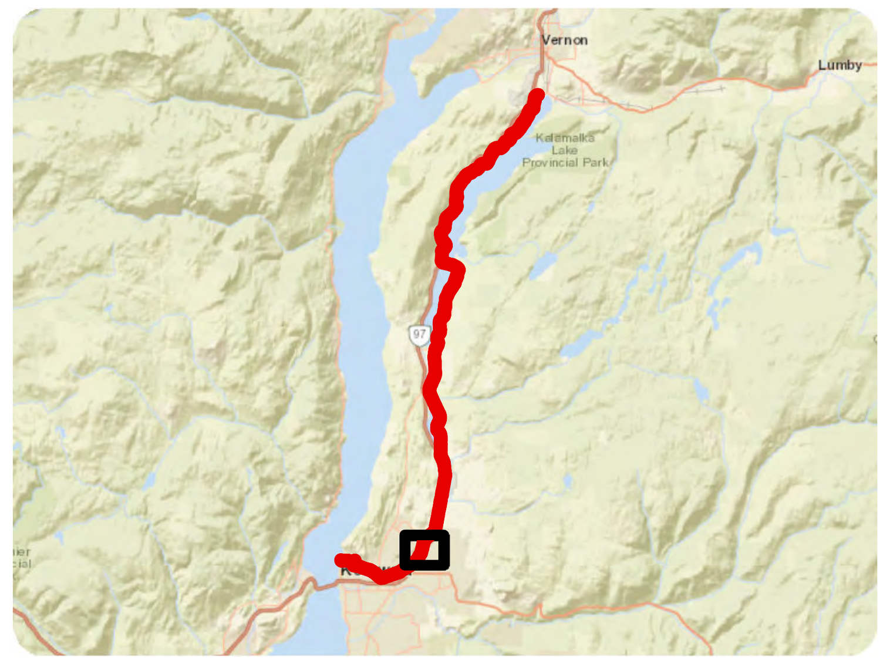
Sheet 15



OK Rail Trail Corridor

Legend

- Road / Trail Crossing
- Bridge
- Barricade
- Rail Trail Centerline
- Administrative Boundaries



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Coordinate System:
NAD 1983 UTM Zone 11N

Data Sources:
City of Kelowna
Regional District of Central Okanagan
Regional District of North Okanagan

Project #:	0467.0447.01
Author:	RT
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Status:	IFU
Revision:	B
Date:	2016 / 4 / 12

URBAN systems

Sheet 16

Road/ Trail Crossing Types

Class A
Class B
Class C
Class D
Class E (site specific)

Kelowna

116Mi

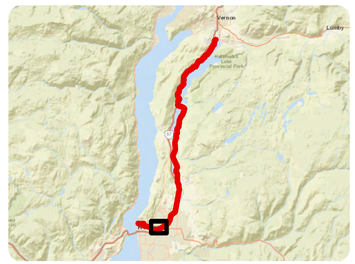
117Mi

Intersection Name: Dilworth Drive

OK Rail Trail Corridor

Legend

- Road / Trail Crossing
- Bridge
- Barricade
- Rail Trail Centerline
- Existing Pathway
- Administrative Boundaries



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Regional District of Central Okanagan
Regional District of North Okanagan

Project #:	0467.0447.01
Author:	RT
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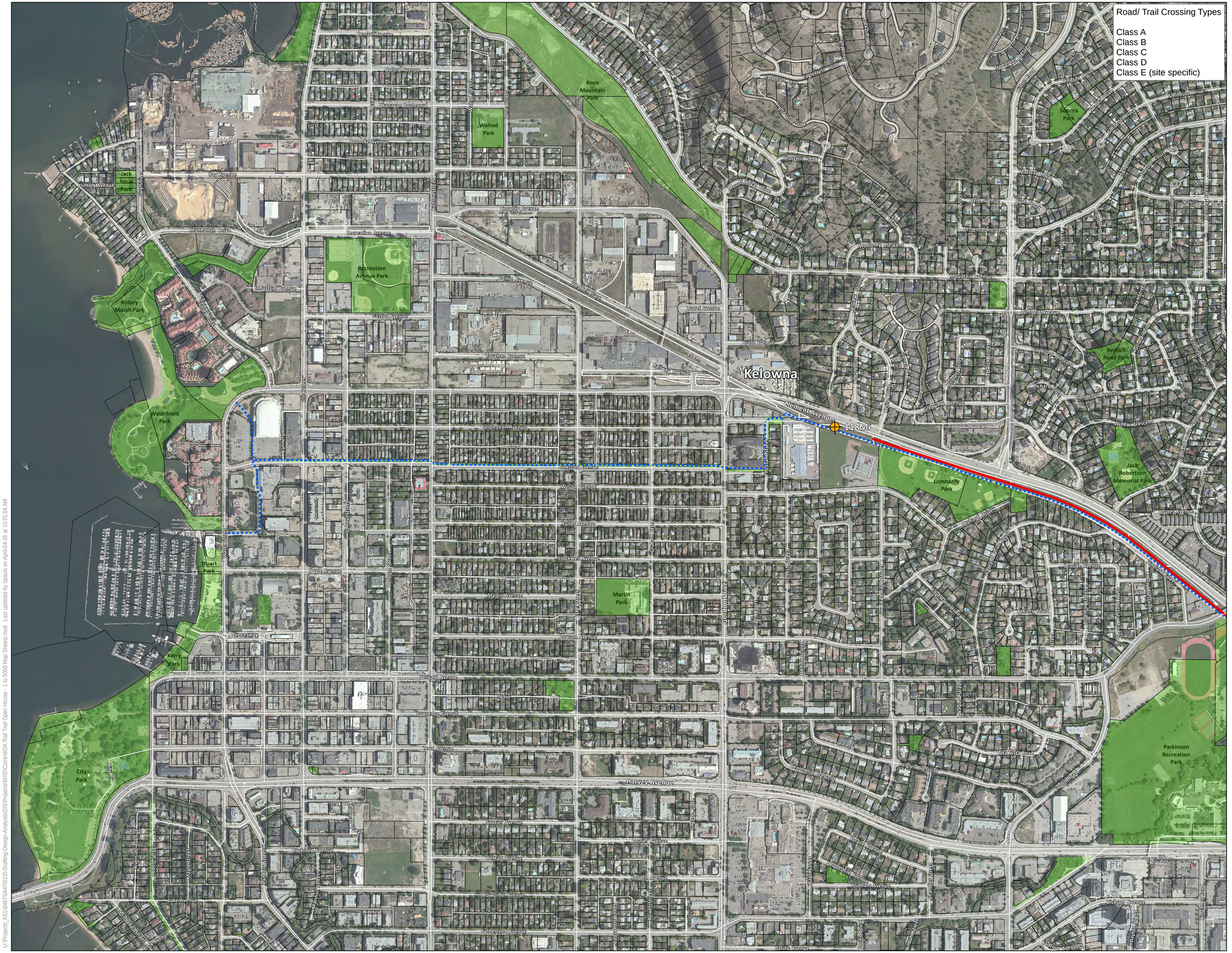
Date:	2016 / 4 / 4

URBAN systems

Sheet 17



OK Rail Trail Corridor

Legend

- Rail Trail Centerline
- Existing Pathway
- Administrative Boundaries

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1:5,000 - if printed on 22x34 inch page

Coordinate System:
NAD 1983 UTM Zone 11N

Data Sources:
City of Kelowna
Regional District of Central Okanagan
Regional District of North Okanagan

Project #:	0467.0447.01
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Revision:	B
Date:	2016 / 4 / 4

URBAN systems

Sheet 18

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Appendix B

Typical Section

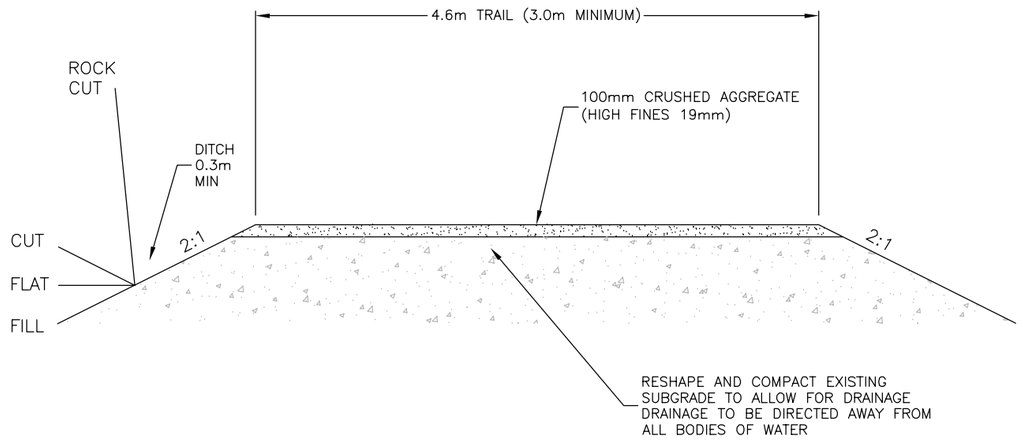
Okanagan Indian Band

LAKE COUNTRY
Life. The Okanagan Way.

REGIONAL DISTRICT NORTH OKANAGAN

City of Kelowna

URBAN systems



1 / D01 OKANAGAN RAIL TRAIL – TYPICAL SECTION

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INTER-JURISDICTIONAL DEVELOPMENT TEAM
OKANAGAN RAIL TRAIL DEVELOPMENT PLAN - PHASE 1

Scale	Date	Figure
AS SHOWN	16-02-03	
0467.0447.01		Title

TYPICAL SECTION

Appendix C

Road Crossings (Typical)

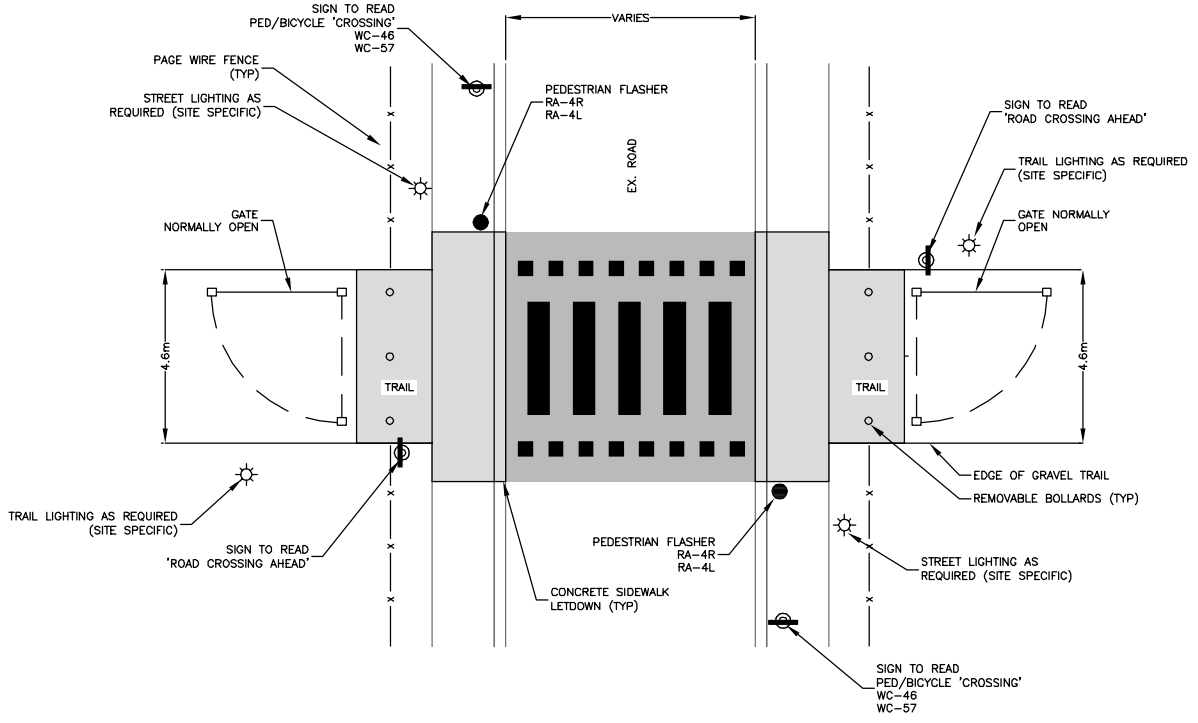
Okanagan Indian Band

LAKE COUNTRY
Life. The Okanagan Way.

REGIONAL DISTRICT NORTH OKANAGAN

City of Kelowna

URBAN systems



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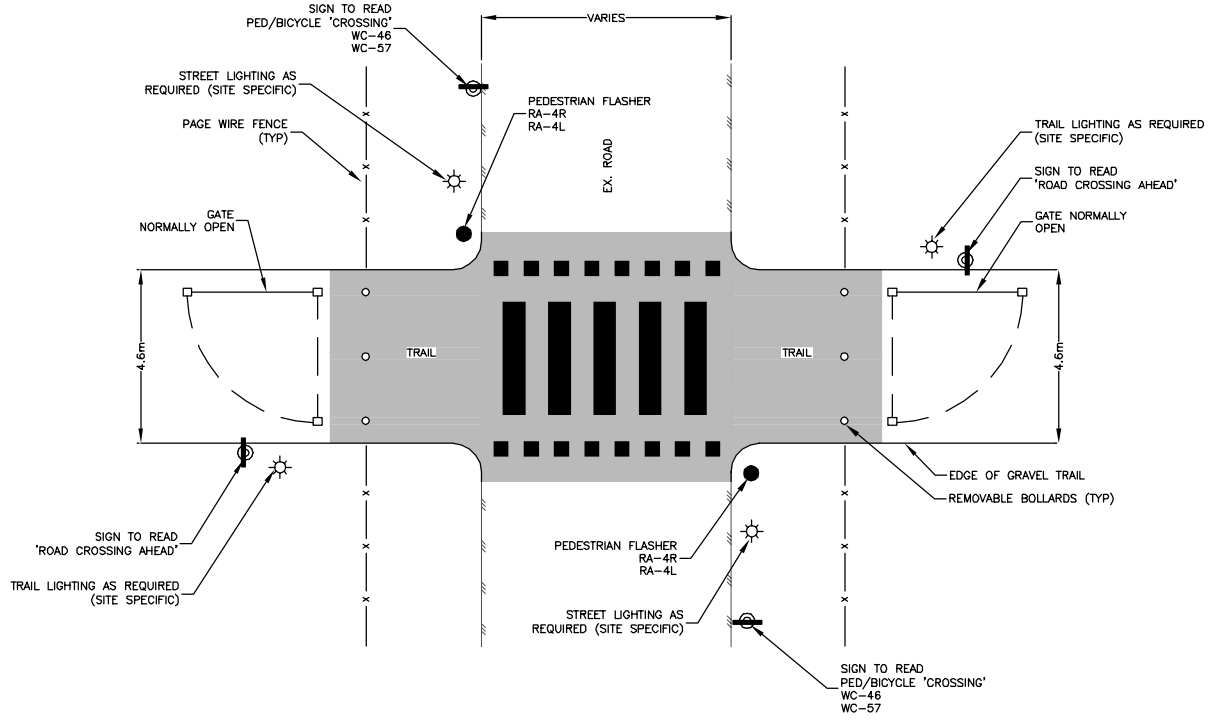

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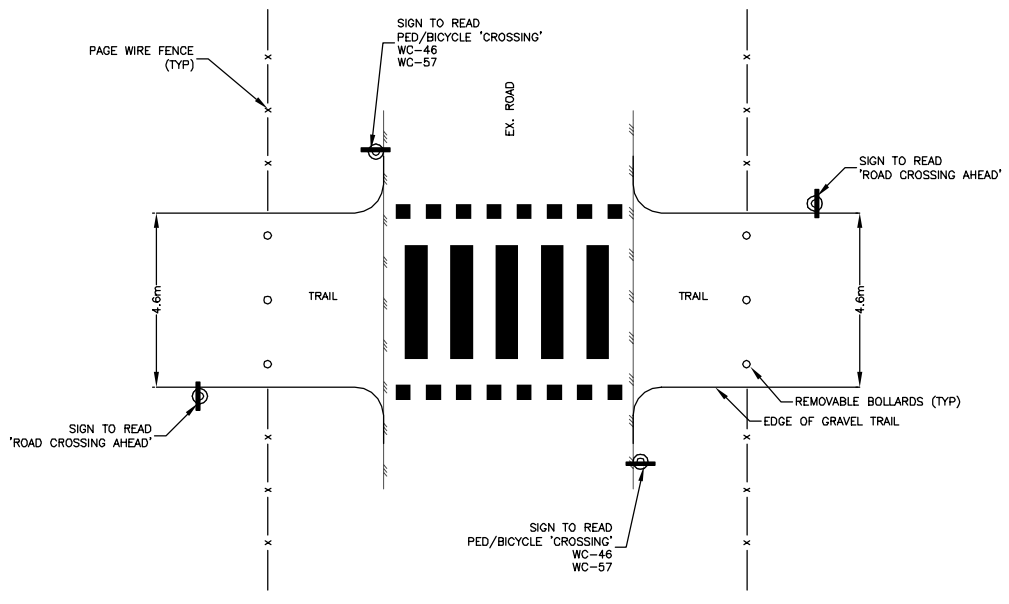

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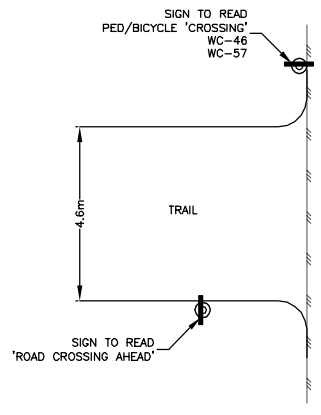

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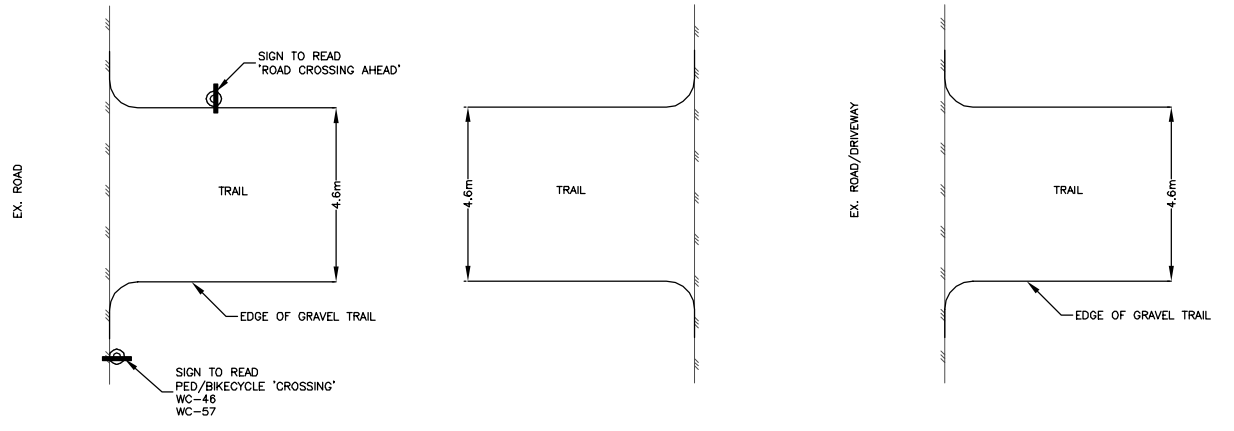

5 D03 CLASS D – CROSSING
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OKANAGAN RAIL TRAIL DEVELOPMENT PLAN - PHASE 1

Scale	Date	Figure
AS SHOWN	16-02-03	
0467.0447.01		Title

TYPICAL ROAD CROSSINGS

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Appendix D

Environmental Sensitivity Analysis Maps

Okanagan Indian Band

LAKE COUNTRY
Life. The Okanagan Way.

REGIONAL DISTRICT NORTH OKANAGAN

City of Kelowna

URBAN systems

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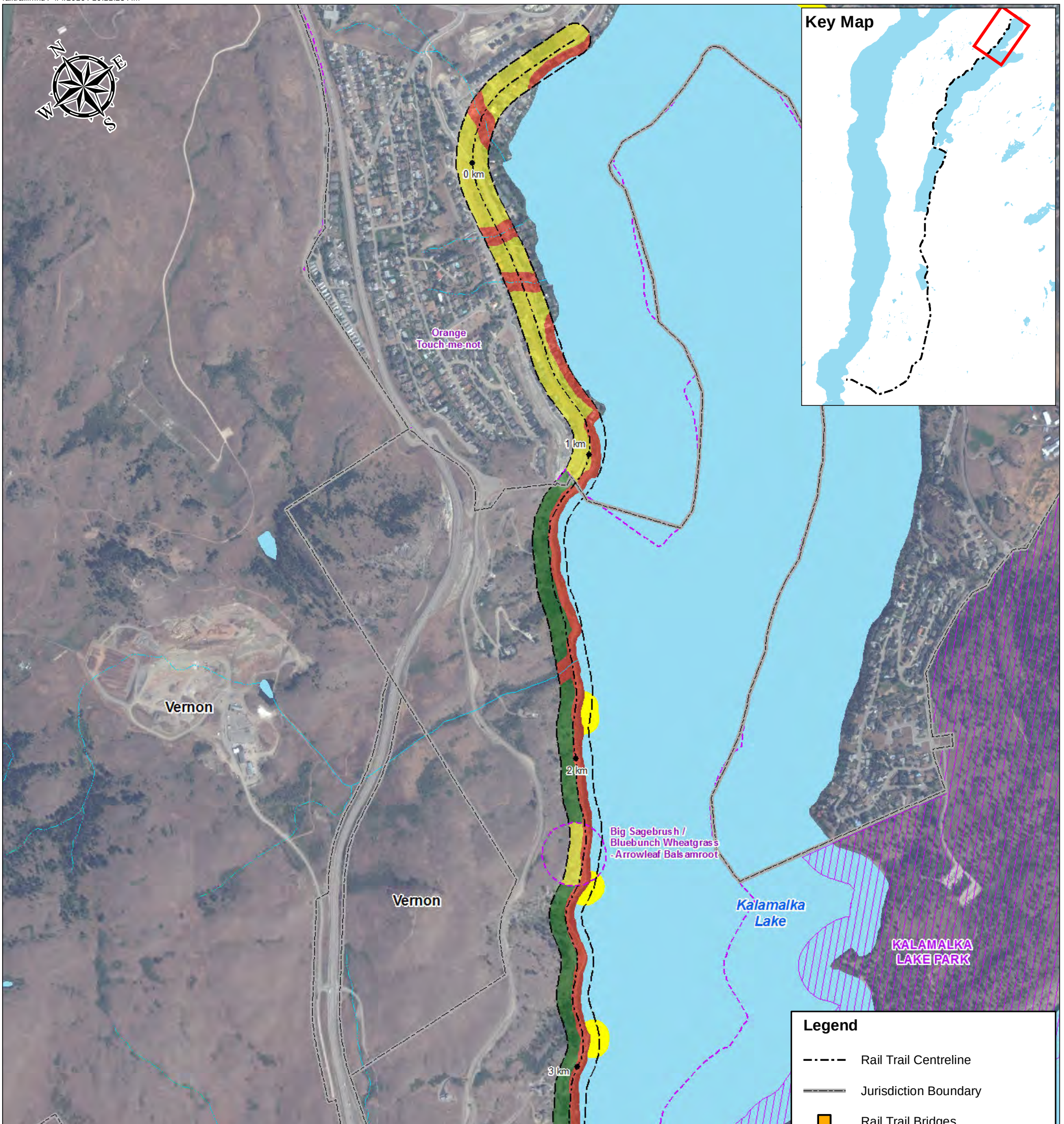

Associated Environmental

PROJECT NO.: 2016-8026.000.000
DATE: April 2016
DRAWN BY: BdJ

FIGURE 1: TRAIL PLAN

City of Kelowna
Rail Trail

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Vernon

Vernon

Boltres Creek

5 km

6 km

7 km

8 km

9 km

Kalamalka Lake

KEKULI BAY PARK

RDNO Area B

Vernon

Key Map

Legend

- Rail Trail Centreline
- Jurisdiction Boundary
- Rail Trail Bridges
- 50 m Setback
- Species and Ecosystems at Risk Occurrences
- Parks and Ecological Reserves
- Foreshore Protocol Black Zone
- Foreshore Protocol Yellow Zone
- Foreshore Protocol Red Zone

Sensitivity Rating

- High
- Moderate
- Low

Meters
0 100 200 300 400 500

bing

Associated Environmental

PROJECT NO.: 2016-8026.000.000
DATE: April 2016
DRAWN BY: BdJ

FIGURE 2: TRAIL PLAN

City of Kelowna
Rail Trail

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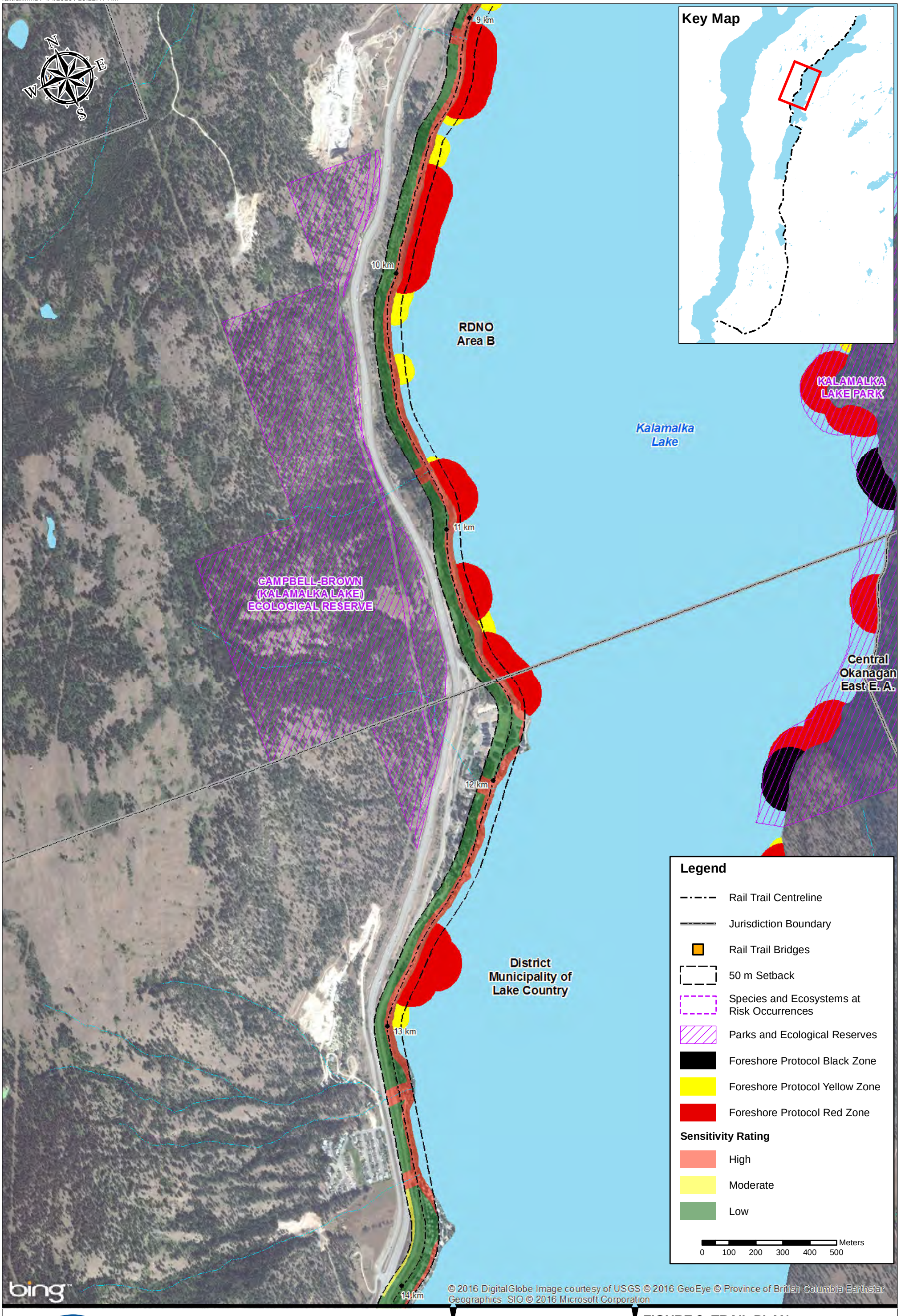


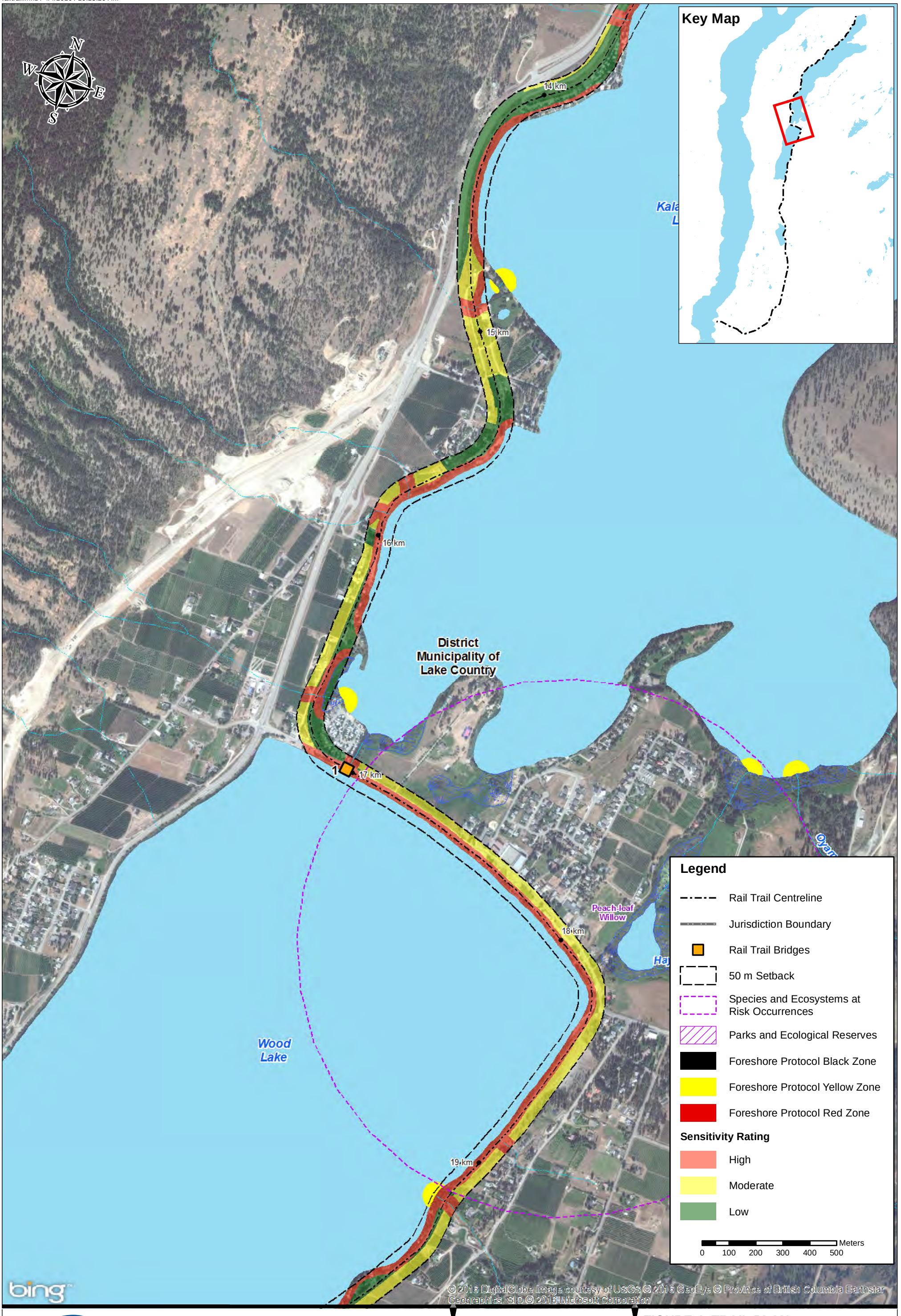
Associated Environmental

PROJECT NO.: 2016-8026.000.000
DATE: April 2016
DRAWN BY: BdJ

FIGURE 3: TRAIL PLAN

City of Kelowna
Rail Trail

railtrail.mxd / 4/4/2016 / 10:13:26 AM



Associated Environmental

PROJECT NO.: 2016-8026.000.000
DATE: April 2016
DRAWN BY: BdJ

FIGURE 4: TRAIL PLAN

City of Kelowna
Rail Trail

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N
E
S
W

Key Map

20 km
21 km
22 km
23 km
24 km

District Municipality of Lake Country

Wood Lake

Ribbleworth Creek

Legend

- Rail Trail Centreline
- Jurisdiction Boundary
- Rail Trail Bridges
- 50 m Setback
- Species and Ecosystems at Risk Occurrences
- Parks and Ecological Reserves
- Foreshore Protocol Black Zone
- Foreshore Protocol Yellow Zone
- Foreshore Protocol Red Zone

Sensitivity Rating

- High
- Moderate
- Low

Meters
0 100 200 300 400 500

bing

Associated Environmental

PROJECT NO.: 2016-8026.000.000
DATE: April 2016
DRAWN BY: BdJ

FIGURE 5: TRAIL PLAN

City of Kelowna
Rail Trail

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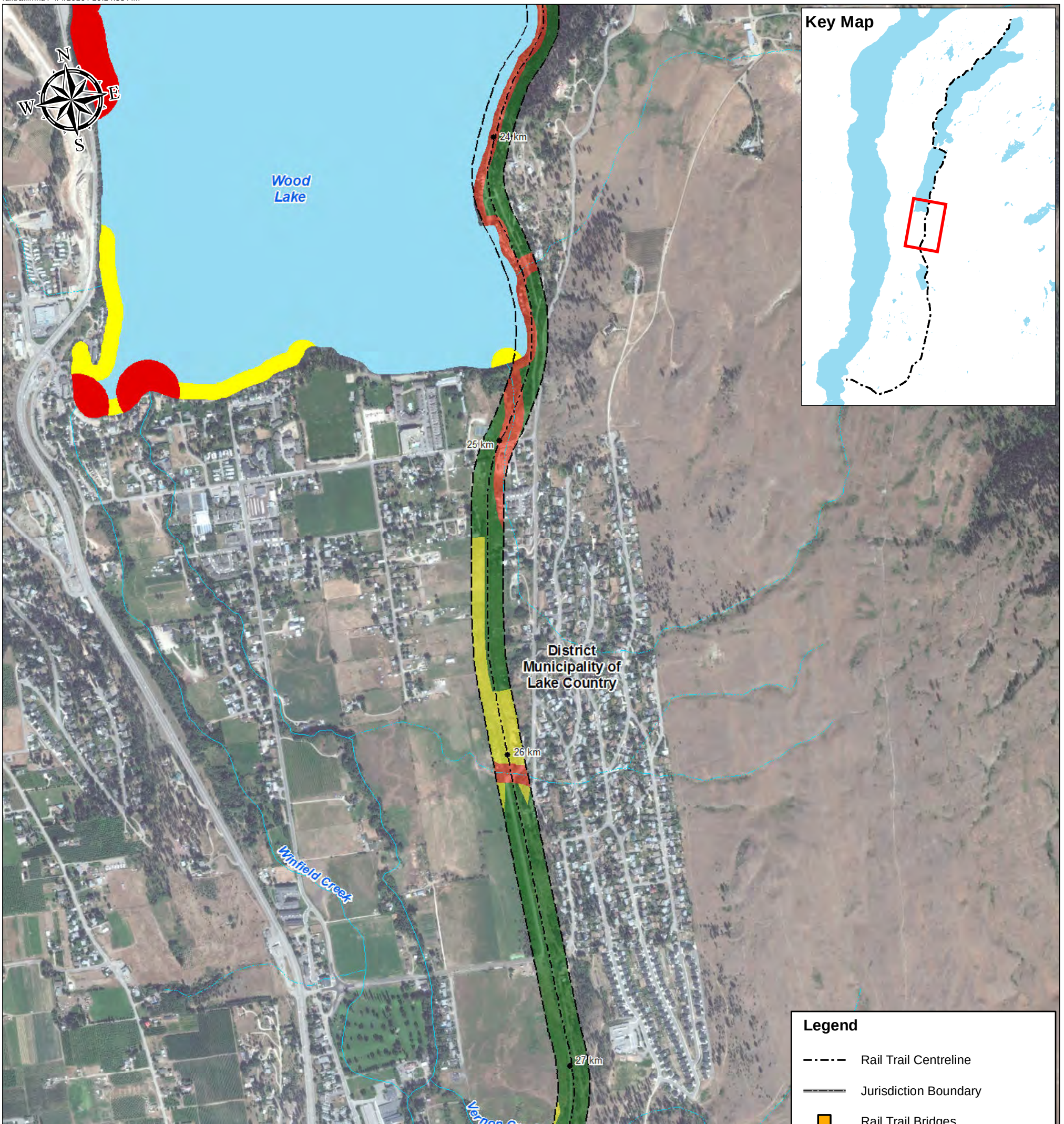

Associated Environmental

PROJECT NO.: 2016-8026.000.000
DATE: April 2016
DRAWN BY: BdJ

FIGURE 6: TRAIL PLAN

City of Kelowna
Rail Trail

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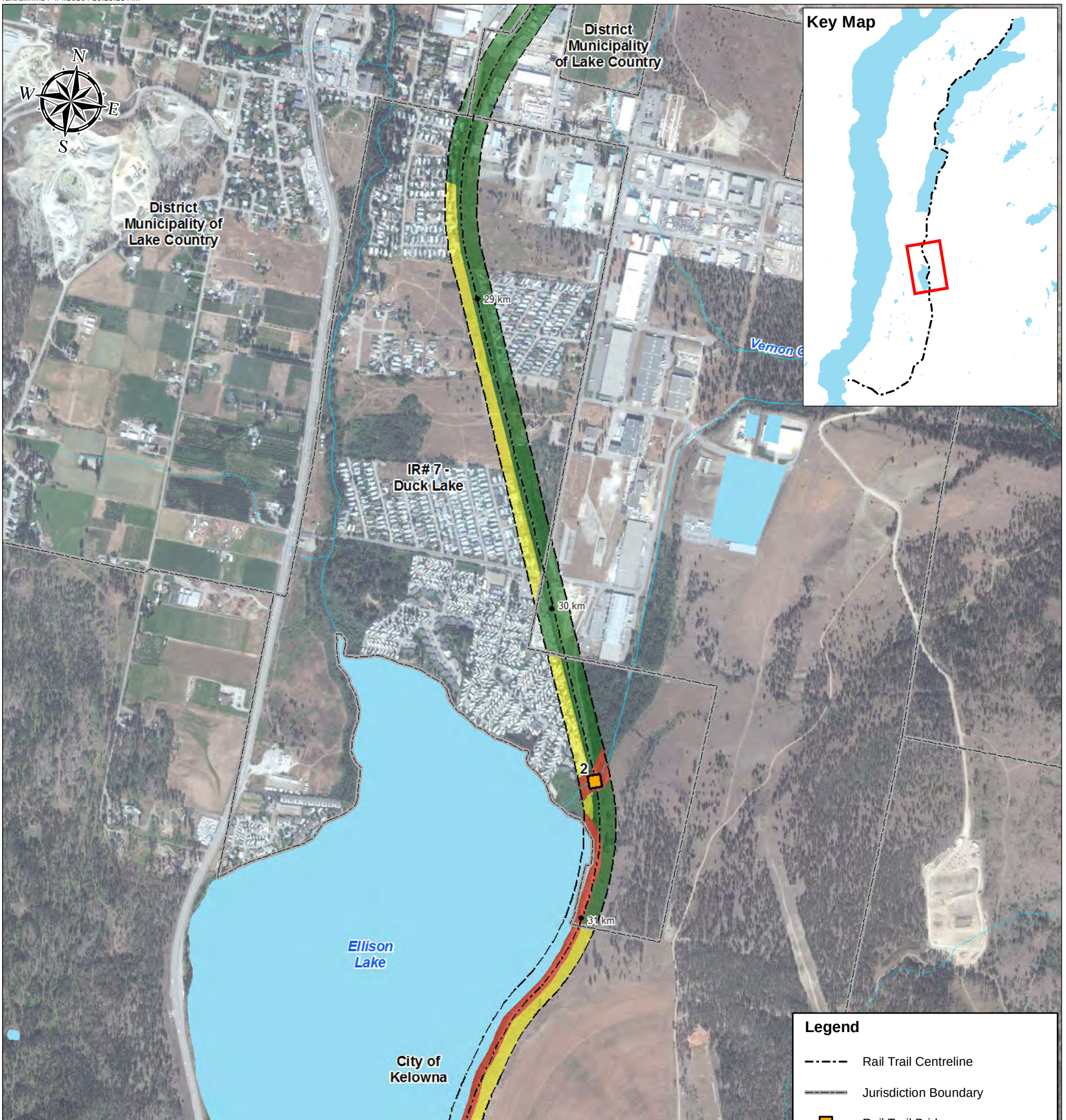

Associated Environmental

PROJECT NO.: 2016-8026.000.000
DATE: April 2016
DRAWN BY: BdJ

FIGURE 7: TRAIL PLAN

City of Kelowna
Rail Trail

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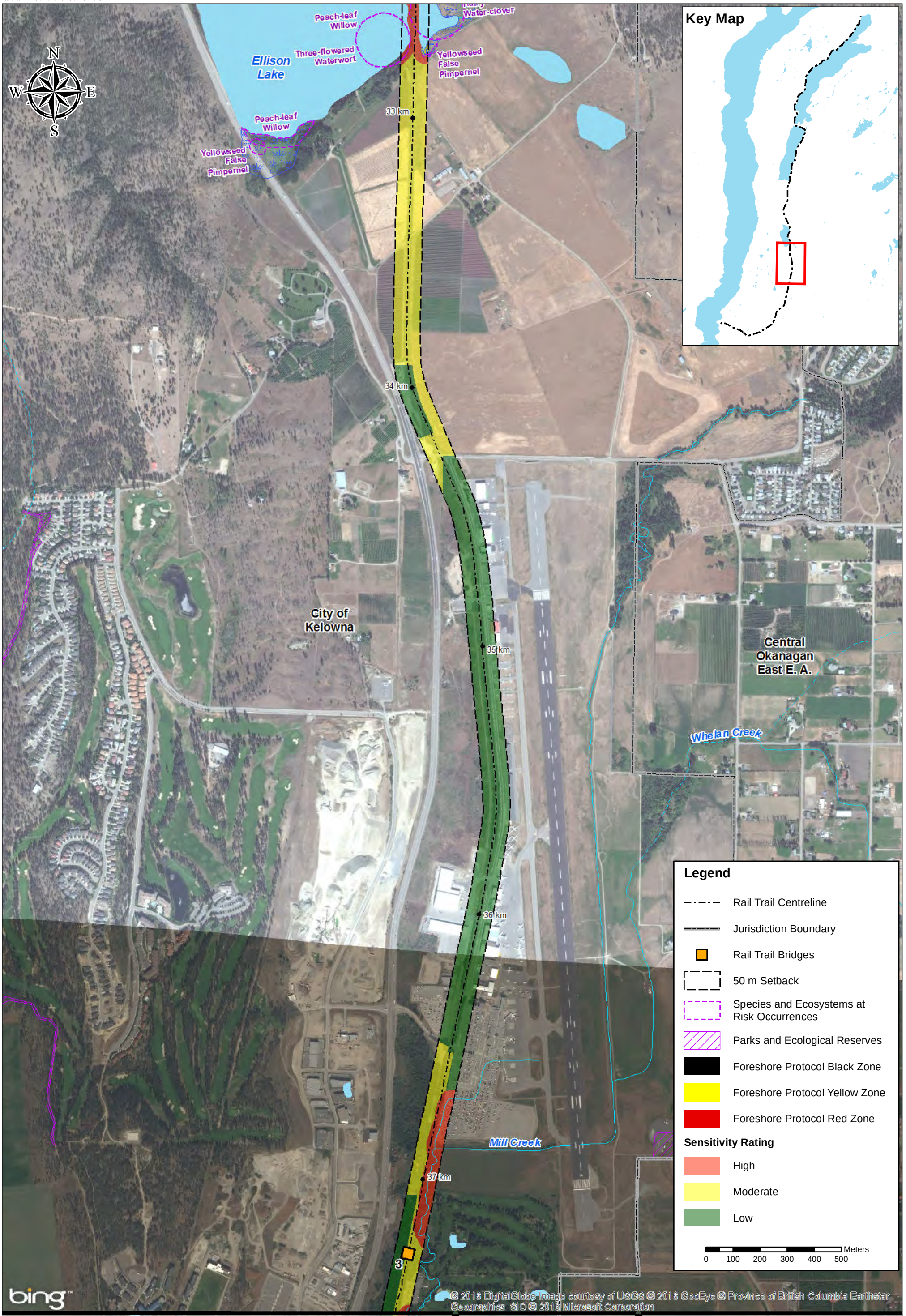

Associated Environmental

PROJECT NO.: 2016-8026.000.000
DATE: April 2016
DRAWN BY: BdJ

FIGURE 8: TRAIL PLAN

City of Kelowna
Rail Trail

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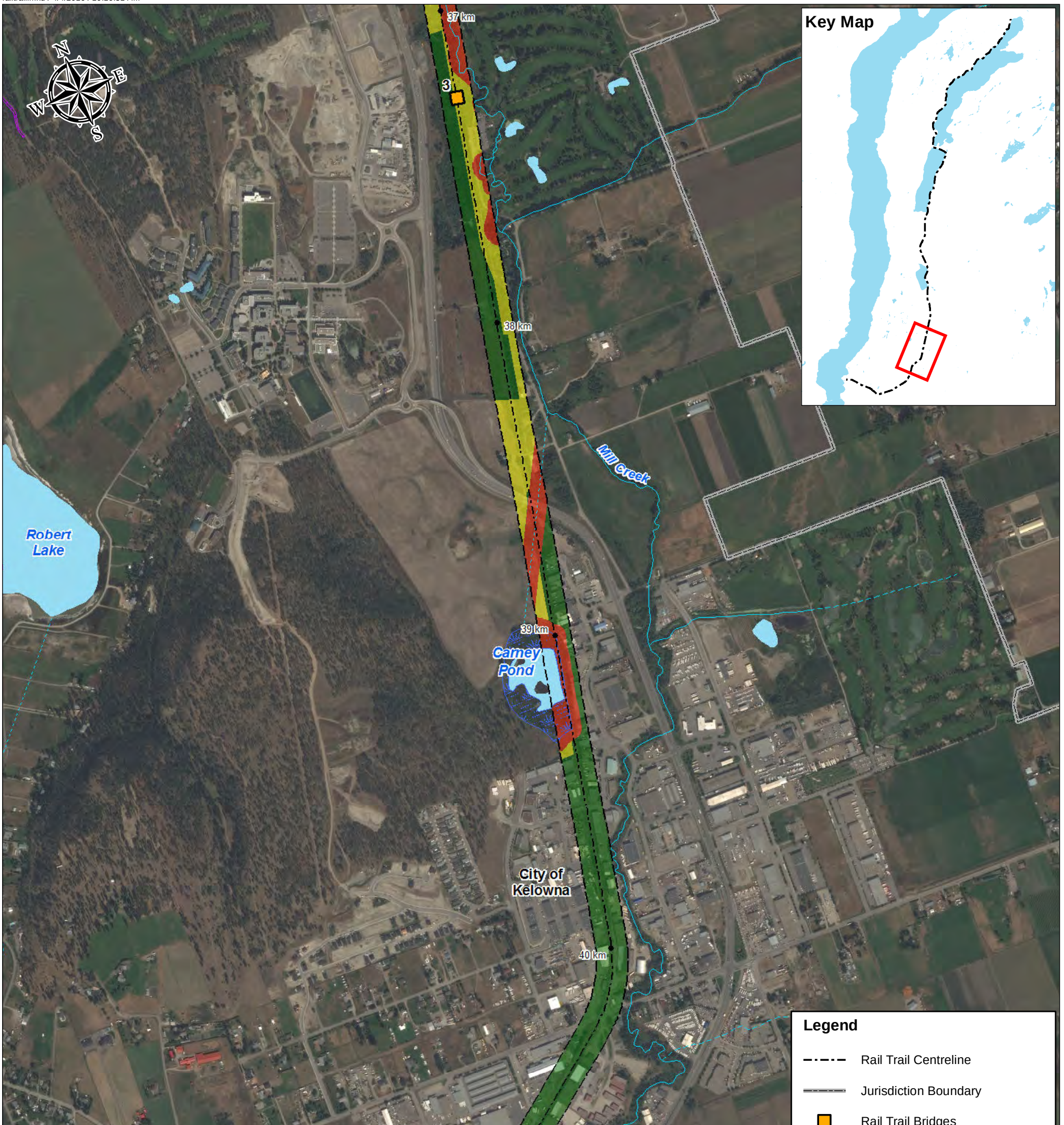

Associated Environmental

PROJECT NO.: 2016-8026.000.000
DATE: April 2016
DRAWN BY: BdJ

FIGURE 9: TRAIL PLAN

City of Kelowna
Rail Trail

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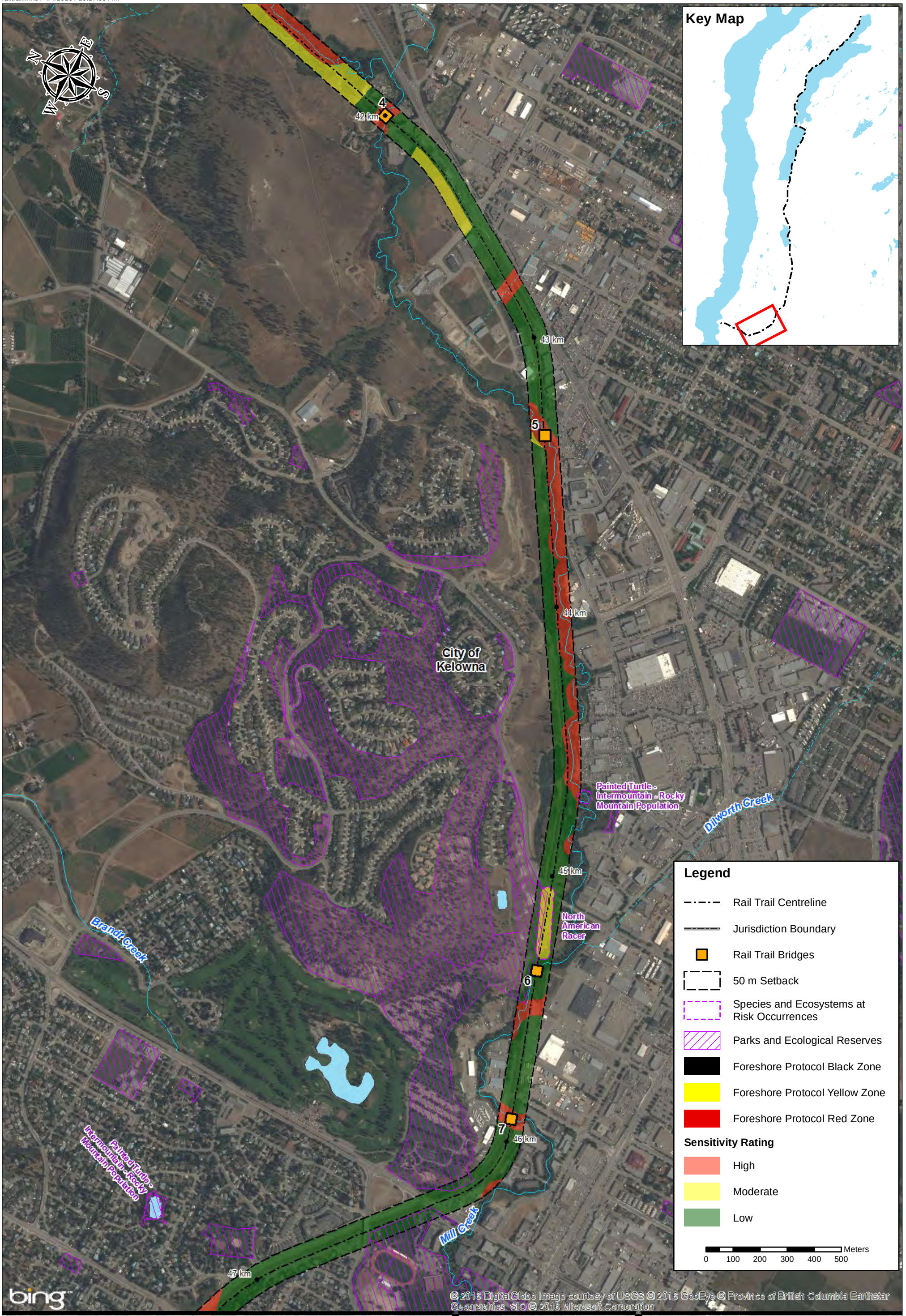

Associated Environmental

PROJECT NO.: 2016-8026.000.000
DATE: April 2016
DRAWN BY: BdJ

FIGURE 10: TRAIL PLAN

City of Kelowna
Rail Trail

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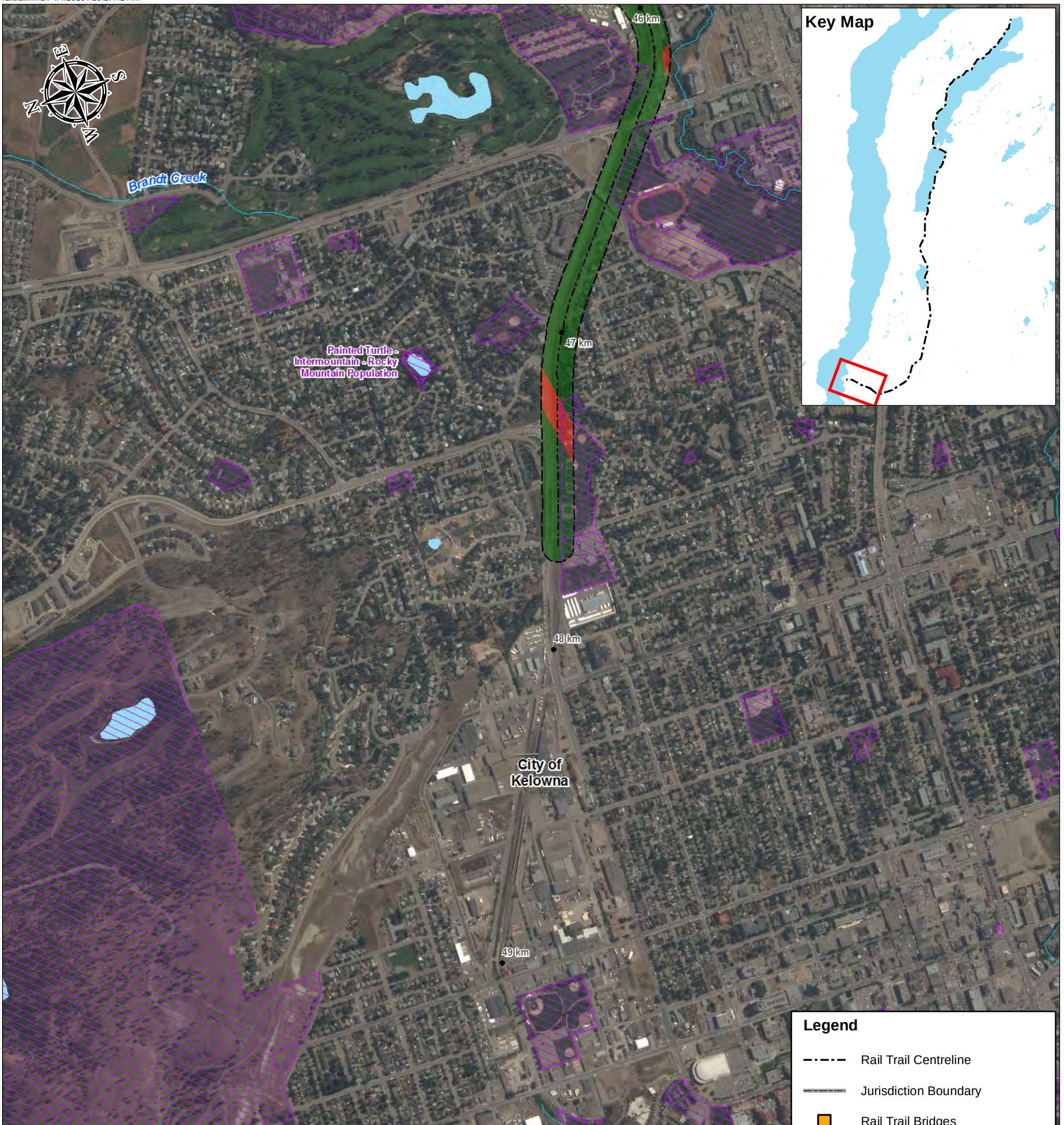


Associated Environmental

PROJECT NO.: 2016-8026.000.000
DATE: April 2016
DRAWN BY: BdJ

FIGURE 11: TRAIL PLAN

City of Kelowna
Rail Trail

Appendix E

Typical Construction Sections

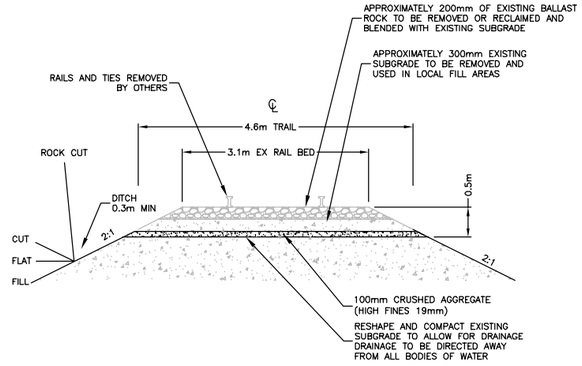
Okanagan Indian Band

LAKE COUNTRY
Life. The Okanagan Way.

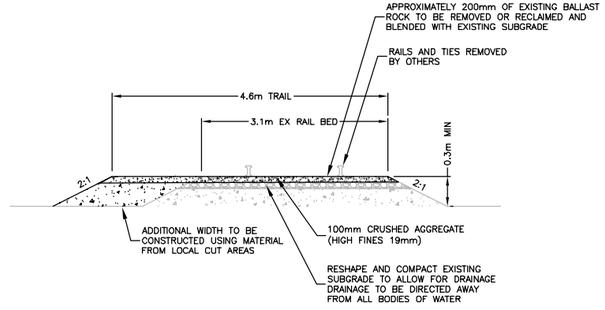
REGIONAL DISTRICT NORTH OKANAGAN

City of Kelowna

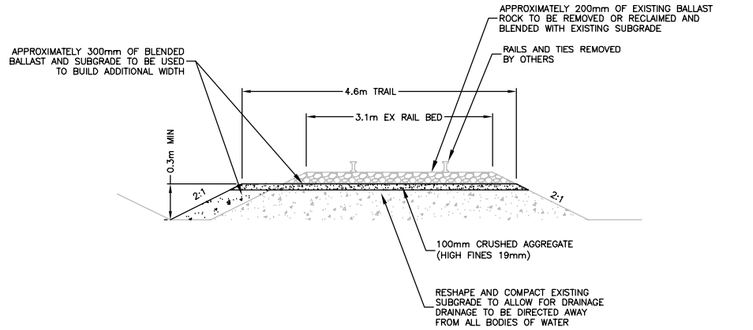
URBAN systems



1 D02 OKANAGAN RAIL TRAIL – CUT SECTION
1:50



2 D02 OKANAGAN RAIL TRAIL – FILL SECTION
1:50



3 D02 OKANAGAN RAIL TRAIL – LOCAL CUT AND FILL SECTION
1:50

ISSUED FOR
INFORMATION ONLY
APRIL 04, 2016
urbansystems.ca

URBAN systems
urbansystems.ca

Client/Project
INTER-JURISDICTIONAL DEVELOPMENT TEAM
OKANAGAN RAIL TRAIL DEVELOPMENT PLAN - PHASE 1

Scale	Date	Figure
AS SHOWN	16-02-03	
0467.0447.01		Title

TYPICAL CONSTRUCTION SECTIONS

Appendix F

Katim Okanagan Rail Trail Barricade Plan

Okanagan Indian Band

LAKE COUNTRY
Life. The Okanagan Way.

REGIONAL DISTRICT NORTH OKANAGAN

City of Kelowna

URBAN systems

11166 Pretty Rd., Lake Country, B.C. V4V 1H6
Phone 250-801-8891 Facsimile 250-766-1078
www.katim.ca

Okanagan Rail Trail
Barricade Plan

The purpose of assembling a barricade plan at this time is to assist the Rail Trail Ownership Team in preparing for the management of the Rail Trail now, through, removals, construction and after completion into maintenance. This Barricade Plan has been prepared for the review of the Ownership Team as an example of how the Okanagan Rail Trail Initiative (ORTI) can assist in the development of the Rail Trail. ORTI is prepared to meet with the Ownership Team and discuss both the plan and next steps.

An immediate liability has been assumed upon acquisition of the CN Rail Corridor. Knowing that CN is prepared to begin removing the railway infrastructure soon after the purchase agreement is completed; it is an urgency to teach the public how to utilize the corridor in a safe manner. This begins with restricting access with barricades and signage, to any form of motorized use within the corridor.

Swift action in implementing these barricades will aid in the development of positive relationships with adjacent landowners. If motorized use occurs it quickly leads to noise, dust, possible collisions with other users, access to private properties that never existed before and "joy riding" hazards near the shorelines of Duck (Ellison), Wood and Kalamalka Lakes. Restricting access will mean that landowners will have less to be concerned about and they will gain a sense of the commitment and responsibility of the District of Lake Country and other municipalities. It has been proven in other areas of the province that adjacent landowners are the best trail stewards.

1.0 Risk Management

While we are aware that all public recreation areas have associated risks, this newly acquired asset is different because it is difficult to keep the public from using it despite it not being open for public use. Risk management signs and controls will need to be in place as soon as possible. Five basic steps needed to ensure a successful risk management plan, including a barricade plan:

1. Identify exposures
2. Review current practices

3. Develop enhancements/designs
4. Implementing enhanced activities
5. Monitor results

These five steps have been applied in our approach to the barricade plan we are presenting here.

2.0 Identify Exposures

While identifying exposures in recreation areas is a balancing act to measure the risks and rewards for a user, we did not want to focus on the rewards until the trail is publicly open. Despite this we also understand that the rewards innately exist because it is a beautiful scenic corridor. At this time our focus is solely on the risks associated with access while the trail is closed and under construction. During the planning stages of the project it will be necessary to complete an entire risk management plan of the corridor.

Upon examination of the entire route of the Rail Trail with a risk management mentality, several considerations shaped our decisions on how to prioritize the options of design as well as designated locations for barricades. These considerations were as follows:

1. High hazards areas
2. Consistent and efficient emergency access
3. Existing locations of access
4. Pre-existing adjacent recreational motorized use
5. Adjacent high density residential areas
6. Construction access

The high hazard areas that we have identified are concentrated in the North along the Kalamalka lakeshore. This portion of the trail has narrow stretches that are not highly residential and less visible. In several sections the water on the edge of the lakeshore has no shallow entry but rather very deep sections of water. While we cannot stop all motorized traffic we can control access and eliminate the potential for “joyriding” along this stretch. More detail follows with the specifics of the plan.

3.0 Review Current Practices

So as not to reinvent the wheel we have had conversations with the City of Kelowna Rail Trail Project Management team. Their recent experiences developing the adjacent railway pathway through the city is invaluable. They have had time to look back in retrospect and give advice on what they have learned; what gates, bollards and signage have worked and what has not been

overly efficient and productive from both a management and maintenance perspective as well as from user feedback. In addition, communicating with the City of Kelowna has assisted us in making design decisions. One consideration in evaluating their feedback is that their approach has been one of high flexibility so that designs could be chosen for high density use for both adjacent vehicular traffic and pedestrian/cyclist use on the trail.

The City of Kelowna has utilized several designs in the form of barricades to control uses on the trail. *"We have selected various types of crossing treatments depending on the type of roadway we're intersecting. If anything is consistent in what we are doing that would be it." Andrew Albiston, Regional Projects Manager, City of Kelowna.* Most commonly the City of Kelowna has installed several types of bollards and gates.

3.1 Bollards

The City of Kelowna utilizes a simple bollard for all access points along the trail. In some areas where the trail is significantly wider they have installed two bollards and in some areas they've installed two bollards and swing gates. Trail User feedback on this barricade has not been significant. They have not experienced regular vandalism on the bollards. This urban section of trail however, does get plowed in the winter and the City Maintenance Workers have complained about not being able to access the locks to remove the bollards due to the snow and ice build up around the base of the bollards.

Overall the City of Kelowna is satisfied with the bollard designs and they have been an appropriate application to deter motorized use on the trail in an urban setting. This design is most applicable for an open trail with all construction aspects finalized.

City of Kelowna
Bollards

3.2 Gates

The two-gate system the City of Kelowna is currently using was designed as a double swing gate with no consistent locking mechanism for either the open or closed positions. User feedback on these gates has not been positive. When they are closed they act as a baffle which slows trail users down but can be tricky to manipulate on a bicycle with a trailer behind it. The gates can be pushed open or closed by anyone, meaning that most of the time they remain open.

Maintenance workers do not consistently close the gates therefore the majority of the time the gates are left in the open position and are not being used with their intended purpose. They have not been satisfied with this design and do not recommend it.

Double Swing Gates

Other current practices on the existing rural rail trails in the province of BC include numerous bollard and gate designs with no consistent standard utilized. In addition concrete lock blocks and large boulders (3' to 4' dia.) have been used to barricade motorized use from the trail. The inconsistency has come from the variety of managing bodies along the route managing their specific use issues with what resources they have had available.

After reviewing the current practices on rail trails we realized that while there are many good designs, they are expensive and not appropriate for our purpose at this time. We need a strong gate for rural settings that is both affordable but strong. It's not financially responsible to invest in a structure that would have to be removed during construction and re-installed after completion. As a result we found that current design practices along the Kelowna Rails to Trails would not

meet our objectives at this time. We have therefore sought ideas of design from other applications; such as the Ministry of Forests.

4.0 Develop Enhancements/Designs

The majority of the Okanagan Rail Trail travels through rural areas where the trail can be easily accessed by motorized recreation vehicles; dirt bikes, ATV's, UTV's, 4x4's, etc.. Until trail construction is complete and open to the public, we recommend barricading key access points without consideration in design for access of potential uses; cyclists with trailers, horses, etc. These uses will be considered in all aspects of the construction design. If the trail is not publicly open then making it easy to use defeats the purpose of the closure.

We are not recommending bollards at this stage of development as the City of Kelowna recommends this barricade as a final design measure. Due to the cost of fabrication, installation, removal for construction and re-installation after construction, we don't think it is a wise expenditure yet.

After completing a review of both local and provincial barricade practices we are recommending two forms of barricades to be utilized at this stage of development. They are: gates and supplemental boulders.

4.1 Gates

The barricades we are recommending are gates. We have reviewed various designs and costs. The gate we are recommending is a single pipe gate most commonly used in forestry applications. It is fabricated from schedule 40 steel pipe so it is not too heavy for installation but can withstand some abuse. It would be powder coated twice the colour yellow for visual sighting and safety. The design allows for the length to vary up to twenty feet wide meeting the needs of any potential access opening. We found this gate to be the most cost effective for the objective we are trying to meet. One example of a design specification is attached to this proposal. (See Appendix A)

Our suggestion is to install these gates at a width that exceeds the width of the trail surface so when the trail is resurfaced with either crush or asphalt the gates do not have to be removed for construction. Instead they can stay in place and be used in the security of construction activities.

In some locations we are also recommending that additional boulders approximately 900mm in diameter be placed adjacent to the gate. Where required, these boulders have been identified in the reconnaissance reports of each site visited.

4.2 Fencing

Currently some stretches of original CN page wire fencing exist along the perimeter of the right-of-way. In one area in particular we recommend monitoring the existing fencing to ensure it stays in a functional state. This recommended area starts at the road crossing of Lodge Road travelling South 2.7km. The fencing runs along the East side of the right-of-way.

The forested areas along this stretch are filled with trails that the dirt bike community utilizes from the neighbouring residential area. Ensuring that these users stay off the rail trail will be a challenge and appropriate signs should be prioritized for this section as well. Gates at road crossings will do little to keep these users off the trail but fencing and well positioned signs will have an impact.

5.0 Implementing Enhanced Activities – Barricade Locations

The locations of proposed barricades have been recommended and then confirmed after a thorough field reconnaissance was completed. In total there are seventeen gates being recommended for installation as barriers. We created the criteria as aforementioned in “Identify Exposures” on page 2 of this proposal. Using these criteria we then prioritized the chosen locations.

Knowing the travel routes of residents and reviewing the use patterns of the road crossings assisted us in making decisions on where it was appropriate to invest in controlling access.

All recommended locations have been physically visited, measured, photographed and analyzed. As a result, two of our originally specified barrier locations have been eliminated and one has been added. Each report represents a site and they follow in numerical order from North to South starting at the North end of the trail, ending at the Dilworth Road crossing where the current City of Kelowna Rails to Trails route ends. Identified at each site were the measured gate sizes and an approximate location for installation. The recorded details are outlined on a site by site basis as appendices to this report.

6.0 Monitor Results

There are several access locations in Lake Country that we are recommending not be barricaded. At these locations the access is not significant enough to warrant such measures however we do recommend that they be closely monitored. Contingency funds should be budgeted if access does become an issue at these locations.

Areas to monitor include several road access points in Oyama; Evans Road, Crawford Road, Cliff Road and Trewhitt Road. We don't expect these access points to be highly used by the public because they are inconvenient to get to. Regardless the balance of public access and private property protection will need to be monitored for issues.

There are also private properties; "Right of First Refusal" may be exercised and the IR7 discussions. These Landowners will need to be consulted regarding routing and possible barricades.

7.0 Trail Construction Phase

The gates we have recommended can be installed prior to removals of the tracks by CN. This would mean that there would no lag time between track removal and barricade installation. A key can be provided to CN so they can have access through all the gates. This will have to be discussed with them prior to their removal process.

In the design phase of the trail surface we recommend building an approximate 6' extension of the trail surface width around the gate on one side, wide enough for permitted uses to travel around the gate. It is imperative to slow trail users down while they make their passage at road crossings. If they have to turn their bikes and maneuver around a structure then they are forced to slow down and not race through the crossing. This in turn causes them to take time to look for traffic and also gives drivers of vehicles enough time to see the oncoming pedestrians.

8.0 Operation and Maintenance Phase

When the trail opens for public use it may be wise to keep the gates closed for a few years while the trail grows in popularity and the public learns appropriate uses of the trail. Once in high use by non-motorized users, rarely will there be any issues with inappropriate use access. Slowly over time the gates can be left open more frequently and quite possibly, eventually removed entirely if necessary. If bollards would serve a purpose at that time they could be considered.

We do recommend that some of these gates be left in place permanently and used for maintenance closures, public events, etc. The long narrow stretches along Kalamalka Lake could likely require heavy maintenance, such as rock fall removals. During this maintenance it would be best to close the trail during those higher risk operations.

9.0 Pricing

Gate pricing has been acquired from three fabricators on the (Appendix A) style gate. All pricing acquired is for a 10' powder coated gate so pricing will vary for longer gates approximately $65.00 for each additional foot.

The three suppliers that responded with prices are as follows:

A. Kelowna Steel Fabricators $1,275.00 per gate
B. Donald's Machinery $1,345.00 per gate
C. Rite-Way Fencing $1,289.35 per gate

Other costing on this project includes excavation, concrete, labour for installation and boulder supply, delivery and placement. Best estimates for these costs vary from site to site due to the logistics of access but would be approximately in the range of $4,000 - 6,000.00 per site. A conservative budget for the purchase, installation and management of the barricade plan would be as follows:

17 Gates (10' long)	21,675.00
Additional Gate Lengths	4,420.00
Installation (5,000/gate)	85,000.00
Project Management	4,600.00
Contingency (10%)	9,300.00
Total Project	124,995.00

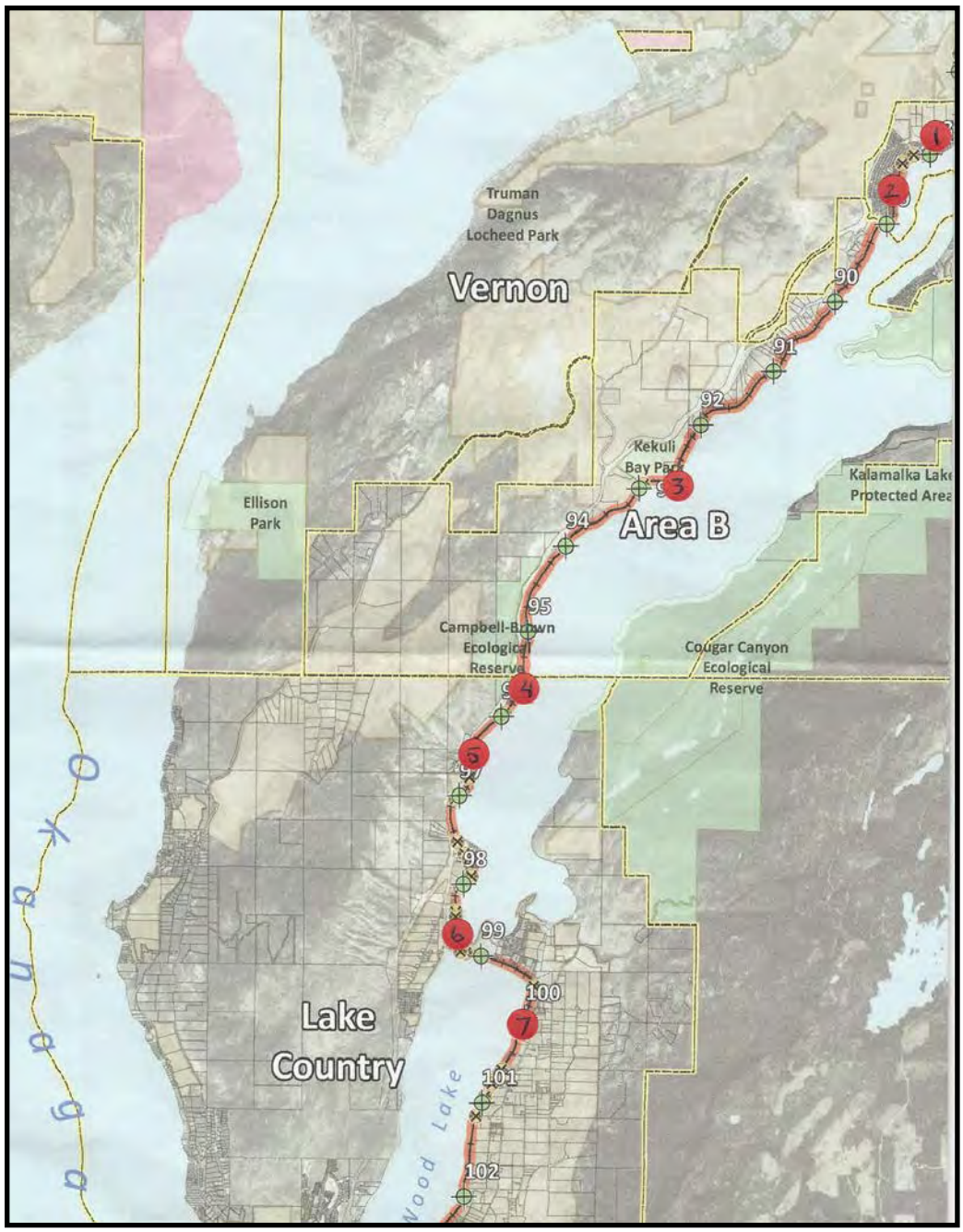
We recommend budgeting $125,000.00 for this project.

10.0 Map of Trail

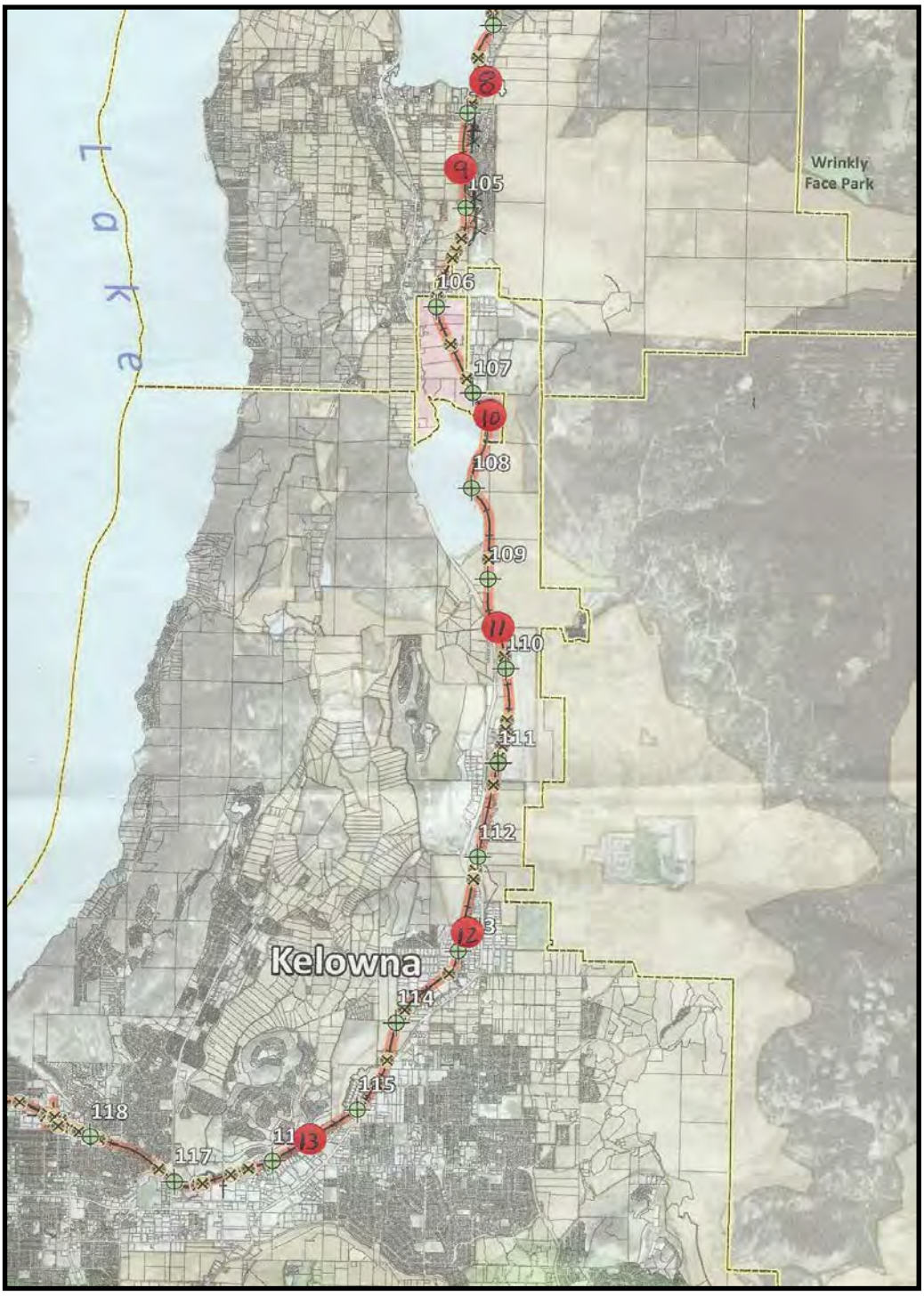
The following map identifies all of the proposed barrier locations that were visited.

1. North end of the Okanagan Rail Trail (1 gate eliminated)
2. Kickwillie Loop (2 gates)
3. Kekuli Bay Provincial Park (2 gates)
4. Crystal Waters (1 gate eliminated)
5. Thomson Road (2 gates)
6. Oyama Isthmus North (1 gate)
7. Oyama Isthmus South (1 gate)
8. Willet Road (1 gate)
9. Lodge Road (2 gates)
10. Duck Lake (1 gate)
11. Old Vernon Road (2 gates)
12. Sexsmith Road (2 gates)
13. Dilworth Road (1 gate)

Okanagan Rail Trail - NORTH



Okanagan Rail Trail - SOUTH



Okanagan Rail Trail - Barricade Plan Reconnaissance

Location: North end of Trail Route

Identification Number on Report Map: 1

Date Property Visited: June 18, 2015

Attending: L. Johnson

Hazards Identified: The trail leads to the intersection of the operating CN Rail Line and two trestle crossings.

Existing Access: There is no motorized access past Kickwillie Loop South of this point. The ROW is well fenced and only pedestrian traffic can access the area. Access to disembark from the trail needs to be considered somewhere along this stretch.

Adjacent Land Uses (Residential, Industrial, Farming):
North - Residential area and College Way - the ROW is contained with new chainlink fencing installed by the developer of this newly built residential area.
South - Residential area and Kalamalka Road

Recommendations:
After viewing this site it is recommended that there is no reasonable need for a gate because motorized access is not possible in this area. Access to disembark from the trail needs to be considered somewhere along this stretch.

Likelihood of this route being utilized for emergency access: Not Possible - there is no way for a motorized emergency vehicle to access this area other than from Kickwillie Loop.

Photos:

Left - Operating CN Line
Right - Rail Trail ROW

North connecting merge

Okanagan Rail Trail - Barricade Plan Reconnaissance

Location: Kickwillie Loop Road

Identification Number on Report Map: 2

Date Property Visited: June 18, 2015

Attending: L.Johnson

Hazards Identified: Could potentially be a high traffic area during the communiting times of day otherwise this is not a high hazard crossing.

Existing Access: Kickwillie Loop Rd and West Kal Rd intersects in a "T" approximately 10 metres past the ROW crossing so access comes from three routes and is very visible.

Adjacent Residents (Residential, Industrial, Farming): This is a highly residential neighbourhood with properties on both sides of the ROW both North and South. Travelling North on the route leads to the intersection of the functioning CN ROW heading North and East.

Recommendations:

- Gate at South end should measure 11' with two boulders on the East and one boulder on the West sides of the gate.
- Gate at North end should measure 10' and positioned 35' back from the edge of the asphalt with 2 boulders on the East side of the gate.

Likelihood of this route being utilized for emergency access: High - heading south on the ROW this route would provide direct access to issues occuring along the trail all the way to Kekuli Bay Provincial Park.

Photos:

Kickwillie Loop North

Kickwillie Loop South

Okanagan Rail Trail - Barricade Plan Reconnaissance

Location: Kekuli Bay Provincial Park

Identification Number on Report Map: 3

Date Property Visited: June 18, 2015

Attending: L. Johnson

Hazards Identified:
The North access leads to the ROW shoreline which is not highly visible or residential. The shoreline along this stretch quickly deepens and therefore a motorized vehicle accidentially driving into the waters would quickly be submerged. The immediate South shoreline is accessed as a beach area that is not within the BC Park boundary but park users utilize it as such.

Existing Access:
Kekuli Bay has a free boat launch and parking lot that people use whether they are camping in the park or not. To access the boat launch the ROW has to be crossed. Both North and South the ROW is highly accessible. The campground closes daily from 11pm to 6am and is controlled by a gate but the parking area, access to the boat launch and the ROW does not close during these times nor does it close in the winter months.

Adjacent Residents (Residential, Industrial, Farming):
North - There are some residential homes along this stretch that are not directly adjacent the ROW but they cross it to access the lake.
South - On the West side there is some agricultural activity. Otherwise there is no use along this stretch as far as the Crystal Waters development. The Campbell-Brown Ecological Reserve is adjacent to this stretch on the West side.

Recommendations:
Two 10' gates, one each on the North and South accesses to the ROW.

Likelihood of this route being utilized for emergency access:
High - travelling both North and South there is not another public access point for some time. To the North the next access is Kickwillie Loop and to the South the next access is Crystal Waters.

Photos:

Kekuli Bay - North

Kekuli Bay - South

Okanagan Rail Trail - Barricade Plan Reconnaissance

Location: Crystal Waters Development

Identification Number on Report Map: 4

Date Property Visited: June 10, 2015

Attending: L. Johnson and D. Thomson

Hazards Identified:
Crossing is only utilized by the residents within the development and this is a closed gate community. North of this access are steep drops into the lakeshore.

Existing Access:
There is access on both the North and South side of the crossing however no public access to the development and therefore access is restricted to only those living within the gated area.

Adjacent Land Uses (Residential, Industrial, Farming):
North - Residential on both the West and East sides of the ROW
South - Residential on both the West and East sides of the ROW
While the lake side (East) is developed as Residential there are also beaches and docks that could easily be accessed by trail users. Appropriate signs will be required along this stretch of the trail.

Recommendations:
After visiting this site it is recommended to not install a gate at this location. Access is already controlled through the entrance gate to the development. A gate was considered approximately 1 km North of the development where the Old Vernon Road comes close to intersecting the ROW but this access is not suitable for vehicles so a gate is not recommended at this time.

Likelihood of this route being utilized for emergency access:
Medium - North of this development the next access is at Kekuli Bay Provincial Park and if required it is likely the emergency access would come from Vernon and come through the Park.

Photos:

Junction of Old Vernon Rd and access to the ROW

Okanagan Rail Trail - Barricade Plan Reconnaissance

Location: Thomson Road Crossing

Identification Number on Report Map: 5

Date Property Visited: June 10, 2015

Attending: L. Johnson and D. Thomson

Hazards Identified:
Crossing is only utilized by the 11 residents of Jade Bay development on the West side of the crossing along Thomson Road.

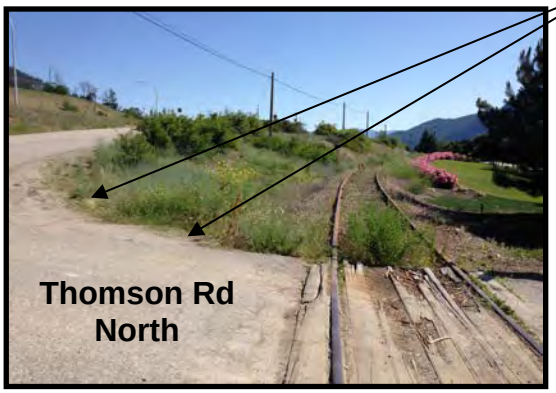
Existing Access:
Both sides of the rail crossing, North and South have existing vehicle access and both are highly visible from Highway 97 and Crystal Waters Road. The North access travels towards residential areas along the Lakeshore. The South access is residential and agricultural lands with the next access being Owls Nest Road which is considered a low risk access point because it is somewhat monitored by the resort.

Adjacent Land Uses (Residential, Industrial, Farming):
North - East side is approximately 15m of manicured lawn maintained by the Jade Bay Strata and 9 of 10 developed lots of Jade Bay Residential Neighbourhood.
West side is hillside of brush that goes up to the East side of Crystal Waters Road.
South - West side has two newly developed residential lots and one undeveloped
East side is approximately 50m of brush with a hill going up to Highway 97

Recommendations:
-Gate at North end should measure 11' with approximately 6 large boulders placed along the West edge of the road
-Gate at South end should measure 11' with approximately 2 large boulders placed along the West edge of the road
Both gates should be positioned approximately 6' from the edge of the ashpalt crossing so that there is not enough space for vehicles to park between the gate and the road crossing. We recommend communicating with the Jade Bay Strata regarding the gates.

Likelihood of this route being utilized for emergency access:
High - The next access is at Crystal Waters Development and therefore incidents occuring between this location and the development would likely be attended to from Lake Country so this would be the most efficient access.

Photos:



Boulder Placement is recommended here

Okanagan Rail Trail - Barricade Plan Reconnaissance

Location: Oyama Isthmus North

Identification Number on Report Map: 6

Date Property Visited: June 10, 2015

Attending: L. Johnson

Hazards Identified: This can be a high traffic area during commuting times, weekends and summer months due to the higher seasonal use along the Isthmus. Travelling South East

Existing Access: Oyama Rd crossing provides highly visible access to both the North and South of the ROW. Only the North is a concern because the South is open and accessible all along the entire length of the Isthmus.

Adjacent Land Uses (Residential, Industrial, Farming):
North - Residential and farm lands on both the West and East sides of the ROW
South - Oyama Isthmus has developed and undeveloped beach accesses along the shoreline on the West side of the ROW and Oyama Rd on the East side of the ROW.

Recommendations: One 14' gate and three large boulders to be positioned on the West side of the gate along the sidewalk. No gate is recommended for the other side of the crossing as access exists along the entire Isthmus.

Likelihood of this route being utilized for emergency access: High - Depending on where an incident took place, emergency access could be at either this location or the Owls Nest Resort.

Photos:

Oyama Rd crossing North

Boulder Placement is recommended here

Okanagan Rail Trail - Barricade Plan Reconnaissance

Location: Oyama Isthmus South

Identification Number on Report Map: 7

Date Property Visited: June 10, 2015

Attending: L. Johnson

Hazards Identified: This access is not highly visible but widely known about and has the potential to be a point of access for "joyriding" heading South on the ROW.

Existing Access: A small ungazetted road leads the public to cross the ROW to access an unofficial boat launch. This access also leads to a DLC owned but undeveloped property along the lakeshore.

Adjacent Land Uses (Residential, Industrial, Farming):
North - Oyama Isthmus which has both developed and undeveloped beach accesses along the Northern shoreline of Wood Lake along the West side of the ROW and Oyama Rd is on the East side of the ROW
South - Residential and Agricultural lands

Recommendations: One 14' gate. No gate is recommended for the other side of the crossing as access exists along the entire Isthmus. Appropriate signage is already in place at this location.

Likelihood of this route being utilized for emergency access: High - The next access heading South on the ROW is Crawford Rd so this is the most likely access if an emergency vehicle came via the Highway.

Photos:

Undeveloped boat launch access to Wood Lake

Okanagan Rail Trail - Barricade Plan Reconnaissance

Location: Willet Road North

Identification Number on Report Map: 8

Date Property Visited: June 12, 2015

Attending: L. Johnson

Hazards Identified: The ROW comes very close to the waters edge for approximately 300m prior to a suitable location for a gate.

Existing Access: There are 4 private driveways that cross the ROW to access properties on the lake side (West). All of these provide access to the ROW.

Adjacent Land Uses (Residential, Industrial, Farming):
North - Agriculture and Residential properties
South - ROW crosses Woodsdale Rd adjacent to the tennis courts. This area provides an open and easy access to the ROW but there is no reasonable way to barricade it and therefore we've moved the location of the barricade North along the ROW.

Recommendations:
-14' Gate at North side of shared residential crossing (12012 & 11910). This is the last property that provides Northern access to the ROW.

Likelihood of this route being utilized for emergency access: High - Woodsdale road is a direct route from the Ambulance Station. Accessing incidents North of this point would be very probable from this access location.

Photos:

Willet Road

Okanagan Rail Trail - Barricade Plan Reconnaissance

Location: Lodge Road Crossing

Identification Number on Report Map: 9

Date Property Visited: June 9, 2015

Attending: L. Johnson

Hazards Identified: Very high traffic crossing. Original post and wire fencing from CN is still in place on both the West and East sides of the ROW.

Existing Access: Both sides of the rail crossing, North and South have existing access and because it is a highly visible site it is a likely point of access.

Adjacent Land Uses (Residential, Industrial, Farming):
North - West side is occupied by the Kelowna Ogopogo Radio Controllers East side is approximately 50m of brush and then low density residential.
South - West side Lodge Road travels adjacent the ROW for 600m East side is approximately 50m of brush with low desnity residential up hill.

Recommendations:
-Gate at North end should measure 13'
-Gate at South end should measure 13'
Both gates should be positioned so that there is not enough space for vehicles to park between the gate and the road. Backing up a vehicle onto this crossing is a high hazard.

Likelihood of this route being utilized for emergency access: High - Lodge road is a direct route from the Ambulance Station.

Photos:

Lodge Road - North

Lodge Road South

Okanagan Rail Trail - Barricade Plan Reconnaissance

Location: Duck Lake

Identification Number on Report Map: 10

Date Property Visited: June 28, 2015

Attending: L. Johnson

Hazards Identified:
A trestle crossing Vernon Creek tributary is along this stretch and does not have railings for pedestrian use so it could be a potential falling hazard.

Existing Access:
While there is no direct access from road crossings there are potential access opportunities from adjacent areas that are not highly visible. Both Jim Bailey Rd on the East side of the ROW and Commonwealth Rd on the West provide access to the ROW from an unoffical crossing. In addition a large industrial storage yard at the end of Jim Bailey Rd could be utilized as an access point.

Adjacent Residents (Residential, Industrial, Farming):
This stretch of the ROW travels through Duck Lake Indian Reserve (IR7).
North - Holiday Park Resort is along the West side of the ROW from where a gate is being proposed.
South - On the West side of the ROW is Ellison Lake (a.k.a. Duck Lake) and the East side is agricultural lands all the way to Old Vernon Rd.

Recommendations:
Advise the Okanagan Indian Band of the potential access concerns and make the following recommendations:
- Gate should measure 14' and poistioned at the North end of the Vernon Creek trestle which is 680 metres south of the Jim Bailey and Commonwealth Rd crossings.

Likelihood of this route being utilized for emergency access:
Medium - There is some likeli-hood that this stretch could be used to access an incident South of this point towards Old Vernon Rd but emergency vehicle access would have to come from Beaver Lake Rd crossing heading south to this point.

Photos:

Access from Jim Bailey Road and Commonwealth Road

Gate location - North end of Vernon Creek Trestle

Okanagan Rail Trail - Barricade Plan Reconnaissance

Location: Old Vernon Road Crossing

Identification Number on Report Map: 11

Date Property Visited: June 12, 2015

Attending: L. Johnson

Hazards Identified: No major hazards visible aside from vehicular traffic on the crossing which is not a busy location.

Existing Access: There is highly visible access to both sides of the crossing. There is also a large parking area between Highway 97 and the ROW which could be potentially utilized as a trailhead further developed or not.

Adjacent Land Uses (Residential, Industrial, Farming):
North - Agriculture, East shore of Duck (Ellison) Lake and IR7
South - The ROW is adjacent the airport industrial area and further into agricultural lands and more industrial areas. .

Recommendations:
- Gate at North end should measure 11' and be installed 80' back from the asphalt where existing page wire fencing is in place.
- Gate at South end should measure 13' and be installed 10' back from the asphalt edge.

Likelihood of this route being utilized for emergency access: High - Highway 97 provides efficient emergency access at this location.

Photos:

Old Vernon Road - North

Old Vernon Road - South

Okanagan Rail Trail - Barricade Plan Reconnaissance

Location: Sexsmith Road Crossing

Identification Number on Report Map: 12

Date Property Visited: June 12, 2015

Attending: L. Johnson

Hazards Identified: This is a very high traffic crossing. Driver visibility is limited for vehicles travelling West due to the approaching hill to the ROW crossing.

Existing Access: There is highly visible access on both sides of this crossing.

Adjacent Land Uses (Residential, Industrial, Farming):
North - This is an industrial area with the next crossing being Lougheed Rd.
South - This is an inidustrial area with the next crossing being Leckie Rd.

Recommendations:
- Gate at North end should measure 14' and should be installed 100' back from the asphalt edge and place 3 boulders on the East and 4 on the West.
- Gate at South side should measure 20' and should be installed 10' back from the asphalt edge.

Likelihood of this route being utilized for emergency access: High - Highway 97 provides efficient emergency access at this location.

Photos:

Sexsmith Road - North

Sexsmith Road - South

Okanagan Rail Trail - Barricade Plan Reconnaissance

Location: Dilworth Road Crossing

Identification Number on Report Map: 13

Date Property Visited: June 12, 2015

Attending: L. Johnson

Hazards Identified: This is a very high traffic crossing and should have controls in the future unless the route stays on the existing Rails to Trails route on Leckie Place.

Existing Access: There are highly visible accesses on both sides of this crossing. There is also a large but undeveloped parking area on the West side of the North access.

Adjacent Land Uses (Residential, Industrial, Farming):
North - Is undeveloped but is adjacent the existing Millcreek Lineal Pathway. Leads to commercial and Industial areas.
South - The ROW way leads to the developed Rails to Trails route and connects at the next crossing which is Hardy St.

Recommendations:
- Gate at North end should measure 12' and should be installed 50' back from the asphalt edge of Dilworth Road.
- Gate at South end is not recommended as it is undetermined whether the section of trail (Dilworth to Hardy) will be developed because an adjacent trail exists.

Likelihood of this route being utilized for emergency access: High - If an incident where to occur between Dilworth and Sexsmith this would be the efficient access.

Photos:

Dilworth Road - North

Dilworth Road - South

APPENDIX A

ABBOTSFORD · KELOWNA · KAMLOOPS · LETHBRIDGE · CALGARY · RED DEER · EDMONTON · SASKATOON

RITE-WAY FENCING INC.

3535 Alcan Road
Kelowna, B.C.
V1X 7R3
Phone (250) 491-9174
Fax (250) 491-9178
Toll Free 1-877-422-3699

723 Tagish Road
Kamloops, B.C.
Canada
V2H 1B6
Phone (250) 314-9569
Fax (250) 314-9579

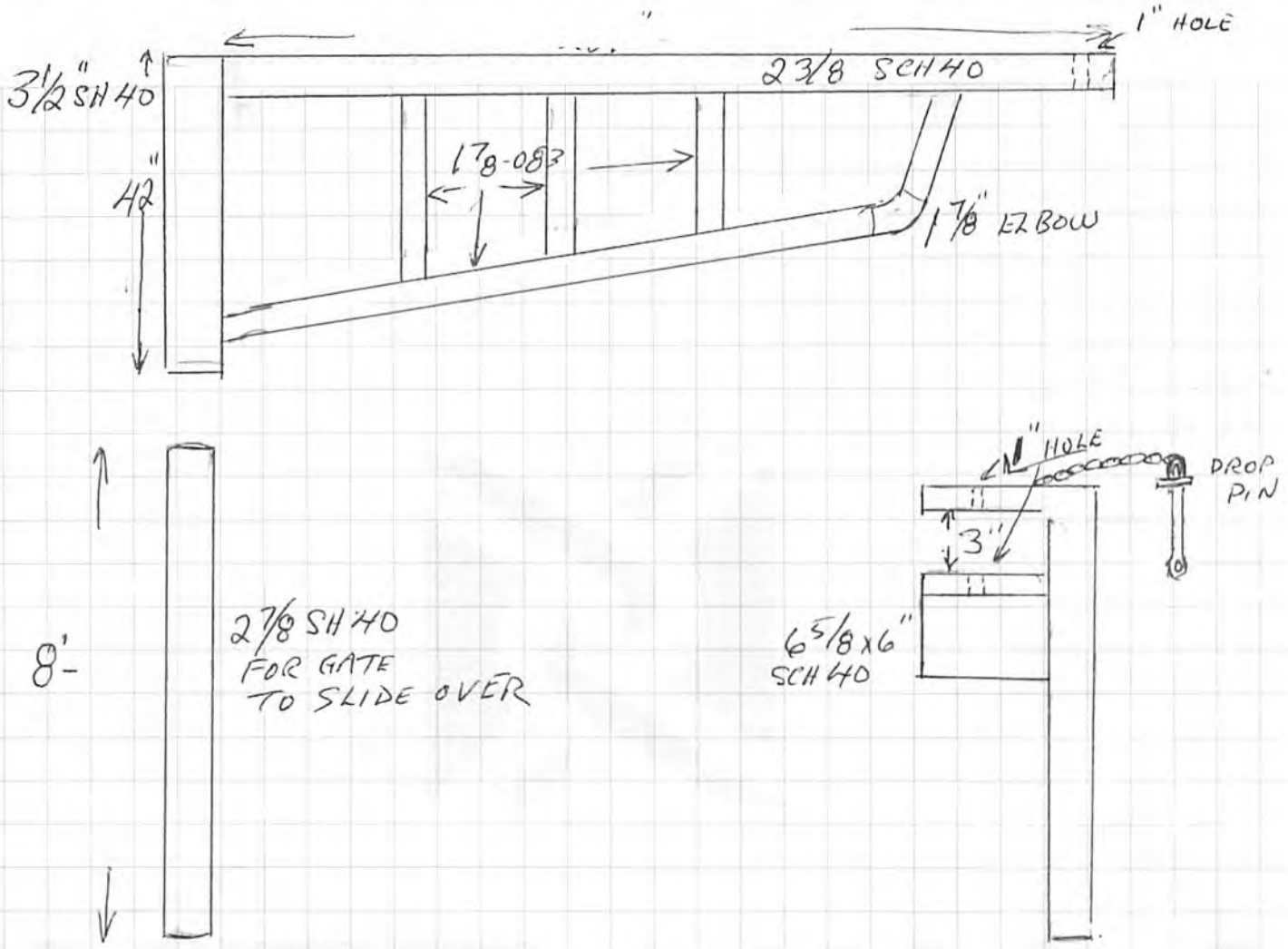
2525 - 39 Avenue North
Lethbridge, Alberta
Canada
Phone (403) 328-5666
Fax (403) 328-5656

4053 - 11 Street S.E.
Calgary, Alberta
T2G 3H1
Phone (403) 243-8733
Fax (403) 287-9174
Toll Free 1-800-425-5121

4040 - 78 Street Cres.
Red Deer, Alberta
Canada
T4P 3E3
Phone (403) 340-3000
Fax (403) 340-0743

8625 - 63 Avenue
Edmonton, Alberta
T6E 0E8
Phone (780) 440-4300
Fax (780) 465-1437
Toll Free 1-800-425-5120

#1-421-42 "A" Street East
Saskatoon, Saskatchewan
S7K 0V4
Phone (306) 933-4411
Fax (306) 933-4390
Toll Free 1-877-520-5122



CHAIN LINK MANUFACTURERS PORTABLE OILFIELD PANELS ORNAMENTAL IRON FENCE
ELECTRIC GATE OPERATORS PRIVACY SLATS CUSTOM DIGGING GUARD RAIL PVC FENCE
ALL COLOUR FENCE SYSTEMS FREE STANDING DOG RUNS FARM FENCING RENTAL FENCE

Appendix G

LRT Sections

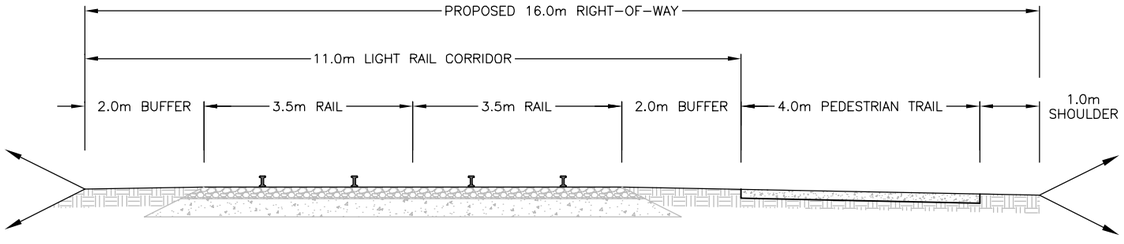
Okanagan Indian Band

LAKE COUNTRY
Life. The Okanagan Way.

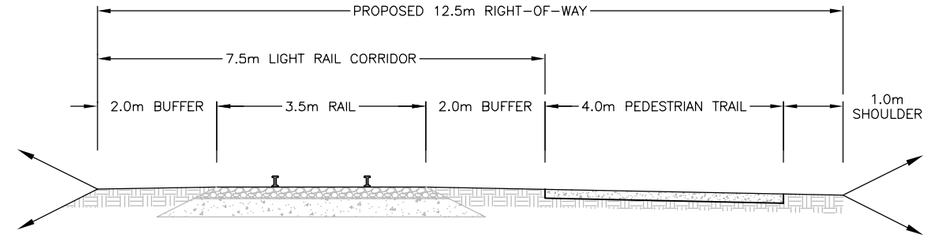
REGIONAL DISTRICT NORTH OKANAGAN

City of Kelowna

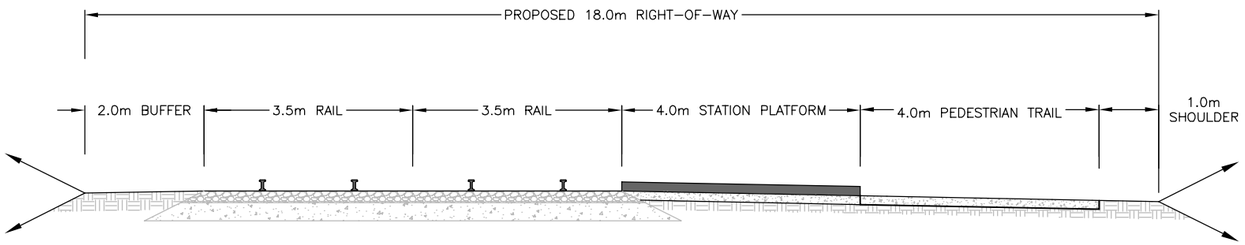
URBAN systems



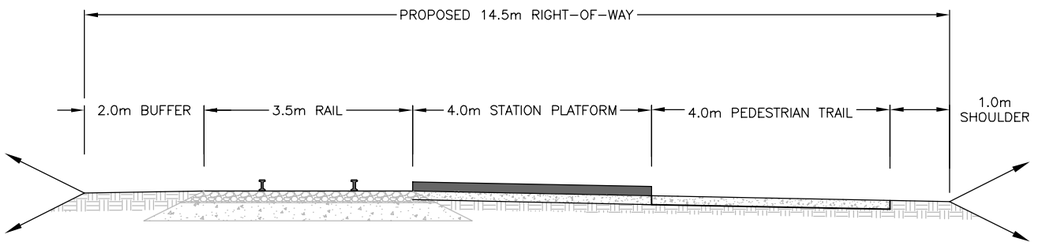
1 – DUAL LIGHT RAIL AND TRAIL – TYPICAL SECTION
SCALE 1:100



3 – SINGLE LIGHT RAIL AND TRAIL – TYPICAL SECTION
SCALE 1:100



2 – DUAL LIGHT RAIL AND TRAIL c/w STATION PLATFORM
SCALE 1:100



4 – SINGLE LIGHT RAIL AND TRAIL c/w STATION PLATFORM
SCALE 1:100

URBAN systems
urbansystems.ca

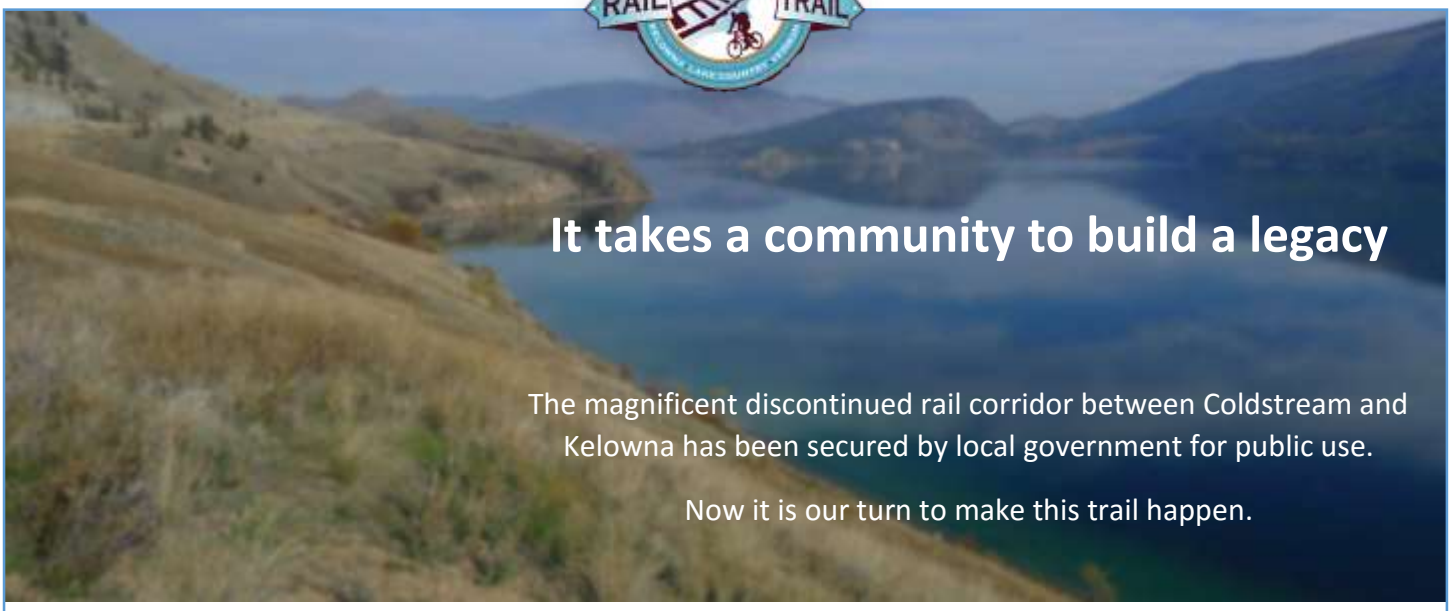
ISSUED FOR INFORMATION
APRIL 04, 2016
URBAN systems

Client/Project
INTER-JURISDICTIONAL TEAM
OKANAGAN RAIL TRAIL DEVELOPMENT PLAN - PHASE 1

Scale	Date	Figure
1:100	2016-03-18	

0467.0447.01 Title

LIGHT RAIL AND TRAIL RIGHT-OF-WAY
TYPICAL SECTIONS



It takes a community to build a legacy

The magnificent discontinued rail corridor between Coldstream and Kelowna has been secured by local government for public use.

Now it is our turn to make this trail happen.

The Rail Trail Fund Development Plan

Okanagan Rail Trail Initiative

April 12, 2016

Table of Contents

It takes a community to create a legacy

Introduction

This fund development plan is a community effort. The strategies in it are the result of collaboration with the Community Foundations, Trans Canada Trail, The Shuswap Trail Alliance, The Columbia Valley Greenways Trail Alliance, the Association of Professional Fundraisers, community groups and experienced fundraisers. The strongest part of this community driven development plan is the people currently involved, and more importantly, the people and organizations that will become involved once the official campaign begins.

This plan is developed from experience and knowledge. A report at the end of the campaign summarizing how the money was raised to build this magnificent trail will contain many items not included in this document. This plan will guide the initial implementation of the fundraising campaign and will evolve and adapt to meet the needs of the community. This campaign will achieve its target and the trail will be build. The people involved will ensure that goal is met.

Goals of the Campaign

1. ***To use a grass roots approach to motivate communities to come together and embrace this project as their own.***

2. ***Develop ownership in each community to provide a base for trail stewardship once the trail is constructed.***

3. ***To raise $7.86 million to allow the IDT to build a hard-packed gravel trail from Coldstream to Kelowna.***

4. ***million to allow the IDT to build a hard-packed gravel trail from Coldstream to Kelowna.***

The Fundraising Approach

Raising money for this project is a unique opportunity. The opportunity is to engage the community not only to make a donation, but to take ownership of the campaign and take pride in making this trial happen. Support for this trail is unprecedented. Over 10,000 people emailed the Okanagan Rail Trail Initiative indicating that they support the trail. A referendum on borrowing money to purchase the property brought out more voters than any other election in the District of Lake Country. Rail trail input sessions in March were extremely well attended with people excited to learn more. Community groups and service clubs are ready to help raise money. The community wants this trail. We have an unprecedented opportunity to engage the community and build this legacy together.

To facilitate this approach, The Okanagan Rail Trail Initiative (ORTI) will provide the organizational support to facilitate the engagement of individuals and organizations in the community to get involved. Our initial research, combined with feedback at the March open houses, has confirmed that individuals and organizations are eagerly awaiting the launch of the fundraising campaign. Overall, residents believe the trail will provide huge benefits to our communities and they want to make the trail happen as soon as possible. Thousands of individuals and many groups and organizations that want to see this trail constructed are willing to step up to donate and to encourage others to donate. This is what the community in the Columbia Valley experienced when they developed their fund development plan to raise $5 million to build the Westside Legacy Trail

connecting Invermere and Fairmont Hot Springs (www.ourtrail.org). They have met their initial one year goal and are now awaiting on matching funds to build the first section of their 25km trail.

A Network of Ambassadors and Campaign Partners

ORTI will engage the community by developing a network of Trail Ambassadors to reach out to friends, family, community leaders, clubs, service groups, businesses and other organizations. Trail Ambassadors will be supported by a website, traditional media, social media, and other communication materials. Trail Ambassadors will communicate the need for fundraising and encourage others to get involved in raising awareness of the project. The theme of the campaign will be 'Let's Make It Happen' (to be finalized by creative agency providing marketing services).

ORTI and Trail Ambassadors will also engage businesses, non-profits, service groups and clubs to support and expand the campaign. The Central Okanagan Foundation and the Community Foundation of North Okanagan have partnered to accept all donations and provide tax receipts. Sproing Creative, a website and marketing company, have partnered to design all communication materials and host the website. Discussions are also underway with other businesses and organizations to support and expand the reach of the campaign and several other organizations have been identified. ORTI, Campaign Partners, and Trail Ambassadors will all work to spread the excitement and inspire individuals and organizations to donate and/or raise.

By building a network of campaign partners, the campaign can reach a much larger community, reach funding targets faster, and building the trail sooner. It takes a community to build a legacy.

Types of Supporters

Similar to other fundraising campaigns, this fund development plan uses targeted strategies to engage different types of supporters. These include Trail Leaders, Trail Supporters, Trail Ambassadors, Campaign Partners, and the Business Community.

Trail Leaders (TL)

This group of supporters includes individuals and families that are known to support community efforts and are inclined to either have slightly active lifestyles or have family members who do. These supporters are part of a smaller group that will make a gift contribution of $10,000 to $250,000.

These supporters are often inspired to give by their peer's act of giving, therefore this group will be developed through personal networks. Trail Ambassadors will work with Trail Leaders to host 'kitchen table' discussion where friends and family are invited to discuss the development of the trail and the benefits it will provide to the community. Donation packages developed to support this group will be provided and follow-up will be completed by both the host and a Trail Ambassador. Initial testing of 'kitchen table' discussions was very successful resulting in several commitments to donate once the campaign begins.

Trail Supporters (TS)

This group includes individuals and families who will most likely be active users of the trail and is the largest group of supporters. These supporters will make a gift contribution of $25 to $5000. Some of these individuals and families have identified themselves through the okanaganrailtrail.ca website, social media or signed up at the recent community open houses. This group will also be reach through personal networks and supported through an email newsletter (mailed directly or forwarded from others), social media, news media, and communication materials. Supporters will be directed to the website for online donations or to the foundations for donations greater than $1,000. Regular media updates with this group will keep them informed of any fundraising events, total funds raised to date, and progress with trail planning and development. This group will be an important source of donations as they will encourage friends and family to contribute to the development of the trail as well. (Note: this approach worked very well in gaining emails of support in the pre-purchase phase of this project).

This group will also be the primary source of ***Trail Ambassadors (TA).*** Trail Ambassadors are volunteers that wish to officially encourage others to support the campaign. Trail Ambassadors will be given formal training in how to present the trail development project and will be supported by ORTI.

Campaign Partners (CP)

This group consists of community service clubs and organizations that promote and support tourism, outdoor activities and fitness. The goal with this group is to inspire them to host events and other activities to raise awareness of the campaign, raise funds for the development of the trail and encourage their members to get involved. Presentations outlining the benefits to the community will be made to these groups and support will be provided by Trail Ambassadors.

Business Community (BC) – Donors and Campaign Partners

This group consists of businesses and business support organizations (e.g. Chamber of Commerce) that wish to support the community campaign through donations, encouraging their employees, customers and members to donate or get involved, or provide in-kind services or products to support the campaign.

Raising the Money - Campaign Targets

The goal of the campaign is to raise the $7.86 (development costs plus administration fees associated with processing the donations). The focus of the campaign will be helping people to

1. realize that the trail will not be built until we, the community, raise the money to build the trail,
2. understand the costs associated with developing the trail,
3. imagine the benefits this legacy will provide, and
4. make a donation

To assist with understanding the cost to build the trail supporting communication material will outline the process and a breakdown of costs associated with the development of the trail. This will be reinforced by determining a cost per meter of construction and encouraging supporters to fund a meter. Donors will also be recognized by kilometers, meters, or portion of meters, funded. Total funding progress will also be expressed in meters to date.

The table to right provides a breakdown of donations by gift size.

Gift ($)	*# of*	*Total ($)*
250,000	0	-
200,000	1	200,000
150,000	2	300,000
100,000	3	300,000
75,000	4	300,000
50,000	8	400,000
25,000	10	250,000
20,000	12	240,000
15,000	15	225,000
10,000	45	450,000
4,500	50	225,000
3,000	90	270,000
1,500	150	225,000
750	200	150,000
450	250	112,500
300	1,100	330,000
150	16,000	2,400,000
50	6,000	300,000
25	6,500	162,500
Total	29,920	6,640,000
Grants		1,200,000

Reaching potential supporters will be imperative to the campaign. Thirty thousand supporters providing an average gift of $222 are required to raise the $7.86 million to build the trail. We will get there by having friends, family, community leaders, clubs, service groups, businesses and other organizations reaching out to others to engage them in this campaign.

It takes a community to build this legacy.

The assumptions and targets developed to achieve the gifts outlined in the table are provided below.

- Trail Leaders - 35 kitchen table discussions will be held resulting in 3 gifts per meeting
- Trail Supporters - 118,000 supporters reached 4 times (on average) resulting with 1 in 4 providing a gift
- Campaign Partners - 40 organizations reached resulting with 1 in 2 raising funds
- Business Community - 120 organizations reached resulting with 1 in 3 making a donation

Reaching supporters will be the task of Trail Ambassadors and Campaign Partners with support from ORTI.

To gain and keep momentum during the campaign, interim targets corresponding to the trail development process will be identified in partnership with the IDT. Experience from the Trans Canada Trail (http://tctrail.ca/) and Westside Legacy Trail (www.ourtrail.org) campaigns indicates that this strategy for large scale projects does build momentum, allows for matching grant opportunities and makes the campaign much more manageable.

The remaining source of funding for the project will come from grants. There are however limited grants (number and dollar amounts) for building trails that are available for non-profits to apply for. ORTI will continue to build a list of available grants, make applications and work with IDT on any municipal granting opportunities.

Sponsorship

Sponsorship requires more discussion. IDT and the municipalities will need to decide if they want sponsorship along this trail. If the IDT partners decide to endorse sponsorship, it would be best to prepare a strategy when trail amenities are better known. This would allow time for a better understanding of each municipality's bylaws, identification of physical opportunities for sponsorship and the ability to provide potential sponsors with traffic counts and projections to increase the value of sponsorship. Also, in the next year we will have a much better feel for how the balance of the fundraising is going.

ORTI is prepared to work with the IDT on sponsorship opportunities when opportunities arise.

Supporter Recognition

All supporters will be recognized on the campaign website on a 'digital wall of recognition' by the # of kilometer, meters, or partial meters of construction funded. There will be a digit wall for families and individuals and a second for organizations and businesses. There will also be a digital wall of recognition for campaign partners; businesses and organizations who are providing in-kind services and products to the campaign. Larger donations may also be recognized in partnership with the Foundations and other campaign partners through media events and releases.

Campaign Support Materials

All fundraising communications products are being developed with Sproing Creative. All materials will be coordinated and deliver key messages targeted to desired audience (see Appendix 3 for key messages by supporter type). Below is a table of many of the campaign support materials

Item	*Purpose*	*Details/Call to action*
Letter	Inspire Trail Leaders to donate and encourage others to donate to the foundations	This letter will detail the specific benefits that their donation will provide to the community and an overview of the costs of the trail. Instructions on how to provide gift to foundations. ***Call to action:*** 1) donate, 2) encourage network to donate
Item	*Purpose*	*Details/Call to action*
Social media	To enable and inspire others to expand the reach of the campaign	Regular posts on fundraising progress, stories from the campaign trail (stories of donors and supporters, events, etc.), and $ needed for next phase of construction. ***Call to action:*** 1) donate, 2) get involved, 3) encourage their network to donate
Videos	To inspire donations and get involved	This will include professional video along with contributions from trail supporters. ***Call to action:*** 1) donate, 2) get involved, 3) visit the website
Posters	To inspire donations and get involved	Visual with inspiring words directing people to the website. ***Call to action:*** 1) donate, 2) get involved, 3) visit the website

Trailhead Signs	To inspire current trail users to donate and encourage others to donate	Signs on property indicating future location, the benefits of developing the trail, and outlining the need to donate. ***Call to action:*** 1) donate, 2) get involved, 3) visit the website
Presentations	To inspire other groups to raise money and/or to inspire individual donations	Presentations specific to each group highlighting the benefits of the trail and overview of costs to inspire them to raise money within their group or host events to raise money. ***Call to action:*** 1) donate, 2) hosts events to raise awareness and money
Website	To inspire community fundraising and keep people informed of progress	Details provide in appendix

Other communications tools will be developed as determined by Trail Ambassadors and Campaign Partners.

Development Plan Management

Dedicated experienced volunteers will manage the implementation of the development plan. Regular results/planning meetings reviewing website, social media, event and donation metrics will be conducted with the implementation team. Strategies will be adjusted base on results with input from Trail Ambassadors and Campaign Partners. Key areas of the implementation plan have been assigned to leaders and/or coordinators. Updates will be provided to IDT bi-weekly.

Summary

Raising $7.86 million will be challenge. It is a challenge however that this community is willing to take on. Discussion with Trail Leaders, Trail Supporters, Business and Campaign Partners indicate the community is excited and ready to make this trail happen. Partnering with the North Okanagan Community Foundation and the Central Okanagan Foundation and creating a network of Trail Ambassadors and Campaign Partners the campaign will reach and inspire trail supporters from Edmonton to Victoria to get involved and help make this trail happen.

Appendix 1 – Website Site Map

Top Level/Sub Page	Purpose	Content Required	Call to Action
Homepage	To get people engaged in the project to build the trail	1. Inspiring introduction paragraph 2. Inspiring images 3. Donate Now Button 4. Get Involved Button 5. Progress to target fund raising (% to current target, total meters funded, # of donors). Note, we will need a message below indicating the current $ amount target and why it is important. 6. E-letter signup and social media	1. donate button 2. get involved button 3. sign up for updates (social media and e-news letter)

		7. Message at bottom – It will take a community to build a legacy	
Our Trail	To motivate people to give a donation and get involved.	1. Introduction recognizing work to date by government 2. Benefits of the trail 3. Inspiring images 4. Donate Now Button 5. Get Involved Button 6. Link to subpage of constructing the trail 7. Link to subpage of overview of project 8. Link to Impact Assessment Report (or summary) 9. Link to Map	1. donate button 2. get involved button 3. sign up for updates
Constructing a trail	Provide potential donors an understanding of costs and how their money will be used.	1. Overview of how the trail will be constructed and associated costs. Will include phases of construction that will include targets and timeframe for funding. 2. Images showing construction engineering and drawings 3. Updates on trail development to date	1. donate button 2. get involved button 3. sign up for updates
Project Organizational Structure	Provide people clarification on who is doing what.	1. Short description of each organization (IDT, each Foundation, ORTI, A map showing ownership of trail by municipality). 2. Logos and links to each organization 3. Donate Now Button 4. Get Involved Button	1. Direct people to area to answer questions they many have 2. Hit the get involved button 3. Sign up for updates
Donate Now	Receive and/or direct donations	1. Inspiring introduction paragraph 2. Explanation of where donations are going and all donations will be used for trial development costs (notice: cannot direct your donation to a specific cost or section of trail) 3. Explanation of Donating online vs writing a cheque to Foundations 4. Explanation of how to donate directly to each Foundation 5. Inspiring images 6. Donate Now Button (online – Canada Helps) 7. Get Involved Button 8. Progress to target fund raising (% to current target, total meters funded, # of donors) 9. E-letter signup and social media	1. Donate 2. Get involved button 3. Sign up for updates
Top Level/Sub Page	**Purpose**	**Content Required**	**Call to Action**
Get Involved	Inspire individuals and organizations to get involved in the campaign.	1. Inspiring introduction paragraph 2. Explanation how you can get involved – individuals as Trail Ambassadors, Clubs and Service Groups as fundraisers, Businesses and Organizations as fundraisers, Business and Organizations as campaign partners 3. Inspiring images 4. Donate Now Button 5. Progress to target fund raising (% to current target, total meters funded, # of donors) 6. E-letter signup and social media	1. Have individuals, clubs and service groups and Businesses/organizations submit information to get involved 2. Spread the word of the campaign 3. Help raise money 4. Sign up for updates

Trail Supporters	To recognize trail supporters and to get individuals and organizations involved in supporting the campaign	1. A short statement thanking all donors 2. Inspiring images 3. Link to Individual and Family Supporters 4. Link to Organization/business Supporters 5. Link to Campaign Partners 6. Donate Now Button 7. Get Involved Button 8. Progress to target fund raising (% to current target, total meters funded, # of donors) 9. E-letter signup and social media	1. donate button 2. get involved button 3. sign up for updates
Individual and Family donors	Recognize individuals and families who have donated	1. Table of individuals and families by name and meters funded (ability to have part meters as well, sort by name and meters funded) 2. Donate Now Button 3. Get Involved Button 4. E-letter signup and social media	1. feel recognized 2. donate button 3. get involved button 4. sign up for updates
Business / Organization donors	Recognize businesses and organizations who have donated	1. Table of businesses, organizations, clubs and service groups by name, logo and meters funded (ability to have part meters as well, sort by name and meters funded) 2. Donate Now Button 3. Get Involved Button 4. E-letter signup and social media	1. feel recognized 2. donate button 3. get involved button 4. sign up for updates
Campaign Partners	Recognize businesses and organizations supporting the campaign	1. Table of businesses and organizations by name, logo and what their role is. 2. Donate Now Button 3. Get Involved Button 4. E-letter signup and social media	1. feel recognized 2. donate button 3. get involved button 4. sign up for updates
Events	Keep people informed of fundraising events	List of upcoming events in the community supporting the rail trail (open houses, milestone celebrations, fundraisers, etc.) Chronological List view. Could be calendar view if the events are too numerous.	1. Have people attend events 2. Event organizers upload event details for posting (FORM) 3. Sing up for updates
Resources	Enable others to raise money for the trail	Enable others to raise money for the trail	1. Have supporters download information and help raise money

Appendix 2 – Overview of Communication Timing

TL – Trail Leaders, TS - Trail Supporters, TA – Trail Ambassadors, CP – Campaign Partners, BC – Business Community

Month	*Task/Supporter Group*	*Communication/actions*
April	Pre-launch build up	Use various tools (e.g. social media) to build excitement leading to day 1 of fundraising campaign.
	TL – Prepare for kitchen table discussions	Finalize materials and schedule kitchen table discussions
	TS – prepare for launch	Finalize website and all supporting material.
	TA – prepare for training	Development training process and material.
	CP - Meet with CS's in each community	Provide overview of campaign and discuss possible fund raising events and the supporting materials required.
	BC – prepare for Launch	Develop list of targeted organizations.
April/ May	Launch Campaign	Website live with ability to accept donations Press release to media Email first newsletter to existing supporters Social Media update (Facebook, Twitter, YouTube, Instagram)
May	Install Trail Head Signs	Inform people about the fundraising campaign
	Launch of Rail Trail Ale	Notice in newsletter, website, media release and social media
	TL	Continue to schedule kitchen table discussions
	TS	Engage through social media updates
	TA	Enlist through website and social media and host 1st training session
	CP	Request meeting/presentation to CS's not met with yet
	BC	Begin outreach
	Grants	Continue identifying and apply
	Campaign rally in each Municipality	Campaign events celebrating the start of the Campaign and announce current funds raised to date
June	Make videos of key supporters	Send videos of supporters through social media (this will continue throughout the campaign)
	Start Billboard Campaign	Billboards in North and Central Okanagan (if required)
	TL	Continue to schedule kitchen table discussions and keep current donors updated.
	TS	Social Media, e-newsletter and Website update -# of supporters and meters funded
	TA	TAs hosting information sessions (coffee/wine talks) and supporting local community fundraising.
	CP	Follow-up on letter continuing to schedule meetings/presentations
	BC	Continue outreach and keep current supporters updated.
	Grants	Identify and apply
July	Make promotional video	Distribute through social media
	TL, TS, TA, CP, BC and Grant strategies refined based on results to date	With input from campaign partners and trail ambassadors, refine strategies based on results to date and input from TAs and CPs
August	Plans will be developed based from results to date	

Audience	*Key Messages*	*Website*	*Social Media*	*Other communication Tools*
Trail Leaders	1. Highlight the benefit of the trail and the legacy it will provide. 2. Show bigger picture (map) of how it can lead to a much bigger opportunity (not on website - just in package) 3. Show breakdown of how 7.5 million dollars will be raised 4. Show breakdown of costs and phases of construction 5. Use the meters funded from other donors as incentive 6. Updates on funding progress 7. Updates on project milestones	1. Website to express a level of professionalism and contain facts with reference material 2. Clearly articulate benefits on website and make it easy to find 3. Explain breakdown of costs and make it easy to find	1. Won't be targeted specifically by social media (however acknowledge that they may still subscribe)	***Intro Letter:*** 1. personalized 2. Outline benefits 3. Outline costs 4. Stress legacy nature of project ***TL News Letter:*** (updates emailed) 1. Updates on funds raised Updates on project progression ***Media Releases:*** 1. Recognition
Trail Supporters: 3 types ***A) Excited and want to donate*** ***B) Excited and want to get involved***	1. The campaign has begun and it now time for you to contribute. 2. Updates on funding progress 3. Updates on project milestones 4. Your full donation goes toward the develop costs of the trail (noting that donors cannot direct their gift to specific costs or sections of the trail)	1. Instructions on how to donate - make it obvious and crystal clear 2. Instructions on how to get involved- make it obvious and crystal clear 3. Funding progress 4. Project Progress	1. updates on funding progress with reminders to go to the website to see the list of current supporters 2. updates on events 3. project progress update 4. reminders to donate/get involved	***e-news letter:*** 1. reminders of need to donate and get involved 2. funding and project updates 3. reminders to go look at the trail supporters on the website
C) Know a bit about the trail and are now interested in learning more about	1. Get them excited to donate and get involved 2. Need to know about how the trail will benefit the community and create a legacy 3. Need to understand the cost of constructing the trail and understand where their money will go 4. Need to get them excited about the trail	1. Clearly articulate benefits 2. Explain breakdown of costs 3. Instructions on how to donate 4. Instructions on how to get involved 5. Funding progress 6. Project Progress	1. Some posts include benefits of trail 2. Some posts to include high level update on costs 3. Some posts to include legacy aspect of project	***Brochure:*** 1. move people to website 2. benefits of trail 3. costs to build the trail ***Posters:*** 1. motivate to go to the website
Potential Trail Supporters	1. Understand the opportunity and how it came about (very brief). 2. Need to know about how the trail will benefit the community and create a legacy. 3. Need to understand why the trail cost so much, and understand where their money will go 4. Need to get them excited about the trail	1. Same as group C along with 2. A very brief overview of how this opportunity came about	3. Same as groups A-C (when they become supporters and sign up.	***Brochure:*** 1. move people to website 2. benefits of trail 3. costs to build the trail ***Posters:*** motivate people to go to the website
People who don't support the trail and/or have concerns	1. Acknowledge that some people may have concerns and address them if possible. 2. Stress the value of the trail to the larger community and the legacy it will provide. 3. Provide details of the breakdown of the costs and a brief explanation of why they won't increase	1. Acknowledge that there are concerns 2. Clearly articulate benefits 3. Explain breakdown of costs 4. Make it clear who to contact with questions and concerns		

Audience	*Key Messages*	*Website*	*Social Media*	*Other communication Tools*
Trail Ambassadors	1. Need to get the word out that the campaign needs trail ambassadors and inspire them to join 2. Clear message on what their role will be and how they become ambassadors. 3. Provide recognition for Trail Ambassadors. 4. Provide support for their work on the campaign	1. Motivate people to become TA 2. Clear instructions on how to get involved 3. Materials supporting TA easily available	1. Post motivating to become a TA	***TA News Letter:*** (updates emailed) 1. Updates on funds raised 2. Updates on project progression 3. Information on any upcoming meetings ***Display Boards*** (to be used by TA) 1. Clearly articulate benefits 2. Explain breakdown of costs 3. Motivate people to get involved 4. Motivate people to donate
Campaign Partners	1. Need to get the word out that the campaign needs partners and inspire them to join. 2. Clear message on what their role will be and how they become campaign partners. i. In kind donations - be clear on the need (e.g. printers, t-shirt makers, etc.) ii. Campaigners - raise awareness, host events, raise money, and inspire donations. 3. Provide recognition for campaign partners. 4. Provide support for campaign partner's work/events.	1. Motivate organizations to become CP 2. Clear instructions on how to get involved 3. Materials supporting CP available	1. Posts motivating to become a CP 2. Post supporting CP events 3. Post recognizing CP for their support in the campaign	***CP News Letter:*** (updates emailed) 1. Updates on funds raised 2. Updates on project progression 3. Information on any upcoming meetings ***Presentation:*** 1. Clearly articulate benefits 2. Explain breakdown of costs 3. Motivate them to become CP ***Display Boards*** (to be used by CP) 1. Clearly articulate benefits 2. Explain breakdown of costs 3. Motivate people to get involved 4. Motivate people to donate ***Media Releases:*** *1.* Recognition and events
Businesses	1. Highlight the benefit of the trail and the legacy aspect of it 2. Show bigger picture (map) of how it can lead to a much bigger opportunity (not on website - just in package) 3. Show breakdown of how 7.5 million dollars will be raised 4. Show breakdown of costs and phases of construction 5. Use the meters funded from other donors as incentive 6. Updates on funding progress 7. Updates on project milestones (estimated construction dates and current phase of construction)	1. Website to express a level of professionalism and contain facts with reference material 2. Clearly articulate benefits on website 3. Explain breakdown of costs	1. Some posts include benefits of the trail 2. Some posts to include high level update on costs 3. Some posts to include legacy aspect of project	***Intro Letter:*** 1. personalized 2. Outline benefits 3. Outline costs 4. Stress legacy nature of project ***BC News Letter:*** (updates emailed) 1. Updates on funds raised Updates on project progression ***Media Releases****:* *1.* Recognition

TRAIL DEVELOPMENT PLAN

Okanagan Rail Trail Corridor

CONTENT

- Vision
- Approach
- The Trail
- Environment
- Archaeology
- Consultation
- Design
- Construction
- Cost Estimate
- Next Steps
- Recommendations
- Q&A

VISION

- A continuous public trail from Coldstream to Kelowna

VISION

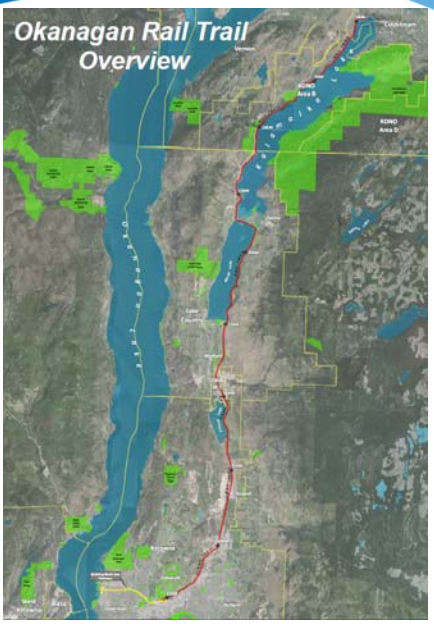
- A continuous public trail from Coldstream to Kelowna
- In the future … multi-modal transportation

APPROACH

- Objective: a basic trail
- Understand the site and issues
- Partnership model
- Community consultation
- Integration with fundraising

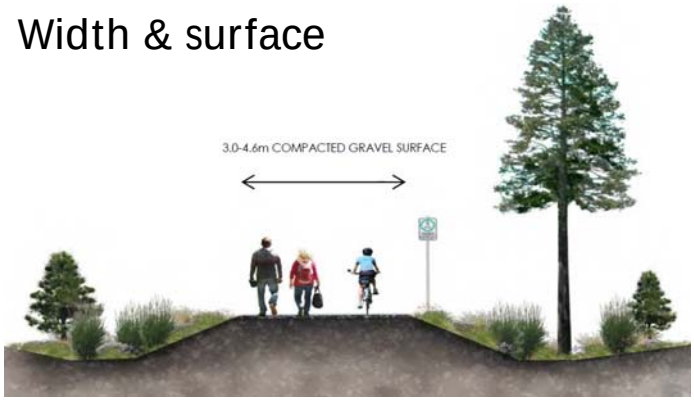
TRAIL

- Extent
  - 48km



TRAIL

- Extent
- Width & surface



TRAIL

- Extent
- Width & surface
- Site sections
  - Agricultural

TRAIL

- Extent
- Width & surface
- Site sections
  - Residential – both sides

TRAIL

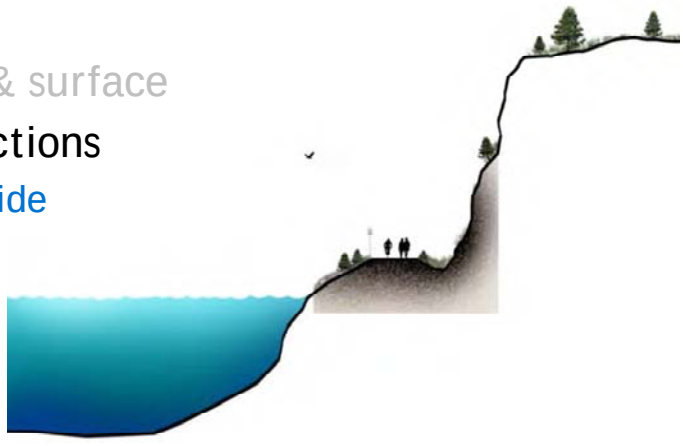
- Extent
- Width & surface
- Site sections
  - Residential – one side

TRAIL

- Extent
- Width & surface
- Site sections
  - Industrial

TRAIL

- Extent
- Width & surface
- Site sections
  - Lakeside



TRAIL

- Extent
- Width & surface
- Site sections
- Access control & safety
  - Barricades/gates for access control
  - Site safety
  - Road crossings

ENVIRONMENT

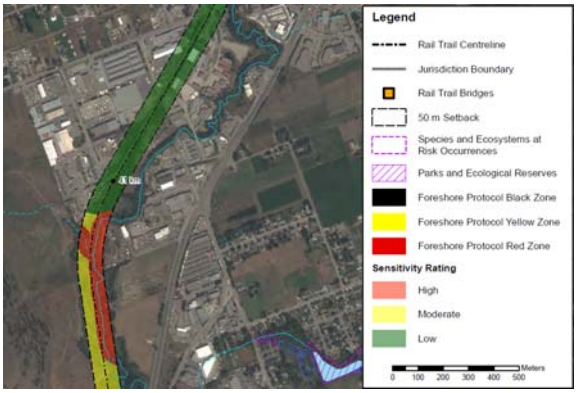
- Site remediation
  - CN responsible for remediation of contaminated sites
  - CN currently working on remediation plan and schedule

ENVIRONMENT

- Site remediation
- Assessment
  - Overview assessment completed
  - Terrestrial and aquatic red-blue-yellow zones identified
  - Regulatory requirements identified

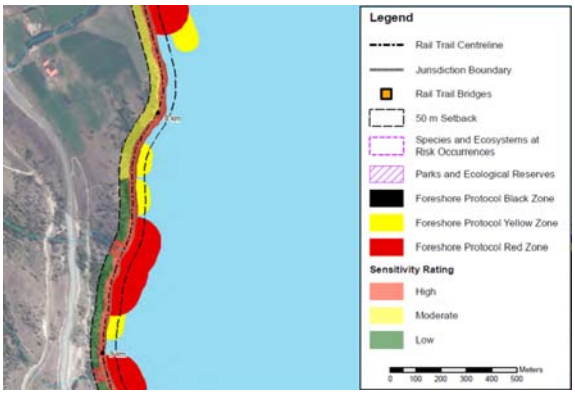
ENVIRONMENT

- Site remediation
- Assessment



ENVIRONMENT

- Site remediation
- Assessment



ARCHAEOLOGY

- Traditional territory of Sqilxw
- Known sites, & potential for other sites
- Archaeological overview to be undertaken
- Protocol to be set up for construction

CONSULTATION - METHODS

- Open Houses
- On-line survey & interactive map

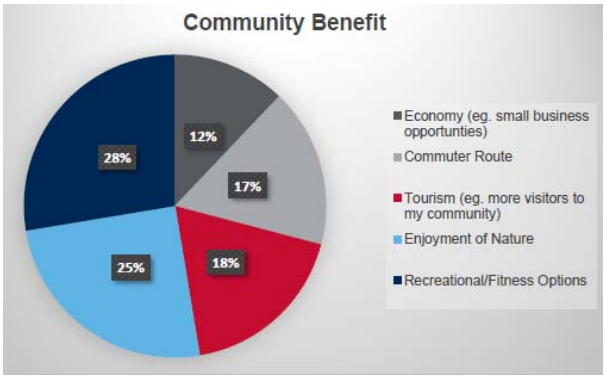
- 940 attendees
- 10,000 views
- 687 completed surveys
- 160 opportunities
- 2,300 interactions

CONSULTATION - RESULTS

- 96% support for development of trail

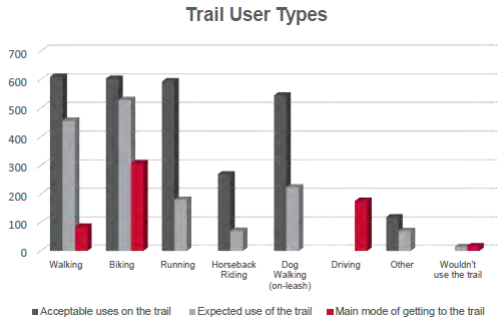
CONSULTATION - RESULTS

- 96% support
- Benefits



CONSULTATION - RESULTS

- 96% support
- Benefits
- Expected use
  - ~600 walking/running
  - ~500 cycling
  - ~200 dog walking
  - ~50 equestrian



CONSULTATION - RESULTS

- 96% support
- Benefits
- Expected use
- Common themes
  - Connectivity to existing trails
  - Adjacent property concerns
  - Issues re specific uses
  - Parking, access, maintenance
  - Natural areas & wildlife
  - Tourism, economic development & commuting

DESIGN

- Alignment
  - Follow existing rail bed
  - Adjust for:
    - Archaeology
    - Environment
    - Site conditions

DESIGN

- Alignment
  - Coldstream / RDNO

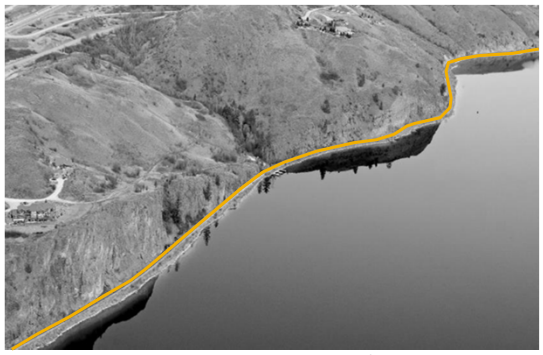


image compliments of Okanagan Rail Trail Initiative

DESIGN

- Alignment
  - Lake Country

image compliments of Okanagan Rail Trail Initiative

DESIGN

- Alignment
  - Duck Lake Reserve

image compliments of Okanagan Rail Trail Initiative

DESIGN

- Alignment
  - Kelowna

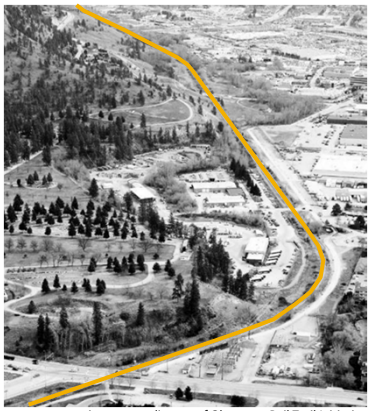
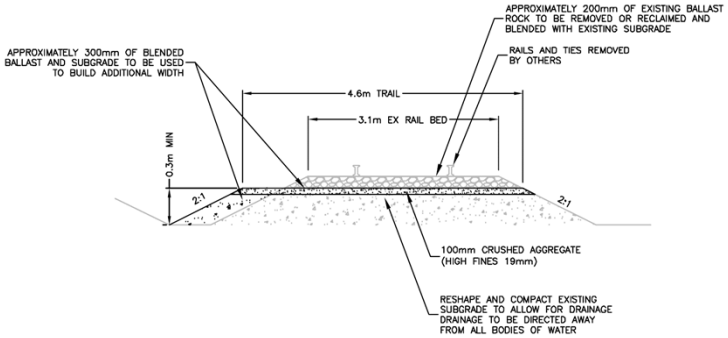


image compliments of Okanagan Rail Trail Initiative

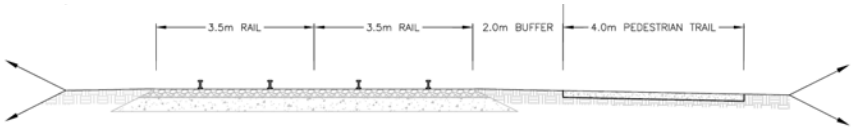
DESIGN

- Alignment
- Trail section



DESIGN

- Alignment
- Trail section
- Future multi-modal



DESIGN

- Alignment
- Trail section
- Future multi-modal
- Base
  - Crushed & compacted aggregate
  - Accessible surface
  - Sturdy, engineered base
  - Long lasting
  - Capability for asphalt topping

CONSTRUCTION

- Alignment
- Trail section
- Future multi-modal
- Base
- Construction
  - Use existing materials
  - Minimize hauling
  - Scheduling windows
  - Prioritized phasing (multi-year)
    - Access controls
    - Rock scaling
    - Environment, drainage
    - Road crossings
    - Trail, bridges & signage

COST ESTIMATE

Environment, bridges, rock scaling	$ 1,063,000
Drainage	350,000
Access controls and road crossings	1,129,000
Trail construction	2,950,000
Contingency & engineering allowance	2,196,800
TOTAL*	**$ 7,688,800**

*plus fundraising fees

NEXT STEPS

TRACK 1

Development

- Fundraising *
- Env'l/arch'y/geotech'l
- Design
- Permits
- Consultation
- Construction
- Operation & maintenance

NEXT STEPS

TRACK 1

Development

- Fundraising *
- Env'l/arch'y/geotech'l
- Design
- Permits
- Consultation
- Construction
- Operation & maintenance

TRACK 2

Planning

- Corridor protection
- Network integration
- Infrastructure
  - parking, washrooms, lights
- Amenities
  - furniture, signage, heritage

RECOMMENDATIONS

- Receive this report for information
- Endorse the *Trail Development Plan*
- Staff to work with IDT to develop detailed plans for construction

Q & A

image compliments of Okanagan Rail Trail Initiative