



OLIVER + AREA



TRAILS MASTER PLAN



Catalyst Community and Resort Planning

Gilbey Engineering Services

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INTRODUCTION

The Oliver and Area Trails Master Plan is a collaborative initiative of the Oliver and District Community Economic Development Society (ODCEDS), the Town of Oliver, Oliver Parks and Recreation and the Regional District of Okanagan Similkameen (RDOS). The Oliver area has been increasingly interested in the recognition, enhancement and expansion of trails and pathways throughout the region. In the fall of 2007, ODCEDS commenced a planning process for the development of a Trails Master Plan for the Oliver area.

This Master Plan provides a comprehensive strategy to establish a well-connected trail amenity for residents and visitors within the Oliver area. This Master Plan indicates the community's preferred trail planning directions, illustrative trail mapping together with an action plan for execution by an array of community partners.

The Master Plan encapsulates these deliverables with the following components:

Background – The initial section of the Oliver and Area Trails Master Plan outlines the project scope, context, study area, trail status, and trail opportunities/challenges together with input received from community consultation initiatives.

Jurisdictional Interests – The Oliver area contains several levels of government and non-government organizations that have a direct interest in the planning and management of current and future trail enhancements. This section summarizes related policy directions and land tenure, particularly highlighting how each interest may influence future trail management and development.

Master Plan Key Directions - This section outlines the key goals of the trails initiative together with the recommended trail/road improvements, special routes, physical or jurisdictional constraints and protocol, estimated costs and project priorities.

Action Plan – The final section provides an implementation strategy, specifically addressing the directions recognized within the Master Plan including important management considerations, funding, maintenance, trail protection and timeline priorities.

SECTION 1 - BACKGROUND

The project commenced in the fall of 2007 with a facilitated, interest group workshop. The brainstorming session was held with invited local trail interests, where baseline trail information was documented together with key goals for the Oliver area. The workshop findings indicated that the community needed a trail master plan to provide a coordinated and achievable approach for the enhancement, connectivity and sensitive expansion of the area's trails, bike lanes and pathways.

1.1 SCOPE

This Master Plan identifies detailed trail and roadway corridors to increase the opportunities for, and enjoyment of, commuting and recreation within the Oliver area. The Master Plan primarily focuses on non-winter (not snow covered) and non-motorized users including: walking, mountain biking and equestrian travel. The plan acknowledges winter and/or motorized use of trails primarily at higher elevations as well as motorized wheelchair/scooter use (for persons with disabilities) on multi-use valley bottom trails. This Master Plan does not consider urban sidewalks.

1.2 CONTEXT

Located at the northern most point of the Sonora Desert at the southern end of the Okanagan Valley, the Oliver area is well suited for trail experiences. The community offers a mild and dry climate that is further complemented by countless recreational activities from the surrounding mountain terrain to the abundance of lakes and other amenities. The region is known as the Wine Capital of Canada as it has BC's largest concentration of vineyards and commercial wineries. There exists tremendous potential for synergies in the establishment of safe, picturesque, educational and connecting trail routings within close proximity to wineries and orchards, downtown Oliver and a proposed Wine Village.

1.3 STUDY AREA

The study area is referred as the Oliver and Area, which comprises all of Electoral Area "C" of the Regional District of Okanagan Similkameen (refer to Figure 1). Although not part of recommended improvements, the Master Plan also identifies potential trail connections beyond the study area, to ensure that Oliver area trails are integrated into the surrounding Okanagan region.

Figure 1

1.4 TRAIL STATUS

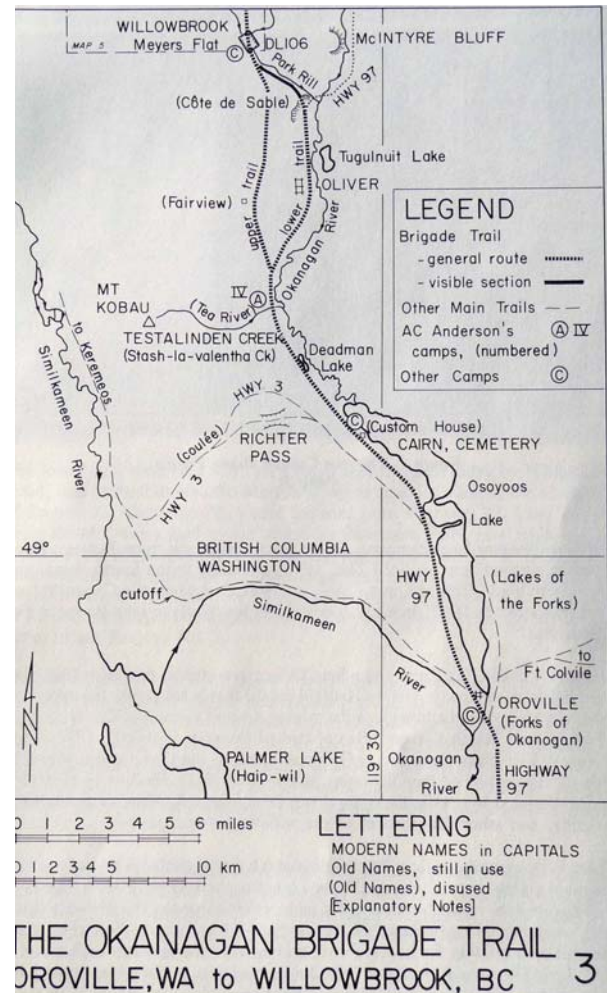
Trail use in the Okanagan Similkameen region has a long history as both: key transportation routes for fur trading brigades and early mining and agricultural settlers; and passive recreation areas provided by the locally significant International Hike and Bike Trail. The area also provides relatively close front and backcountry trail access, while the surrounding agricultural roads provide gentle and scenic routes. The Master Plan has considered the range of users and activities that occur on the local trail network, notably:

Trail Users - The local trail users include: passive walking, rollerblading, hiking, skateboarding, cross country skiing, and equestrian; mechanized users such as road biking and mountain biking; and motorized users such as wheelchairs/scooters, snowmobiles, motor (dirt) bikes, and all terrain vehicles.

Trail Activities - There are a range of activities that occur concurrently on the existing trail system including: naturalist interpretation such as nature festivals and events, birders/bird counting, wildlife viewing, and the salmon hatchery runs; recreation such as relaxing strolls, dog walkers, power walking, sport training (triathlon, joggers); tourist experiences such as wine tours, sightseeing, camps, river rafters and floaters; and various other interests such as farm uses, hunters, fishers, campers and industry.

Existing Trail Routes - The Oliver Area currently has a wide range of trails situated on public and private lands. Although many of the established trails have been secured through park dedications, easements or right of ways, there are others that are informal connections or routes. Figure 2 identifies the existing trail inventory. A summary of the character of the trails within the area is as follows:

- Valley bottom trails cater to non-motorized users that connect important community destinations including parks, neighbourhoods,



Map Image Courtesy of David Gregory, Summerland Museum and Heritage Society

downtown and natural areas. The spine of this trail network is the recognized International Hike and Bike Trail.

- Country roads such as Black Sage Road provide a rolling cycling or walking experience just above the valley floor. The majority of such roads do not have paved or delineated paved shoulders.
- Front country trails are situated primarily on public lands and accommodate a wide range of non-motorized and motorized users.
- Backcountry Trails are located on public or conservation lands at higher elevations. The trail networks often combine former mining roads with hiking or equestrian trails. The White Lake trail network is an example of a highly used backcountry trail in the Oliver Area where hiking and mountain bike trails co-exist.

1.5 MASTER PLAN OPPORTUNITIES AND CHALLENGES

In developing the Master Plan with local stakeholders, the potential for future trail enhancement and construction was determined by defining opportunities and constraints. To achieve the community's preferred directions the Master Plan has recognized and proactively addressed the following:

1.5.1 Opportunities

The Oliver Area is well suited for trail development as noted:

Community

- Oliver is an active community that places high value in recreational trails;
- The existing International Hike and Bike Trail is a important spine, where other trails connect; and
- There are active community trails groups including the South Okanagan Bike Club, South Okanagan Chapter of the Back Country Horsemen Society of BC, Oliver Riding Club and the International Hike and Bike Society that have already pursued funding initiatives and projects independent or in conjunction with local or senior government.

Terrain/Routing

- The valley floor is relatively flat for ease of use and construction;
- The Okanagan flood protection dike provides a platform for the International Hike and Bike Trail;
- There are former rail and current irrigation channel right of ways that may have potential for trail routes;
- The surrounding Crown land could accommodate expanded front and backcountry trail networks subject to the appropriate environmental assessments as not to damage ecological systems; and
- The RDOS is continuing to document and promote trail use in the area.

Economic Development

- The ODCEDS and the Chamber of Commerce have both recognized the importance of trails to the livelihood of the community and its appeal to attract visitors;
- A trail network would complement the proposed Wine Village Resort and Oliver's position as the Wine Capital of Canada;
- Mount Baldy, situated approximately 50 km southeast of Oliver, is a developing four season, recreation based resort;
- Visitors to Oliver are increasingly looking to cycling and hiking as a means to explore the area;

- Osoyoos Indian Band continues to embrace economic development in their community through tourism; and
- Oliver has the potential to facilitate the connection of amenities and experiences between the communities to the north (Okanagan Falls, Kaleden, and Penticton) and the Osoyoos area.

1.5.2 Constraints

Although trail expansion is generally supported within the community, there are several perceived constraints that may exist in fulfilling the Master Plan, as noted below:

Agriculture - Oliver is an agricultural community, whereby fruit growing and more recently wineries are dominant economic generators. The lands are also used for other crops and free range grazing. Agricultural lands are the farmers' livelihood, where great care is taken in nurturing and protecting their lands and (often vulnerable) crops.

In discussions with local agricultural interests and in review of the recently adopted Agricultural Plan, the primary concerns with the interface between trails and farming uses as follows:

- threatening the agricultural use and functioning of the land by trespassing, taking crops, littering and/or vandalizing (including fire);
- unknowingly introducing invasive plant species; and
- allowing off-leash pets to disrupt farm activities and livestock.

In the same respect the farming activities may compromise the recreational experience of the trails through encroachment, irrigation, spraying, fertilizing (noxious odors) and other agricultural activities.

Natural Environment - The local trail experience is enhanced by a network that showcases the unique environmental character of the region, however in some cases, the introduction of the public into environmentally sensitive lands may negatively impact the protection and integrity of the natural areas. In particular, trail encroachment could conflict with the protection of the natural environment in the following ways:

- interaction (human or pet) with wildlife and ecosystems;
- introduction of invasive plant species;
- access to previously undisturbed lands; and
- littering, fire and/or degradation (i.e. erosion, contamination, etc) of natural and riparian areas.

Further trail routings through environmentally sensitive areas may also result in safety concerns to the trail user such as wildlife conflicts and hazardous terrain. Section 3 and Figure 3 further highlight the important environmental interests within the Oliver Area.

Land Use - Trail development in Oliver continues to be impacted by the use of land both on public and privately held lands. There are extensive tracts of Crown land within the Oliver area with uses including agriculture, rangelands, conservation areas, flood control, development, recreation and extraction activities. In particular, the International Hike and Bike Trail does not have secured tenure with the province for the recreational use of the Okanagan River dike. Activities already permitted on Crown lands may be impacted, notably new development parcels, and commercial recreation opportunities. In addition locations within the South Okanagan are being considered by federal agencies for a National Park Reserve.

Oliver's existing trail inventory includes many informal trail connections through privately owned lands. Although many of these trails are not legally established informal use is permitted and these links contribute to the recreational enjoyment of the community. Unfortunately as lands are developed important routes may be eliminated. It is important to ensure that during the development approval process important trail connections are identified and secured.

Flood Protection - The International Hike and Bike Trail is currently situated along the Okanagan Lake Regional System Dike. The Ministry of Environment's Water Stewardship Division has indicated that the trail use introduces potential risks to the dike's structural integrity for erosion protection, drainage and public safety. The trail use also may introduce the increased potential for littering, fires and dike degradation.

The use of the dike for a trail also creates conflicts whereby the public chooses not obey signs or barricades that restrict access to hazardous areas where dike maintenance or upgrades are being undertaken (such as repair of vertical drop structures, drainage works or removal of hazardous trees, and noxious weed mitigation).

The hazards may also include emergency responses to mitigate dike erosion or failure and potential flooding.

Multiple Users - There are many activities that take place on public trail networks within the Oliver area, which may result in conflicts with other uses. In particular, frequently the various modes of travel and activities may create challenges (self-propelled, equestrian, mechanized or motorized) and conflicts (i.e. hunting vs. bird watching).

Financial and Staffing Resources - The Oliver region has limited resources in which to plan, manage, develop and regulate trail use in the area. For example, the International Hike and Bike Trail is managed by a non-profit society. It is crucial that the International Hike and Bike Trail, and the local trail program be funded and properly managed through local government or a not for profit organization that has secure and ongoing funding and resources. The January stakeholder session, however, learned that the existing International Hike and Bike Society will be dissolved later in 2009.

1.6 COMMUNITY ENGAGEMENT

The following highlights the opportunities and key findings realized from community stakeholders and the public to be involved in the Trail Master Plan process:

1.6.1 Initial Stakeholder Session (October 2007)

Community interests were invited to participate in a brainstorming session on the potential for future trail enhancements in the Oliver area. The workshop was intended to encourage informal, roundtable discussions about the existing character and future possibilities for an integrated trail network. The stakeholders identified the goals, strategies and priorities for the enhancement and expansion of cycling and pathways in the Oliver area. The information provided the framework for the future preparation of a master plan to facilitate improved connections for non-vehicular movement within the community.



1.6.2 Second Stakeholder Session (May 2008)

The second stakeholder meeting developed goals for the Oliver and Area trail network and provided direction on the development of the Master Plan. The meeting included the identification of preferred trail routes as

well as the importance of incorporating the following considerations into the Master Plan:

Key Destinations – Recognize and connect to cultural spots, areas with cultural significance, geological history, downtown, wine village, connections to other surrounding trail systems, lakes, schools, wine destinations, recreation areas, etc.

Environmental Preservation – Address the need to protect the area's unique ecosystems and discourage fragmentation, while preserving diverse species, and migratory birds/byways, particularly in and around Vaseux Lake, the South Okanagan Wildlife Management area, the Haynes Lease Ecological Reserve the South Okanagan Grasslands and the White Lake Grasslands and the South Okanagan Grasslands.

Communications - Prepare a communications strategy that would provide information regarding trail use, extent of the route, awareness of dangers or limitations and education regarding areas of environmental, cultural or community significance. Signage is able to play an important component on the awareness of trail conditions, danger, nature interpretation, education conflicts and concerns, as well as wine and agricultural information.

Enforcement - Investigate public buy-in / education including student jobs (monitoring and building), and school involvement by proactively building respect for the trail system. Consider enforcement functions if the National Park designation is achieved.

1.6.3 Additional Stakeholder Engagement (June – September 2008)

The consulting team continually worked to involve an array of government and non-government groups in discussion regarding the proposed Trail Master Plan. In particular meetings and correspondence was exchanged with environmental, economic, recreational, community and agricultural interests.

1.6.4 Oliver Sunshine Festival Public Display and Engagement (July 2008) and Website Questionnaire (July-August 2008)

In an effort to reach out trail interests for input at a community event, a consultant-manned booth was provided at the Oliver Sunshine Festival. The public was able to discuss possible trail routings and complete a reference questionnaire. The displays were then moved to Double O Bike Shop where additional written input was collected.

The draft Master Plan trail maps were also posted in the ODCEDS's website together with the Sunshine Festival questionnaire. There was limited input

into the survey with only 16 responses. The information received includes the following (note a summary of the survey results are included in Appendix A:

- all respondents used the Oliver and Area trail system, of which 87.5% were residents of the Town or the Regional District;
- walking/hiking were the most frequent activities (100%) followed by mountain biking, road biking, equestrian and ATV/snowmobiling and rollerblading;
- favourite trails included the International Hike and Bike Trail, Golden Mile, McIntyre Bluff/Rattlesnake Lake, and White Lake;
- areas that may benefit from additional trail development include the Covert Farm/White Lake area, Tuc El Nuit Lake, links to wineries and on both the east and west benches of the valley;
- Areas should restrict or prohibit trail development areas negatively impacted by motorized users, west side of Vaseux Lake, Indian Reserve lands, and areas with fragile ecosystems;
- There was a strong desire to connect major destinations with trail connections notably provincial recreation areas (81.3%), Oliver area wineries (68.8%); downtown/Wine Village, Osoyoos, local water courses and Penticton/Okanagan Falls (all 62.5%); and provincial parks and conservation areas (56.3%);
- The following roads would benefit from improvements to facilitate the safe travel by pedestrians and cyclists: Black Sage Road, Road 7, White Lake Road, Green Lake Road, Highway 97, Tuc El Nuit Road, Secret Road, and Fairview/350th; and
- There was a comment that trail use in the summer is hot, and therefore shade should be an important consideration of future trail routes



Written comments were also submitted to the Oliver and District Community Economic Development Society that identified certain routing options as well as the importance of:

- paving the entire International Hike and Bike Trail;

- providing interpretive experiences through signage and maps for historic places and natural areas;
- including bike racks in downtown;
- involve schools and youth organizations in trail building and maintenance; and
- Consider policing on the International Hike and Bike Trail.

1.6.4 Stakeholder Meeting and Public Meeting (January 2009)

In response to interest expressed by the range of community interests and stakeholders a final meeting was held just prior to the public meeting. The discussion included key comments from the MoE Water Stewardship and the Environmental Stewardship Divisions. In addition to providing



additional comments related to the Master Plan document and the accompanying Figures, the group also discussed priorities, trail standards and maintenance as well as ongoing maintenance and management concerns. Additional stakeholder contacts were also suggested.

A public meeting followed the stakeholder meeting, which for the most part provided an opportunity for additional community comments related to the proposed trail alignments and priorities.

Figure 3

SECTION 2 - JURISDICTIONAL INTERESTS

The Oliver and Area Master Plan is a shared initiative of the Town of Oliver, Regional District of Okanagan Similkameen, Oliver Parks and Recreation and the Oliver District Community Economic Development Society. The Oliver area contains a considerable number of government and non-government agencies that have interest in trails planning and management. This section highlights the key directions for each organization:

2.1 TOWN OF OLIVER

The Town's direct interest in the facilitation of trail routings in the Oliver area is outlined in Official Community Plan policies, as well as the existing right of way for the Irrigation Canal.

2.1.1 Official Community Plan

The Town has incorporated future trails planning in the policies of their Official Community Plan (OCP), particularly relating to parks, recreation and open space, community infrastructure, transportation, economic development and the proposed Wine Village. The OCP supports the following:

- development of a system of pedestrian and cycle trails and greenways;
- interconnecting major park and recreation areas, schools and the downtown core through trails;
- utilizing existing and future parks, open spaces and trail systems as alternative modes of travel and movement throughout the community;
- evaluating appropriate trail linkages and connections to activities, facilities and tourist opportunities outside the Town;
- encouraging the exploration of the Wine Village by pedestrians and create an easily accessible experience for all residents; and
- encouraging the construction of handicap-friendly walking, hiking and bicycle paths to and through the orchards, vineyards and wilderness areas including the proposed national park.

New development proposals are to be consistent with the policies of the OCP (noted above) and as such the Town typically requires that new trail connections be installed (at the developer's expense) as a condition of subdivision approval. It is the intent that these connections will service the new development as well as existing homes and businesses requiring access to surrounding trails, parks and amenities.

2.1.2 Irrigation Canal Right of Way

The Town of Oliver is the fee simple owner of an irrigation canal that runs along the west side of the valley. The Town has indicated that the right of way is approximately 15.25 metres (50 feet) wide plus localized widening to accommodate the topography. The right of way does not have any charges on the titles that would prohibit the public from being allowed to travel on the right of way. Figure 4 indicates that south of Road 11 the channel is a buried pipeline; and north of Road 11 it is a concrete-lined, open canal carrying irrigation water for 6 months each year. It is estimated that even with the existing canal, there would remain ample room for both the irrigation works and a trail, although some localized slope encroachments in proximity to existing houses may warrant pedestrian bridges to allow the trail to be located on the most accommodating side of the canal.

2.2 REGIONAL DISTRICT OF OKANAGAN SIMILKAMEEN

The Regional District supports additional trail corridors and connections through their Official Community Plan and draft Regional Growth Strategy as well as in operations through the mapping resource referred to as Click, Hike and Bike™. The Regional District has also been directly involved in the development of an Agricultural Area Plan, that also specifically identifies trail related concerns and mitigation approaches. Additionally, the Regional District has an Invasive Plant Program that provides education and outreach to the community and assists regional management of invasive plants.

2.2.1 Official Community Plan

The OCP indicates that it is a goal to *“provide local parks, trails, and other outdoor recreation opportunities in the locations and in sufficient quantity to be available and accessible, where possible, to all members of the community”*. Further the policies within the Parks and Natural Environment section indicate the ability to use statutorily required parkland dedications to include trail corridors, that any park consider trail connections. The OCP policies also recognized the ability of trails not only to add continuity to natural areas, but also avoid or mitigate possible negative environmental impacts to sensitive areas. The OCP policies are considered in the review of new development and land use amendment proposals.

2.2.2 South Okanagan Regional Growth Strategy (not yet adopted)-

The South Okanagan Regional Growth Strategy specifically considers the following:

- support and promote tourism and tourism-related activity;
- create walkable, livable, mixed use neighbourhoods and communities.

- support the creation of walkable neighbourhoods and pedestrian/ cycle/transit networks that offer both alternative transportation and recreational opportunities; and
- support the coordination of regional parks and recreation services and trail networks to improve accessibility of recreational opportunities.

2.2.3 Click, Hike and Bike™

This RDOS has created an online Click, Hike and Bike™ website. The site showcases and provides mapping for local trails from Okanagan Falls to Osoyoos. It is very user friendly and complements the Master Plan directions.

2.2.4 Agricultural Area Plan (draft June 2008)

In June 2008, a draft of the Rural Oliver Agricultural Area Plan (AAP) was presented to the community for consideration. The AAP "*articulates clearly defined policies which will serve to protect, enhance and expand Rural Oliver's agricultural lands, and thus the economy and quality of life of residents in both Rural Oliver and the Town of Oliver*". Of significance to trails planning and development are the following recommended strategies:

- develop signage to inform visitors and draw attention to rural traffic characteristics and safety;
- install signs on existing trails through farming areas to make users aware of their responsibilities, farming activities and practices;
- discourage new trails through agricultural area, yet if they are considered affected farmers must be consulted and mitigation proposed to limit the impact of trail users on farm operations;
- lobby for upgraded secondary roads to support agri-tourism;
- link agricultural products, freshness and quality to rapidly growing tourism and recreation themes; and
- utilize signage and markers to advertise local agriculture and mark agricultural heritage and historic points of interest.

2.2.5 Rails to Trails and Parks Committee

Regional District of Okanagan-Similkameen's Rails to Trails and Parks Committee have adopted the following Terms of Reference:

The Rails to Trails & Parks Committee will secure tenure on the portions of the Kettle Valley Railway that are within the boundaries of the Regional District. Through public input, develop a comprehensive linear park strategy that provides links between the region's communities, parks, schools, shopping areas, and open spaces.

Goals:

1. *Identify all sources of funding.*
2. *Establish consensus upon an equitable funding formula among participating members.*
3. *Determine priorities of constituents via on-line survey.*
4. *Development terms of reference for stewardships.*
5. *Identify short term and long term trail routes.*
6. *Establish trail construction guidelines.*
7. *Establish trail signage guidelines.*
8. *Establish a construction and acquisition program with associated cost estimates.*
9. *Establish trail use guidelines.*
10. *Establish guidelines for resolving conflicting uses of trails and bylaws for encroachment.*
11. *Establish guidelines for acquiring existing trails and associated compensation.*
12. *Establish guidelines for fostering volunteerism.*
13. *Establish guidelines for developing relationships with the agricultural, winery, and tourism industries.*
14. *Establish guidelines for developing relationships with First Nations.*

2.2.6 Invasive Plant Program

The RDOS has an Invasive Plant Program that assists the community by providing guidance and technical assistance on invasive plant management. A consultant is hired annually to develop and disseminate educational materials, and work cooperatively with area stakeholders to implement a regional invasive plant strategy. The recently developed strategic plan (December 2008) recommends careful consideration of invasive plants when developing new trails, and identifies existing trail systems as key vectors of invasive plant spread.

2.3 OSOYOOS INDIAN BAND

The Osoyoos Indian Band's land base consists of over 32,000 acres of British Columbia's most beautiful land with potential for residential, commercial, industrial, agricultural, and eco-tourism development. The extent of the OIB's land is delineated in Figure 4. A representative of the OIB attended the first stakeholder meeting, but despite invitations further representation or comments on the Master Plan have not been achieved. Any future trail development must include consultation with First Nations.

Figure 4

2.4 PROVINCE OF BRITISH COLUMBIA

The province has a strong interest in facilitating trail connections as they provide healthy living opportunities for residents and enhanced experiences and destinations for visitors. The government's February 2007 Tourism Action Plan highlights the importance of establishing "a provincial trails program for both urban and rural trail users on Crown land."

Trails further generate interest from of a vast array of provincial agencies notably provincially controlled lands, recreation, agriculture and the natural environment. The following highlights the status of trails and these jurisdictional considerations:

2.4.1 Land Resource Management Plan

The Okanagan Shuswap Land Resource Management Plan (2001) states that it is "an integrated and strategic plan for an array of Crown lands and corresponding uses in the region". The Objectives and Strategies relating to trail use in the approved LRMP plan include the following:

Trail Construction shall:

- not disrupt natural drainage patterns leading to erosion, mass wasting, and debris torrents.
- re-route or relocate trails that cause conflicts with private landowners.
- mitigate impacts of trails on sensitive lands.
- promote public education and awareness on how to minimize impacts from recreational use on the land base.
- avoid indiscriminate off road and off trail use in grasslands.

Recreation Management Zones - The RMZ's are areas where recreation values relate to specific "regionally significant trail corridors" and "intensive recreation" areas (within which networks of unmapped trails exist). Regionally significant trails are to be managed for recreation use, opportunities and experiences with specific objectives that:

- designate options for either motorized or non-motorized use;
- shall maintain 200 m wide corridors for Category A listed trails and have specific harvesting guidelines ;
- may have seasonal access restrictions;
- move towards GPS'ing all trails; and
- manage for viewsapes along trails.

Goal 1 and Goal 2 Area Management Regimes - The protected areas, identified in the LRMP as Goal 1 and Goal 2 Areas, are intended to protect the lands as they do not permit commercial logging, mining, and energy exploration and development. Other existing activities will continue to be allowed, subject to the management plan for each protected area in accordance of the *Park Act and Regulations*. The Goal

areas (also mapped in Figure 4) and trail related directions include the following:

Oliver Mountain:

Although the Plan originally indicated that a moto-cross track be established in the vicinity of "Secrest", the lands were later turned into portions of White Lake Grasslands Protected Area. As a result motorcross/off highway vehicle riding on the Goal 2 site is discouraged and while the LRMP directions indicate a need to determine alternate sites.

South Okanagan Grasslands:

South Okanagan Grasslands was a Goal 1 site that is now Protected Area and now has a management plan

2.4.2 Recreation Trails Strategy for British Columbia

The province has recently completed the preparation of a Recreational Trails Strategy for British Columbia that is intended to be "*a multi-phased approach to developing a trails strategy in the province*". The first phase of the four phase process involved extensive research into successful models from other jurisdictions as well as analysis of the results of a widely distributed survey of trail users and managers. The second phase, involved the development of the Strategy with input from a stakeholder and multi-agency committee and local communities.

The Strategy is to ensure that BC offers "*a world renowned network of sustainable trails accessible to all, which foster social, cultural, health, economic and environmental benefits for trail users, communities and the province*". The Strategy's directions provide a framework to ensure collaborative planning, good governance, sustainable resources, effective management, comprehensive information, and strategic marketing together with an implementation plan.

The Trails Strategy is intended to assist in prioritizing the use of Crown land for recreational activities together with resource uses and development. In particular, for Oliver there are directions to include a trail development from Penticton to Osoyoos.

2.4.3 Developing Trails in Farm and Ranch Areas

In 2005 the Ministry of Agriculture and Lands printed *A Guide to Using and Developing Trails in Farm and Ranch Areas*. The Guide is intended to provide trail planners, developers and managers suggestions and recommendations on how to reduce impacts on agricultural lands. In particular, the Guide identifies the issues and opportunities on how to develop a positive working relationship with the affected agricultural

community. A Trail Development Tool box is provided that outlines design solutions that can mitigate possible conflicts. The Toolbox recognizes the importance of:

- ensuring that trail users are the most appropriate for the type of trail and trail location;
- locate trail routes that go around rather than through farm and ranch lands and when not possible consider alternative routings to accommodate seasonal needs of the agricultural use;
- leave visual and physical barriers between the trail and the agricultural use (fencing, physical separation, water features, vegetation and elevation); and
- install a well designed and coordinated sign system that provides information about trail use behaviour, trail information, interpretation and advertisement.

The Guide also considers management solutions to limit the conflicts between the user groups, through the instituting of the following:

A Code of Conduct - Inform users about responsible trail use in agricultural areas;

Trail/Trailhead Closures – Institute during intense or sensitive farm operations;

Volunteers - Ensure safe use of the trail during periods of active farm use)

Communication with Landowners/Ranchers/Farmers - Keep the agricultural users involved in the planning, and design and management of proposed trail;

Long Term Management - Maintain contact with the agricultural community and work with them to resolve issues (this may involve a level of enforcement); and

Maintenance – Ensure reliable and timely trail maintenance to minimize trial impacts.

The Guide also provides information on how to implement the tools and management solutions.

2.4.4 Kettle Valley Railway

During the early 1920's to the mid 1940's the Canadian Pacific Railway (CPR) constructed a portion of the Kettle Valley Railway from Okanagan Falls to Osoyoos. The rail line operated until 1977 and then the rails were removed from the right of way. In 1989, the Ministry of Transportation and Highways purchased a 1 kilometre section of the right of way near the

north end of Osoyoos Lake, and also a 1.5 km section through the Town of Oliver. In 1990, the provincial government, through BC Lands, acquired the remaining portions of the right of way (as a gift from CPR).

A 2003 report entitled *Management Strategy: Abandoned KVR Right of Way in South Okanagan* identifies the following 13 broad principles. The following seven principles directly relate to future trail use:

1. Continuous corridors for public benefit.
2. Consultations and negotiations with First Nations.
3. Protection of agricultural values.
4. Protection of environmental values (environmental values high where the right of way passes through the Vaseux-Bighorn Wildlife Service).
5. Recreational use can complement related uses on adjacent lands.
6. Compatibility with other land use plans.
7. Encouragement of local management.

It is also understood the Ministry of Culture, Tourism and the Arts has designated the KVR Crown lands from Kaleden to Osoyoos, therefore if an expression of interest is submitted for a portion of these lands they must get approval from the Ministry.

The Management Plan includes directions for the KVR right of way in the Oliver area. The following comments relate to the potential for trail use for the Management Units #1 to #4 (inclusive):

- The a kilometer of right of way at the north end of Osoyoos Lake and another 1.5 km through the Town of Oliver is owned by the Ministry of Transportation and Highways – the remainder of the right of way is managed by Integrated Land Management Bureau (formerly BC Lands);
- High environmental values associated with the adjacent South Okanagan Wildlife Management Area;
- Need for local roadways and Highway 97 realignment;
- Interim recreation use is unlikely due to the proximity to the existing trail system along the dike;
- Consideration for an interim use as a community park;
- Continuity of the recreational use is interrupted due to the lack of a bridge just south of Vaseux Lake;
- Osoyoos Indian Band has significant interests in the right of way that crosses the corner of I.R. #1; and
- Agricultural and transportation uses should be balanced with recreational use.

The Management Plan indicated that the allocation of the KVR lands should be *“based on societal needs, with the first priority being given to Provincial needs, the second community needs and the third to those of private parties”*. The lead agencies (in the Oliver area’s case ILMB and MoTI) must consult with other stakeholders regarding the use of the KVR

lands. The strategy should be reviewed periodically and further major proposals could also trigger such an update (highway, trail or pipeline development).

2.4.5 Ministry of Environment

The Ministry of Environment is particularly interested in trail development as several of the existing or proposed trail alignments may have impact on environmentally sensitive areas, parks and protected areas and/or flood protection systems in the Oliver area. The following divisions of the Ministry have expressed interest in the master planning process:

2.4.5.1 Environmental Stewardship

This division's interest is in maintaining and restoring the natural diversity of provincial ecosystems and fish and wildlife species and their habitat; providing park, fish and wildlife recreation services and opportunities to British Columbians and visitors. The following indicates the particular interests of the Ecosystems Branch and BC Parks:

Ecosystems Branch - In the planning and management of trails it is important to recognize that the South Okanagan area has many areas of environmental sensitivity, many of which are designated parks. This branch of the MOE is the first point of contact for development that may disrupt natural areas and/or habitats. The MOE reviews the proposals that may have impact on protected areas/*Land Act* reserves, and where applicable other referring/affected provincial agencies. The Ecosystem's Branch considers proposals in accordance with land use planning directions (LRMP), overall protected area strategic plans, and a broad range recreation and conservation values.

A recent project of the MOE is the Sensitive Environmental Inventory – Okanagan Valley: Vernon to Osoyoos 2000-2007 whereby ecological significant lands are designated as very high biodiversity values, including many at-risk species and ecological communities that represent ecosystems unique to Canada. The SEI provides general management directions relating to future trail development as follows:

- Delineate buffers and corridors around sensitive ecosystems.
- Avoid or mitigate impacts of new trail development on the ecosystems.
- Restrict motorized users (to trails) and mountain biking (to trails)
- Closely monitor trails for invasive plants.

- Restrict recreational access through designated trails, signage, seasonal use restrictions, etc.
- Ensure fences limit access but not obstruct wildlife movements.
- Design trails in accordance with best management practices.

An overview of the SEI for the Oliver area is provided in Figure 3.

Environmental Stewardship – This division oversees the overall management and establishment of parks, ecological reserves and protected areas in accordance with the *Protected Areas of British Columbia Act; Park Act; Ecological Reserve Act; and Environmental and Land Use Act*. No activities may occur within these areas without Environmental Stewardship's involvement and authorization.

The Oliver area is home to the following environmental management areas as delineated in Figure 3:

1. *South Okanagan Grasslands Protected Area* - The primary role of the 9,364-hectare South Okanagan Grasslands Protected Area is to protect the dry grasslands and open forests that represent one of the four most endangered ecosystems in Canada.
2. *White Lake Grasslands Protected Area* – These 3,741 hectares of land have long been a priority for conservation efforts in the Okanagan. The primary role of the protected area is conservation: to protect the very hot and dry grassland, open pine forest and alkali ponds and rock outcroppings of the Southern Okanagan Basin ecosystem. The protected area captures the full elevational gradient from lakeshore to mountaintop and provides important habitat for many of British Columbia's red and blue-listed wildlife, plants and plant communities. White Lake Grasslands Protected Area is contiguous with other protected conservation lands around Vaseux Lake, thereby forming a significantly large conservation area.

BC Parks has indicated that once Oliver Mountain (in accordance with the LRMP Goal areas) is established as a provincial park, the management would likely decrease the number of trails and the diversity of users.

In discussions with BC Parks it was also indicated that in relation to trail development and management, they have the following recreational mandate:

- permit non-motorized recreation including hiking, biking and equestrian.
- They shall not impact conservation goals in the White Lake area.
- focus enhancements on acceptable existing uses, rather than expansion.
- Utilize best practices for trail development (i.e. White Lake access through Covert Farms).

2.4.5.2 Water Stewardship

This division protects community water supplies including dike and dam safety, and reducing impacts of floods and droughts, specifically:

- *Encourage sustainable use of water resources to ensure human and ecosystem needs are met.*
- *Raise awareness of the value of water, and encouraging water smart activities and actions across jurisdictions and agencies.*

The Division follows Living Water Smart: British Columbia’s Water Plan, launched in June 2008 is intended to keep water healthy and secure for the future. The Goals and Objectives of the plan are as follows:

Goals	Objectives
Safe	Minimize impacts of floods and dam failures Safe and reliable community water supplies
Sustainable	Integrated water governance and planning that foster healthy ecosystems and sustainable use Water management activities and decisions balance human and natural values Integrated and accessible information on British Columbia’s water resource Leading Science informs decision making
Goals	Objectives
Valued by All	British Columbians recognize the many values of water and share responsibility for stewardship Water Stewardship is integrated into decisions and actions of other agencies and entities

The existing International Hike and Bike Trail is located, in part along the Okanagan River Flood Protection Dike that is a component of the “Okanagan Lake Regulation System (OLRS)”. The OLRS is a multi-lake, multi-purpose regulation system owned by the Province

of British Columbia, and managed and operated on behalf of the province by the Ministry of Environment. The OLRs regulates lake levels and river discharges which impact three regional districts, nine municipalities and four First Nations. Since the early 1900's it has been recognized that effective integrated management of Okanagan Lake and River is critical to ensuring a viable economic base, maintaining a healthy natural environment and enhancing the social betterment of valley residents and visitors. Current management objectives include flood control, water supply, fisheries, aquatic and riparian environmental values, recreation and tourism. Additional information on the history and works included in the System is attached as Appendix "E"

2.5 GOVERNMENT OF CANADA

2.5.1 Environment Canada - Canadian Wildlife Service

The mandate of the Canadian Wildlife Service is to *"conserve wildlife and the ecosystems that they are a part of, with a particular focus on migratory birds and Species at Risk"*. The Canadian Wildlife Service has significant interest in the Oliver area and any development that may be within or adjacent to Vaseux National Wildlife Area and/or other South Okanagan conservation areas.

In 2006 the Canadian Wildlife Service completed the Draft Vaseux Lake Basin – Bighorn National Wildlife Area Management Plan. The plan was prepared to incorporate conservation directions with a strategic management plan. The Vaseux-Big Horn area includes both Canadian Wildlife Service lands, and conservation holdings of agencies being part of the South Okanagan Similkameen Conservation Program (SOSCP). The SOSCP works towards collaboration to secure and be stewards of the habitat and facilitate public education, research and community outreach (see next section). The following are highlights of the Draft Management Plan that relate to the values of the area:

- one of the most biologically diverse regions in Canada;
- there are Species at Risk (SAR) in the South Okanagan Similkameen area, specifically including 8 species of invertebrates not found elsewhere in the world; 40 species of plants and animals listed as extirpated, endangered, threatened or of special concern under Canada's SAR Act or Committee on the Status of Endangered Wildlife in Canada; and more than 130 species on the Red and Blue lists;
- Vaseux Lake is a Migratory Bird Sanctuary (est. 1923), where the west side is for the most part undisturbed by human intrusion; and
- importance in the area of cultural and heritage sites and features (homestead sites, gold mining sites, KVR and historical trail and travel routes such as the Fur Brigade Trail and Dewdney Trail).

In considering future trail development the Management Plan specifically identifies the concern with human encroachment into the areas:

- Soil disturbances
- Introduce and spread invasive plants
- Disturb native plants and wildlife
- Sensitive environments and landscape features

A representative of Environment Canada – Canadian Wildlife Service further provided additional input on the prospect of future trail alignments within the Vaseux Basin. There is concern with the potential for a trail following the former KVR alignment on the west side of Vaseux Lake by introducing unmanaged human activity (without day-to-day enforcement) that would compromise the integrity of the wildlife conservation areas and bird sanctuary.

2.5.2 Parks Canada

National parks are established to protect and present outstanding representative examples of natural landscapes that occur in Canada's distinct natural regions. Parks Canada is responsible for both protecting ecosystems and managing them for visitors to understand, appreciate, and enjoy in a way that doesn't compromise their integrity. National parks provide a setting for tuning into nature, learning about it, appreciating it, respecting it and pledging to protect it. In many cases the existence of trails may provide the pathways to experience a national park.

In 2003, a Memorandum of Understanding (MOU) between Canada and British Columbia committed the two governments to cooperate in assessing the feasibility of a national park reserve in the South Okanagan – Lower Similkameen. The feasibility study has included extensive technical studies and consultations to produce a draft park proposal built on provincial Protected Areas (i.e. South Okanagan Grasslands) west of Oliver, and existing federal conservation lands around Vaseux Lake.

The proposal represents an exceptional opportunity to showcase the natural attributes of the Interior Dry Plateau natural region, and the unique heritage values of the South Okanagan – Lower Similkameen in Canada's national park system. The outcome of the feasibility study is unknown at this time."

2.6 SOUTH OKANAGAN SIMILKAMEEN CONSERVATION PROGRAM (SOSCP)

The SOSCP was formed in July 2, 2000 by government, non-government, First Nations, universities, and industry with the intent to *"coordinate conservation efforts to maintain the rich biodiversity of the area, including species at risk and a viable ecological corridor between the deserts of the south and the grasslands to the north"*. The SOSCP has grown over the past 8 years to include 41 partner

organizations (refer to Appendix B). The SOSCP's vision is to work towards "A healthy environment that sustains the diversity of indigenous plants and animals while enriching people's lives". The SOSCP's Strategic Plan and 2007 Annual Report highlights the organizations six strategies that are coordinated and implemented by corresponding teams comprised of the various partners, as follows:

Science – applying scientific knowledge

Outreach – involving the community in conservation

Stewardship – voluntary caring for the land

Traditional Ecological Knowledge – applying First Nations' knowledge and ecological heritage

Land Use Planning – assisting in land use decisions

Habitat Securement – securing critical habitats.

The following conservation organizations that have land holdings within the study areas each have certain management guidelines for trail use within the area:

- The Natures Trust of British Columbia*
- Nature Conservancy of Canada
- Ducks Unlimited

*** Note that the Nature Trust of British Columbia does not permit advertisement or posting of trails; nor improvement of trails on its South Okanagan holdings.**

2.7 SUMMARY

The various stakeholders in the Oliver area have identified directions for future trail planning and development. It should be recognized that the directions might be complementary or opposing. The following provides a brief summary of factors that should be measured in the preparation of the Master Plan specific to existing and future trail development, management and standards:

Trail Routing - The following summarize the major considerations that should be addressed in the routing of the Master Plan's trail system:

- interconnect residential, recreation, cultural, economic, tourist and community destinations within the Oliver area;
- connect to other trails, activities, facilities and destinations outside of the Oliver area;
- be situated on existing right of ways such as existing or former utility, irrigation or transportation corridors;
- discourage new trails through agricultural areas rather have trails that go around not through farm and ranch lands and when not possible consider alternative routings to accommodate seasonal needs of the agricultural use;
- include upgraded secondary roads;
- connect cultural and heritage sites and features;

- re-route or relocate trails that cause conflicts with private landowners;
- Avoid trail development following the former KVR alignment on the west side of Vaseux Lake. (note that this falls outside the study area – but likely could be considered as a regional connector to Okanagan Falls and Penticton);
- avoid indiscriminate off road and off trail use in grasslands;
- consider potential plans regarding the potential for a highway corridor through this protected area (at some point in the future);
- Respect First Nations territory;
- Designate alignments for either motorized or non-motorized use; and
- Prohibit trail access in sensitive areas including the grasslands, and antelope brush ecosystems.

Trail Standards - The Oliver area trails should incorporate the following:

- Design trails in accordance with best management practices and established standards;
- universal access construction;
- Barriers to prohibit access to sensitive environments and landscape features;
- Apply environmental best practices such as:
 - Delineate buffers and corridors around sensitive ecosystems;
 - Not impact tree root systems;
 - Not cause soil erosion or compaction problems;
 - Maintain site hydrology;
 - Avoid hibernacula; and
 - Use fences to limit access but not obstruct wildlife movements.
- Apply agricultural best practices:
 - consult farmers to mitigate the impact of trail users on farm operations.
 - include specific harvesting guidelines and if appropriate seasonal access restrictions;
 - Leave visual and physical barriers between the trail and the agricultural use (fencing, physical separation, water features, vegetation and elevation); and
 - Sign existing trails to make users aware of their responsibilities, farming activities and practices.

Trail Management

- promote public education and awareness on how to minimize impacts from recreational use on the land base;
- Move towards GPS'ing (Global Positioning System) all trails;
- Manage viewscapes along trails;

- Install a well-designed and coordinated sign system that provide information about trail use behaviour, trail information, interpretation and advertisement;
- Ensure that *trail users* are the most appropriate for the type of trail and trail location;
- Incorporate seasonal restrictions to protect ecosystems and wildlife;
- Continue to monitor trails for invasive plants; and
- Restrict recreational access through designated trails.

SECTION 3 - MASTER PLAN

The October 2007 stakeholder workshop recommended that the Oliver area should develop a Master Plan for trails within the community. This section fulfills this direction, providing a comprehensive plan for future trail development within the Oliver area.

3.1 GOALS OF THE OLIVER AND AREA TRAIL NETWORK

The stakeholder workshops developed and refined the following goals for the Oliver area trail network:

- a) Be a multiuse system
- b) Provide an experience that is safe secure and simple to use
- c) Showcase the aesthetic and recreational character of the community
- d) Complement and enhance local businesses
- e) Ensure a positive interface with agriculture
- f) Offer a multigenerational experience
- g) Enhance and not compromise the natural environment
- h) Provides educational and interpretative opportunities
- i) Have strong community support
- j) Be constructed to be sustainable overtime.
- k) Connect to other communities.
- l) Provide a long term implementation plan
- m) Complements recreational programs and sporting events
- n) Facilities healthy living in the community

The Master Plan has been developed in accordance with these directions.

3.2 RECOMMENDED TRAIL LOCATIONS

The alignment of future trails and connections were developed from comments received from the public as well as input from community, business and government stakeholders. The consulting team also further informed these recommendations by conducting on-site inspections of existing and prospective trail routings to determine appropriate locations for trail enhancements and connections, together with trail infrastructure and/or significant construction works. The stakeholder workshops also indicated a desire to establish a hierarchy of trails that would include: a valley-bottom hike and bike loop trails, pedestrian and cycling friendly roads, front country pathways and back country logging roads and trails.

Figure 5 – The Oliver and Area Master Plan identifies and categorizes the proposed trail network for the Oliver area. In addition, the following table provided outlines each the trail type, reference to Figure 5 and its intended purpose:

Insert Figure 5

Table 1 – Trail Locations

Reference The following numbers correspond with Figure 5	General Location	Purpose						
		commuter	scenic	winteres	orchards	Road cycle	Regional connection	Recreation experience
OLIVER HIKE AND BIKE TRAILS: The trails existing and proposed in the Oliver area that will comprise the major routes will need to be constructed of a high standard of construction, be paved and provide a width that will allow for multi-use travelers.								
1-2	Int'l Hike and Bike Trail (from Vaseux Lake south to Hwy 97)	*	*				*	*
2-3	Int'l Hike and Bike Trail located on the west side of the Okanagan River dike (Hwy 97 south to 350 th)	*	*				*	*
3-4	Int'l Hike and Bike trail located on the west side of the Okanagan River dike (350 th south to #326 th Road)	*	*				*	*
4-5	Int'l Hike and Bike Trail (from #326 th Road south to Black Sage)	*	*	*			*	*
5-6	Int'l Hike and Bike Trail (from Black Sage south to Lake Osoyoos lookout)		*					*
7-8	Town Irrigation Corridor (103 rd from Hwy 97 to 350 th through neighbourhood)	*	*	*	*			
8-9	Town Irrigation Corridor (350 th south to 342 nd)	*		*	*			*
9-10	Town Irrigation Corridor (342 nd south to #7 Road/328 th)	*	*	*	*			*
10-11	Town Irrigation Corridor (#7 th Road to 326 th)							
11-12	Town Irrigation Corridor ((328 th to 310 th /#18 Rd)	*	*	*	*			*
13-14	KVR - Vaseux Lake to Hwy 97	*	*					*
15-16	KVR – 298 th /#22 Rd to Osoyoos	*	*		*		*	*
17-18	End of 378 Ave to Hike and Bike and 378 Ave (Buchanan)	*	*					
25-26	Dike Trail east side (296 so. to Osoyoos Lake)		*					*

SECONDARY OLIVER HIKE AND BIKE TRAILS: The Secondary Trail Routes are short connectors between Major Trails and/or Road Routes and they are multi-use but expected to have less volume than more major routes.								
19-20	KVR west to Secrest Rd	*	*					*
21-22	370 th (Hike and Bike to 87St)		*					*
22-23	Dike Trail east side (87St to 79 th)		*					*
24-25	Dike Trail east side (310/#18 Rd south to 296 th)		*					*

Table 1 – Trail Locations

OLIVER FRONT COUNTRY TRAILS								
Trails primarily on Crown land. Need directional signage, trailhead information and long term management program								
44	Oliver Mountain		*					*
45-46-35- 37-12	Golden Mile Trail		*	*				*
OLIVER BACKCOUNTRY TRAILS:								
Trails primarily on Crown land. Need directional signage, trailhead information and long term management program.								
47	White Lake Grasslands/McIntyre Bluff		*					*
48	Sawmill Lake/Madden Lake/Ripley Lake		*					*
49-10	TKO		*					*

3.3 SPECIAL TRAIL AND ROAD ROUTES

An important component of the Master Plan is to provide trails that will showcase the community, local businesses and the agricultural character of the Oliver area from an economic and scenic perspective. The Master Plan has specifically considered a range of routes for residents and visitors alike. The routes identified below and contained within Figure 6 are intended to promote the offerings of the Oliver area and provide an attractive recreational and interpretative experience. The following provides a brief description of the identified routes:

1. **Oliver Training Route** – An all-inclusive 45 km cycle route traveling on roads within the Oliver area.
2. **Oliver Cycle and Taste Tour (North)** – This 13 km road cycle goes past wineries on the east side of Tuc El Nuit Lake to Island Road then back to the proposed Wine Village via Highway 97 or the Hike and Bike Trail.
3. **Oliver Cycle and Taste Tour (South)** – This is twice the length (30 km) and more challenging than the northern route as it goes along Black Sage Road, to Hwy 97 then back on 7th Street to the proposed Wine Village.
4. **Oliver Cruise and Taste Tour** – This is a casual cycling route on both roads and paved trails. It is a route that maximizes the number of wineries en route. It is approximately 22 km.

Insert Figure 6

5. **Orchard Cycle Tour** – A 24-27 km cycle around the west side orchards (one route does a loop around 87th Street, while the other uses the proposed Irrigation Canal trail).
6. **Hike and Bike Regional Trail Connector** – Approximately 29 km through the Okanagan River Valley.
7. **Golden Mile (with and without the Irrigation Canal)** – This is a scenic hike above and through the west side vineyards and orchards ranging from 8-10 km.
8. **River and Wine Walk** – This is a brisk 8 km walk along the Hike and Bike Trail and 87 Street wineries.
9. **Tuc El Nuit Walker** – A 7 km walk around Tuc El Nuit Lake and past the local wineries.

Oliver also has a few areas with more concentrated trail experiences for equestrian, mountain biking and nature hikes, notably:

Mountain Biking: Oliver Mountain, Sawmill Lake, and Mount Baldy

Horseback Riding Areas: Sawmill Lake, White Lake

Hiking Areas/Nature: Oliver Mountain

3.4 LAND USE CONSTRAINTS AND RECOMMENDED PROTOCOL

The process to develop the Oliver and Area Master Plan was intended to determine proposed trail routings as well as identify and acknowledge the challenges to be addressed in implementation. As indicated in previous sections of this document, the Oliver area is very conducive to trail development given its location, terrain and climate, however, the community also has many land use interests that will need to be both acknowledged and balanced. This section identifies the constraints as well as the recommended procedures that should be followed in the future. Table 2 identifies the trail routings and the potential land use interests:

Table 2 –Trails and Land Use

Trails		Environmentally Sensitive/Protection or Conservation Area	Through Agricultural	Through Residential	Okanagan River Flood Protection Dike	Abandoned Kettle	Provincial Road	Local Road	Private Property	Infra structure (Bridge)	First Nations	Historical Significance	Irrigation Canal	Establish Trail Tenure
1-2	Int'l Hike and Bike Trail (from Vaseux Lake south to Hwy 97)	*			*		*		*	*				*WS
2-3	Int'l Hike and Bike Trail located on the west side of the Okanagan River dike (Hwy 97 south to 350 th)				*					*		*		*WS
3-4	Int'l Hike and Bike trail located on the west side of the Okanagan River dike (350 th south to #326 Road)				*							*		*WS
4-5	Int'l Hike and Bike Trail (from #326 Road south to Black Sage)		*	*	*									*WS
5-6	Int'l Hike and Bike Trail (from Black Sage south to Lake Osoyoos lookout)	*	*		*						*	*		*WS
7-8	Town Irrigation Corridor (103 rd from Hwy 97 to 350 th through neighbourhood)			*									*	*TO
8-9	Town Irrigation Corridor (350 th south to 342 nd)			*									*	*TO
9-10	Town Irrigation Corridor (342 nd south to #7 Road/328 th)		*										*	*TO
11-12	Town Irrigation Corridor ((328 th to 310 th /#18 Rd)		*										*	*TO
13-14	KVR - Vaseux Lake to Hwy 97	*	*	*		*	*	*	*	*		*		*CL
15-16	KVR – 298 th /#22 Rd to Osoyoos	*	*			*	*	*	*			*		*CL
17-18	End of 378 Ave to Hike and Bike and 378 Ave (Buchanan)		*		*			*				*		*WS
25-26	Dike Trail east side (296 south to Osoyoos Lake)		*		*									*WS
19-20	KVR west to Secrest Rd			*	*				*					*WS
21-22	370 th (Hike and Bike to 87St)				*									R

Table 2 –Trails and Land Use

Trails		Env Sensitive/Protection or Conservation Area	Through Agricultural	Through Residential	OK River Flood Protection Dike	Abandoned Kettle Valley	Provincial Road	Local Road	Private Property	Infrastructure (Bridge)	Historical Significance	First Nations	Irrigation Canal	Establish Trail Tenure
22-23	Dike Trail east side (87St to 79th)		*		*									*ES
24-25	Dike Trail east side (310/#18 Rd south to 296th)		*		*									
28-5-15	Black Sage Drive South (Orchard Grove Lane to Hwy 97)		*				*			*				
27-28	Black Sage Drive North (362nd Ave to Orchard Grove Lane)		*				*							
30-4	326 Ave/#9 Road to Hike and Bike		*					*						R
28-29	87 St from River to Orchard Grove Lane		*					*						R
29-24-50	87th Street from Orchard Grove Lane to 310/#18 Rd/Hwy 97)		*	*										R
8-33	350th (103 ^d to 123 ^d)		*	*				*		*				R
33-34-10	123 ^d /7 th Dr.		*					*		*				R
34-35	Old Golf Course Road		*					*		*				R
29-37	326 th from Hwy 97 west to Golden Mile (Tinhorn)		*					*	*					R
35-38	Fairview White Lake Road (portion of 350 th from Old Golf Course Road to Secrest)						*		*	*				R
38-39	Fairview White Lake Road (from Secrest north)						*							R
38-40	Secrest Road (from Fairview White Lake to Hwy 97)		*				*							R
27-41	Tuc-El-Nuit Lake Rd.		*	*				*				*		R
31-32	Miller Road (87 th to Black Sage)		*					*						R
10-36	123 ^d /7 th to Hwy 97		*					*						R
43-17	378 th Ave from Hwy 97 east to end		*					*						R
36-30	Hwy 97 from 123/7 th south to 326/9th						*							R
41-42	Hwy 97 (from Tuc-El-Nuit Rd north on the east side of Vaseux Lake)						*							R
44	Oliver Mountain	*								*				*CL
45-46-35-37-12	Golden Mile Trail		*						*	*	*			*CL
47	Fairview White Lake Grasslands/McIntyre Bluff	*	*						*	*	*			*CL
48	Sawmill Lake/Madden Lake/Ripley Lake						^							*CL
49-10	TKO						^							*CL

+ only one of the trail alignments is intended

^Crown land (provincial) interests.

CL – Crown Land

R – Public Road Right of Way

WS – MOE Water Stewardship

TO – Town of Oliver Irrigation Canal

The following outlines the details regarding the constraint together with a recommended protocol intended to proactively address the issue:

3.4.1 Environmentally Sensitive and/or Protected Conservation Areas

Figure 3 identifies areas of environmental sensitivity, protected parks and conservation areas. The Trails Master Plan has identified five areas where environmental concerns may be triggered relating to trail enhancement or expansion in the area of Vaseux Lake, the north end of Osoyoos Lake, McIntyre Bluff/White Lake area and Oliver Mountain.

The recommended considerations that should be recognized before moving forward with establishing trail corridors or enhancements within or immediately adjacent to these areas with environmental sensitivity is as follows:

Vaseux Lake – The Master Plan has indicated a need for a regional trail connection from Oliver to Okanagan Falls, Kaleden and Penticton. There are two probable alignments, the first running parallel to Highway 97 or the second through the use of the abandoned (and now provincially owned) Kettle Valley Railway right of way (west side of the lake).

The route along the west side of the lake travels through the Vaseux – Bighorn National Wildlife Area. The trail alignment is not supported by the Ministry of the Environment or Environment Canada (Canadian Wildlife Service) at this time as it would introduce human activity into recognized areas of environmental significance. The Ministry of Environment has indicated that prior to considering a public access trail in this area; the Regional District should develop a proposal for the Ministry that reflects the following conditions (perhaps they could revise a previous proposal):

- Establish a trial period of 5 years (3 years be too short a time) to analyze the impact of the trail;
- Present the proposal to the public during a town hall meeting (or other suitable forum) for the trail development;
- Ensure that First Nations groups are adequately consulted and involved in the review process;

- Ensure that CWS's concerns regarding impact on wildlife and plant life are mitigated;
- Allow for adequate signage and warnings at the start, finish, and along the trail as needed, alerting the public to the sensitivity of the area and any dangers they may face (rattlesnakes, etc.); and
- In terms of funding, the Regional District would bear all costs related to establishing and maintaining the trail, including costs for any improvements such as bridge construction, etc. The Regional District would also take responsibility for any liability.

The Regional District and their Rails to Trails Committee have not supported pursuing this trail corridor at this time due to the challenge and the expense of fulfilling senior government requirements.

The highway route, although perhaps more expensive from an infrastructure perspective and less attractive from a recreational experience, could be an alternative corridor although not without significant challenges related to terrain, land ownership and riparian habitat.

The Master Plan recommends not pursuing the Vaseux Lake connection until there is greater senior government support for the importance of providing an off-road route between Penticton and Oliver due to the challenges and cost. It is recommended, however, that the Ministry of Transportation and Infrastructure should be referred the Master Plan for their future planning efforts.

Osoyoos Lake –The north end of Osoyoos Lake is in part designated as the Hayne's Lease Ecological Reserve and the South Okanagan Wildlife Management Area, the South Okanagan Wildlife Protection Area and the Haynes Lease Environmental Reserve as well as lands restricting public access and controlled by The Nature Trust of British Columbia, The Nature Conservancy of Canada, and Ducks Unlimited and Ministry of Environment. Given the sensitivity of the land in this area it is recognized that there is only one trail alignment possible to link Osoyoos and Oliver. The corridor would be close to Highway 97, in the general location of the KVR line. At this time the Ministry of Highways and Infrastructure (MTI) owns a portion of the rail line in this location. Discussions with the RDOS, Town of Osoyoos, Osoyoos Indian Band, Integrated Land Management Bureau and the MTI should be held to fully explore the tangible options for establishing this valuable trail link.

White Lake/ Rattlesnake Lake and McIntyre Bluff – The White Lake/Rattlesnake Lake areas are part of the White Lake Grasslands Protected Area and therefore any future trail development and ongoing management is subject to approval by BC Parks. There are also small portions of lands immediately adjacent to the Protected Area and grasslands immediately surrounding White Lake that are controlled by The Nature Trust of BC or the Willowbrook Conservation Society (outside the study area). It should be noted that there is restricted access to trails in this area (private lands).

For those areas managed by BC Parks, new trail development or enhancements falls under their jurisdiction. Any external interests that would like to initiate trail development must apply for a park use permit or a volunteer agreement (both of which are legally binding). The south Okanagan Bike Club has successfully improved existing trails (rather than creating new trails). In this instance, a volunteer agreement between BC Parks and the group was executed ensuring that there was the appropriate insurance and liability coverage as well as minimal impact to the natural environment. BC Parks has indicated that in this area they are focused on improving existing trails (rather than expanding trails) to limit or reduce the impact of recreation use on the ecosystem values of the park. Putting in new trails is a much more involved process which would include impact assessments and possible archaeological assessments.

Oliver Mountain - Although it is anticipated that Oliver Mountain will become a Provincial Park, it is currently managed by the Ministry of Agricultural and Lands (Integrated Land Management Bureau). The area remains as Crown land. It is illegal to create new trails on Crown land without provincial approval.

3.4.2 Agricultural Lands

There are several new trail routings proposed to travel through or adjacent to agriculture lands particularly adjacent to the Okanagan River Irrigation Canal, and the KVR right of way. The provincial government's report *A Guide to Using and Developing Trails in Farm and Ranch Areas* as well as the recently drafted *Agricultural Area Plan*, both identify suggested best practices for the approval, design and ongoing management of trails within or adjacent to agricultural areas, as follows:

Consultation

- Consultation with affected farmers on the proposed location and type of trail.
- Develop mitigation plans to limit the impact of trail users on farm operations.

Design

- Provide a physical barrier and or natural separation between the agricultural use and the trail through landscaping, ditches or fencing.
- Install signs that provide important information about trail use in agricultural areas such as a code of conduct, possibility of trail closures, notice of rural traffic characteristics and safety considerations (in relation to farming activities and practices), advertise local agriculture offerings and mark agricultural heritage and historic points of interest.

Management

- Establish enforcement and maintenance program for the trail use.

3.4.3 Residential Areas

The Town of Oliver has indicated that typically new local trail connections are installed by new developments as a condition of subdivision approval (to service the new subdivision and surrounding areas). These developments (and therefore the trail alignment) will be subject to the statutorily required public review process and require a secured public right of way.

The proposed Irrigation Canal trail should be subject to community consultation as well as adjacent agricultural interests. The submissions received through such consultation should further inform the location and design of the proposed trail alignment.

3.4.4 Okanagan River Flood Protection Dike

The following Management Objectives have been identified by Water Stewardship for the Okanagan Lake Regulation System. Within the Okanagan there are a number of competing consumptive (agricultural and municipal) and non-consumptive (recreation, aesthetic and fisheries) uses of the valley's limited water resources. The often conflicting requirements of these uses, combined with variability and uncertainty of water supply, has led to the establishment of a number of management objectives for the OLRs. These objectives include:

1. Flood Control: Flood control benefits related to both surface and ground water are provided to low lying properties around Kalamalka/Wood, Okanagan, Skaha, Vaseux and Osoyoos Lakes, as well as properties along Okanagan River between Penticton and Osoyoos Lake.

2. Water Supply: Water stored in Okanagan Lake and other valley lakes supports irrigation, domestic and industrial usage in a large of number communities throughout the Okanagan.
3. Fisheries Values: Flows in Okanagan River are managed for spawning sockeye salmon and resident fish, while lake levels are managed for shore spawning Kokanee. Okanagan sockeye are one of the two largest remaining sockeye runs on the Columbia River.
4. Aquatic and Riparian Habitat: Flows are managed to preserve in stream and riparian values in Okanagan River and associated oxbows during period of extended droughts.
5. Recreation/Navigation/ Tourism: The levels of the mainstem lakes and river are regulated in a manner which is cognizant of the economic and social importance of water based recreation and navigation to the valley's tourism industry.
6. Okanagan Floating Bridge: Okanagan Lake levels must be maintained within the accepted tolerance levels of the floating sections of the new bridge.
7. Dilution Requirements: Minimum flows are maintained in Okanagan River to satisfy dilution requirements of waste water treatment plant discharges.

In summary, the management of the Okanagan Lake Regulation System is a delicate balance between a broad range of social, economic and environmental issues. In the face of competing interests the system managers must have the technical knowledge, experience, judgement and confidence to manage the system effectively.

3.4.5 Kettle Valley Railway Right of Way

The provincial government is currently in the process of further defining the future of the KVR right of way (refer to Section 2.4.4). At this time there is no certainty as whether the former rail corridor could be utilized for trail development.

3.4.6 Provincial Highway and Provincially Maintained Roads

The province maintains roads outside the Town limits, including: Black Sage Road, White Lake, Tuc El Nuit, 87th, 7th, Old Golf Course, etc. The Ministry of Transportation and Infrastructure will require submission and approval of a Provincial Public Highway Permit or any anticipated improvements or crossings. The type of work or anticipated access, structures or special events must be identified with their specific location

and detailed specifications. The application form is attached as Appendix "C".

3.4.7 Local Road

The Town of Oliver maintains all roads within its boundaries, except for Highway 97, which is a provincial highway. There are currently no budget allocations for any bike widening on the in-town portion of Tuc El Nuit drive. The Town will be initiating planning and design work this winter for 350th, focusing on the merits of adding space for bicycles. If this bike lane were added, it would be at the expense of on-street parking, which Council may be hesitant to approve.

3.4.8 Significant Infrastructure Investment

There are portions of the proposed trail alignments that may need significant infrastructure investment, particularly for the crossing of watercourses. The following improvements have been recognized as locations that will likely require significant financial investment:

- South end of Vaseux Lake (bridge or highway widening along lake);
- Irrigation Canal (bridges)
- End of 378 Ave to Hike and Bike and 378 Ave (Buchanan) (bridge)

3.4.9 Historic Significance

Existing and proposed trails within the Oliver area come close to several historically significant sites including the Brigade Trail, Haynes Ranch, Fairview Townsite, and other local areas of importance. Future trail and route planning should include these important destinations and/or historical signage. The following provides a brief overview of these locations:

Haynes Ranch: A portion of the lands along the northern most point of Osoyoos Lake (part of a Wildlife Reserve) includes the historic Haynes Ranch. The International Hike and Bike Trail and Black Sage Road skirt this property. The Haynes family had been early settlers in the area and the name of a long forgotten terminus of the Kettle Valley Railway Okanagan Branch.

Fairview Town Site: Immediately west of Oliver, the abandoned townsite of Fairview still exists, yet with few reminders of its heyday other than an abandoned churchyard. From the late 1860's until the early 1900's it was a vibrant town supporting surrounding mining activities. At the turn of the century to the start of World War I, the mining claims began to stagnate and the community's population reduced from 500 only a handful. When Oliver started building in the 1920's, the serviceable buildings from Fairview were slipped five

miles down the hill to the new settlement. The site still is home to interpretive signage and a spectacular view of the valley. The Golden Mile Trail, Old Golf Course Road, 350th/Fairview Road, Fairview White Lake Road all are in close proximity to the former townsite.

Brigade Trail: In 1811 the post of Fort Okanagan was established on the US portion of the Okanagan River, approximately one mile upstream from the confluence with the Columbia River. The following year the post became the terminus of the Brigade Trail where goods (primarily furs) were collected in Kamloops and packed south through the Okanagan Valley to Fort Okanagan where it then traveled by boat to the coast. In the late summer supplies were then transported back to the interior of BC. The Brigade Trail existed for approximately 35 years, until our government indicated a preference for an all-Canadian route.

In the late 1860's-early 1870's a small portion of the Brigade Trail also became a spur of the Dewdney Trail, running from the Fraser Valley to East Kootenay known as the Osoyoos Post.

Irrigation Channel: In 1918, in anticipation of returning veterans, the province passed the *Soldiers' Land Act*, which laid the foundation for the South Okanagan Lands Project (SOLP). The Project involved the purchase of a large tract of land and the construction of an irrigation canal commencing with an intake dam at the base of McIntyre Bluff and continuing the laying of twenty -three concrete lined miles of the main canal installed en route to the Canada/US Boundary. The irrigation canal is eighteen and a half feet across the top, five feet deep with a large pipe that goes through town from the east to the west side of the valley (refer to Figure 3).

SOLP was originally managed and financed by the Provincial government but in 1963 the Oliver and Osoyoos Fruit Growers' Association formed the South Okanagan Lands Irrigation District (SOLID) and operated the system until 1989 when the Towns of Oliver and Osoyoos took control of the system and right of ways. At important trail connection is proposed for the Irrigation Canal.

Okanagan River Flood Protection: The canalization of the Okanagan River was completed in 1958 to prevent the flooding of low-lying lands. The dike that runs from McKinnon Bridge south to Osoyoos Lakes facilitates the International Hike and Bike Trail.

Town of Oliver: The Town began to grow at the end of the Second World War as people came to work on the irrigation canal project and develop the lands with orchards. As mentioned, the Town has several buildings from the Fairview townsite. The downtown is the central point of origin and destination for of the proposed trails, rural roads and routes.

Kettle Valley Railway: In 1923, the KVR arrived in Oliver together with new growth including warehouses, packinghouses and storage sheds. The rail line was abandoned in 1977, however, the Town was dedicated the train station which was then refurbished as the visitor centre. Portions of the KVR right of way are being considered for future trail expansion, notably at the southern and northern ends of the study area.

3.4.10 Osoyoos Indian Band

The Osoyoos Indian Band must be consulted with regard to any proposed trail developments within the area.

3.4.11 Establish Trail Tenure

An important objective of the Master Plan is to not only identify existing and proposed trail alignments but also ensure that the trails will be secured in perpetuity. The majority of the trails within the Oliver area are located either on Crown owned, Town owned land or private lands (which includes the Nature Trust of British Columbia). Crown owned land includes land that is currently allocated for resource, agriculture or grazing uses, park or protected areas, flood protection works (dikes), highway right of ways and the former KVR line. Town owned lands include the Irrigation Canal, parks and local road right of ways. Private lands include protected areas and developable lands. The following highlights the process that should be followed to secure the trail use on these public lands in perpetuity:

Crown (provincially owned) Lands - It is recommended that the trails on Crown land be established under Section 65 of the *Forest and Range Practices Act* (unless already part of a provincial park). Trails are deemed "established" by an order of the Minister under s. 65 of the *Forest and Range Practices Act*. The trails are typically mapped for public awareness and managed through agreements with a local recreational organization (or municipality). Established trails must receive consideration in resource planning; however, establishment of a trail does not guarantee conservation in the same sense as a park or protected area and not intended to unduly impact industrial uses. The Ministry of Tourism, Culture and the Arts can enact legal management objectives for "established" trails. A forest licensee is required to develop and submit for

approval, strategies or results that clearly indicate how they will ensure the trail objectives will be met where there may be impacts from forestry activities.

There are other clear advantages to achieving the authorization or establishment of trails, notably:

- Ensures trails and recreation opportunities are considered in land use planning processes;
- Provides opportunities for integrated forest management and balance of land uses;
- Makes it easier to secure funding and resources for an authorized trail network;
- Provides a platform for partnerships and cooperative management amongst organizations;
- Secures government support for trail initiatives and management;
- Facilitates commercial recreation tenure and permit awarding processes;
- Ensures environmental and risk management considerations are addressed in trail planning and management; and
- Ensures trail construction and maintenance is not carried out unlawfully.

At this time the Ministry of Tourism, Culture and the Arts is the provincial agency that is responsible for maintenance and management of trails on Crown lands (outside parks and protected areas), however, they do have the ability to delegate this authority to local or regional governments (although the statutory decision making authority, however, is still legislated through MTCA). This can only be achieved through the appropriate agreements that consider financial resources, trail maintenance and management and liability and public safety. Local trail clubs or other stakeholders may also play a role in the ongoing care of the trail. The Oliver area should enter into such an agreement with the province towards the establishment of trails on Crown lands. It should be recognized, however, that the establishment of trails, however, must respect other provincial priorities such as flood protection and existing tenures.

Town (owned) Lands - The Town of Oliver currently has ownership of many of the lands proposed for trail development, notably the existing Irrigation Channel and local roads. The existing Irrigation Canal travels from Highway 97 (at 102nd Street) south to 310/#18th Road. To permit the trail development, the Town has indicated that it must not only have a preliminary design, and community/farmer consultation but also a secured funding source for each phase of the project. Many of the other road routes and trails are within municipal road right of ways and can be

designated within their Official Community Plan. The Town also offers a skate and bike jump park in Lions Club Park.

Private Lands – There are several opportunities to link possible trail corridors through the use of private lands. Such connections would require the permission of the land owner. It should also be recognized that the Nature Trust of British Columbia does allow hiking on their private lands at McIntyre Bluff, but does not want to encourage increased use. As with all of their South Okanagan land holdings, trails advertisements or posting are not supported.

3.4.12 Invasive Plants

Several new trail routings are proposed through areas that support invasive plant infestations. Additionally, the creation of new trails or expansion of existing trails can facilitate the spread and establishment of invasive plants. The RDOS strategic plan (December 2008) and the *Draft Strategic Invasive Plant Management Plan (in prep)* produced through the South Okanagan-Similkameen Invasive Plant Society both encourage assessing invasive plant risks, and analyzing high-risk sites for potential invasive plant establishment and spread. The creation of environmental conditions that promote invasive plant germination and establishment should be avoided. These documents suggest several best management practices for the design and planning, as well as ongoing management of trails with respect to invasive plants, as follows:

Design and Planning:

- Before ground-disturbing activities begin, inventory and prioritize invasive plant infestations for treatment in the project operating areas and along proposed trails. Identify what invasive plants are on site or within the vicinity and do a risk assessment accordingly.
- Begin project operations in non-infested areas. Restrict movement of equipment or machinery from invasive plant-contaminated areas to non-contaminated areas.
- Clean all equipment before leaving the project site when operating in areas infested with invasive plants. Seeds and plant parts should be collected and disposed. Designate a site where equipment will be cleaned and frequently monitor the site for new invasive plants.
- Where trail establishment requires the introduction of materials such as fill or gravel, inspect materials at the source to ensure that they are free of invasive plants before transport and use.
 - Minimize soil disturbance.
 - Retain native vegetation in and around the trails as much as possible. Retain shade to the extent possible to

suppress invasive plants and prevent their establishment and growth.

- Revegetate disturbed soil to optimize establishment of desirable plants for that specific site. Define for each trail what constitutes disturbed soil and objectives for revegetation.
- Install signs in strategic locations (e.g. trailheads) that provide information on invasive plants and the importance of staying on the trail to prevent their spread. Signs should include information about where to report sightings of new invaders.

Management:

- Inspect and document all ground-disturbing operations in invasive plant areas for at least three growing seasons following completion of the project. For ongoing projects, continue to monitor until reasonably certain that invasive plants will not reappear. Plan for follow-up treatments based on inspection results.

3.4.13 Trail Maintenance

A challenge in the Oliver area is the ongoing management and maintenance (including insurance) for the trail network. At this time there is an array of organizations that are responsible for the trail network.

3.4.14 Trail Conflicts

At this time there is little enforcement to ensure that trail users are meeting the set rules and requirements for activities on the network. This will need to be managed in the future as not to degrade the trail amenities or the permitted user experience.

3.5 TRAIL STANDARDS

The following section identifies the recommended standards for the proposed trails and road routes.

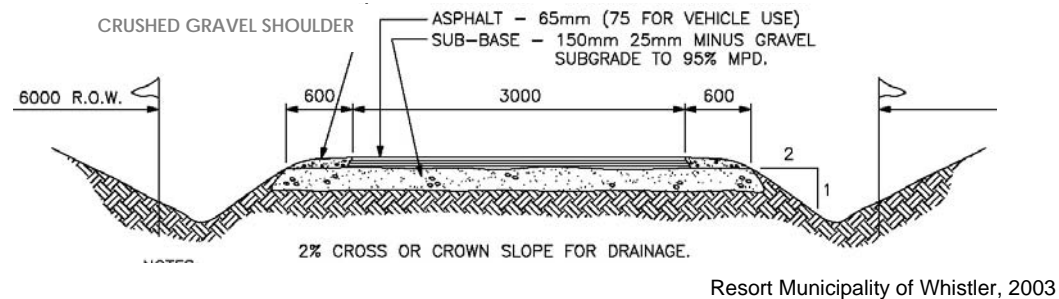
3.5.1 Oliver Hike and Bike Trail Routes

The trails existing and proposed in the Oliver area that will comprise the major routes will need to be constructed of a high standard of construction, be paved and provide a width that will allow for multi-use travellers.

It is recommended, that except for motorized vehicles necessary for persons with disabilities, motorized recreational vehicles will only be

permitted where permitted on Crown lands (this will be subject to the upcoming Trails Strategy which will provide a corresponding trail standard).

The following standard is recommended (it was developed in Whistler, B.C. for their successful Valley Trail network):



Highlights of the Major Trail standard are recommended as:

- Six (6) metre corridor (right of use)
- Minimum longitudinal slope for swale 1%
- Three (3) metre paved surface
- Half metre (0.5) meter crush for each gravel shoulder
- Allow two-way, non-motorized travel (yet permits slow speed mobility assisted transportation such as motorized wheelchairs and scooters)
- Average Grade 5-8%, maximum 10%
- Some more urban or heavy use sections could provide illumination for night use
- Clearance Height 3 metres
- Provides interpretative and directional signs, benches, viewing areas and public washrooms (perhaps in public parks), where appropriate.

Regardless it is important to highlight that this standard is not appropriate where the trail runs along the dike for the following reasons:

- the ditches are inappropriate as they would direct water into the body of the dike and potentially weaken the dike structure
- the dike crest width needs to consider, vehicle and maintenance/construction equipment traffic (including tracked equipment) and Ministry authorized vehicles (for the most part the dike is approximately six metres wide, except at the ramp locations where the width is approximately four metres)
- the paving of the entire width of the dike crest is not an option due the maintenance, operational and emergency response activities that Water Stewardship undertakes; also, hazardous

tree mitigation and wind damage/blow down often damages the trail (the gravel portion is relatively easy and inexpensive to repair, but the asphalt section is often more difficult and significantly more expensive;

- the provision of illumination for night use, public washrooms, etc. would have to be located off the dike right of way
- the current policy is to not approve benches on the dike crest or immediately adjacent to the dike crest due to liability issues arising from the close proximity of Ministry vehicles, contractor equipment, cyclists, etc. ; and
- a vertical clearance height of 6.0 metres above the dike crest for tree limbs, overhead wires, etc. is required.

3.5.2 Road Routes

The Oliver area has a considerable number of rural roads running through the valley. These roads are an alternative to Highway 97 and are used by agricultural, residential, and industrial users. In the past decade cyclists, walkers and wine tasters have also used the routes, enjoying the rolling terrain, the sights and the scenery.

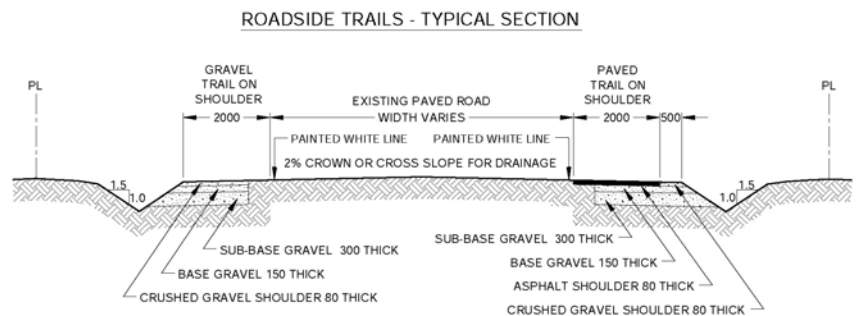
In the review of the trail opportunities within the study area, it was evident that rural roads should be part of the network. The public also indicated that certain improvements should be made to enhance the safety of these routes. It is therefore recommended that certain road routes should be improved to include:

- paved shoulders
- line painting or lane delineation
- signage (route and safety signs)

The road routes have been categorized as either high or medium traffic flows. The recommended road standards for these routes are as follows:

High Use

- 2 metre paved shoulder (one side of road paved with 0.5 gravel shoulder, alternative side of the road 2 metre gravel shoulder)
- Preferred direction for cyclists (to correspond with paved shoulder)



- line painting/delineation of shoulder
- safety signs such as watch for pedestrians and cyclists on the road, blind corner, etc
- routing signs (wine route, cycling route, etc)

Moderate Use

- 2 metre gravel shoulders
- line painting/delineation of shoulder
- safety signs such as watch for pedestrians and cyclists on the road, blind corner, etc
- routing signs (wine route, cycling route, etc)

Highway 97

For the most part, the Master Plan has avoided Highway 97, although there are selected areas where small portions of the highway may be necessary to enable an important connection or loop route (in either the short or long term). Currently Highway 97 provides a 3 metre delineated paved shoulder on both sides of the travel lanes. The paved shoulder sufficiently accommodates single file cycling and pedestrian movement, yet the experience along the highway is compromised due to the amount of traffic travelling at relatively high speeds (80 km/hr). The highway is also not a recommended route of travel for inexperienced cyclists or children.

The highway (although not preferred) could also facilitate a regional trail connection to the communities to Penticton/Kaleden/Okanagan Falls to the north and Osoyoos, to the south.

3.5.4 Front Country Routes

The front country trails are primarily singletrack pathways with limited surfacing. There are two recognized areas that contain front country routes: Oliver Mountain and Golden Mile. Oliver Mountain is currently designated in the Land and Resource Management Plan to become a provincial park. The Master Plan supports this designation as to improve the quality of the trails (i.e. maintenance, closures where there are negative environmental impacts and improvements) as well as to ensure that only permitted activities are taking place. (i.e. non-motorized users).

The Golden Mile Trail runs above the vineyards and orchards, on the west side of the Valley. The trail commences at the former Fairview Townsite and continues to Tinhorn Creek Vineyard and onto 310th/#18 Road. At this time the trail traverses Crown land and private land.

These front country routes are limited to hiking, horseback riding and mountain biking. It is recommended that future trail improvements (that are not under the jurisdiction of BC Parks) be undertaken in accordance

with the provincial standards for established trails (refer to Ministry of Forests, Recreation Manual, Chapter 10 (2000)) but should include:

- Clear width 1-1.5 metres
- Clearance height 2.4 metres
- Provide 50-70 cm tread width on native soil

In addition, new regulations under the Forest and Range Practices Act (Section 46) prohibit the damage of the environment by motorized recreation.

3.5.5 Backcountry Routes

The backcountry routes identified in the Master Plan are a combination of old mining or logging roads and hiking/hunting trails. These routes are entirely on Crown land. No trail standards have been specified as this is subject to either BC Parks or Ministry of Forestry and Range's requirements.

3.6 COSTING

The following provides estimated costing for the improvements identified Section 3.7.

Table 3 - Costing

Required Works	Detailed Description	Cost/lin.m.
Establish Trail Tenure / Liability / Maintenance	Administrative costs	n.a.
Pave Existing Gravel Trail	Add 3-m wide asphalt surface and gravel shoulders to existing gravel trail. No allowance for earthworks or drainage. Reference Section 3.5.1)	\$108
Construct New Trail	Construct new trail as shown in Section 3.5.1	\$209
Rural Roads - Paved One Side	Widen road for paved trail one side and gravel trail other side.	\$361
Rural Roads - Gravel Both Sides	Widen road for gravel trail both sides.	\$237
Install Safety Signage	Supply and installation of a typical sign (concrete base, steel pole, sign).	\$400 per unit
Notes:		
1. Costs are Class D estimates. They are intended to indicate the approximate magnitude of costs based on broad requirements and minimal location-specific detailed information.		
2. For new trails and road widening, a moderate allowance has been made for earthworks and drainage improvements. These are items that cannot be generalized at this conceptual design level since they vary greatly for the different locations.		
3. For paving of existing gravel trails, it has been assumed that no widening, earthworks or drainage works would be required.		
4. No allowance is included in above costs for extraordinary costs such as bridges, extensive earthworks or rock excavation. These items will have to be identified during preliminary design of the various trail segments.		

3.7 PRIORITIES:

The priorities for the future planning and development of the proposed trail routes has attempted to balance the importance of securing existing right of ways with the ability to develop key links to maximize the recreational and economic benefits of these connections. For the most part the Master Plan has considered trail development that provides linking routes. Further the Town of Oliver has developed preliminary trail routes within the municipal boundaries. The connections that include sidewalks, pedestrian walkways and trails, (but the sidewalks have not been identified). The Master Plan has recognized these to all be short and mid-term priorities. The priority work program is included in Figures 7a-7c and listed below:

Table 4 - Priorities

Oliver Hike and Bike Rural Roads Front Country Backcountry		Establish Trail Tenure /Liability /Maintenance	Pave Trail	Pave Shoulder	Install Safety Signage	Construct Trail	Construct Shoulder
SHORT-MID TERM							
1-2	Int'l Hike and Bike Trail (from Vaseux Lake south to Hwy 97)						
2-3	Int'l Hike and Bike Trail located on the west side of the Okanagan River dike (Hwy 97 south to 350 th)	*					
3-4	Int'l Hike and Bike trail located on the west side of the Okanagan River dike (350 th south to #326 Road)	*					
5-6	Int'l Hike and Bike Trail (from Black Sage south to Lake Osoyoos lookout)	*					
7-8	Town Irrigation Corridor (103 rd from Hwy 97 to 350 th through neighbourhood)	*					
8-9	Town Irrigation Corridor (350 th south to 342 nd)	*					
9-10	Town Irrigation Corridor (342 nd south to #7 Road/328 th)	*					
11-12	Town Irrigation Corridor (328 th to 310 th /#18 Rd)	*					
13-14	KVR - Vaseux Lake to Hwy 97+	*					
15-16	KVR – 298 th /#22 Rd to Osoyoos	*			*	*	
22-23	Dike Trail east side (87St to 79 th)	*	*				
21-22	370 th (Hike and Bike to 87St)	*		*	*		
25-26	Dike Trail east side (296 south to Osoyoos Lake)	*	*				
10-36	123 rd /7 th to Hwy 97				*		
43-17	378 th Ave from Hwy 97 east to end				*		
	Golden Mile Trail	*					
47	Fairview White Lake Grasslands/McIntyre Bluff	*					
48	Sawmill Lake/Madden Lake/Ripley Lake	*					
49-10	TKO	*					
	VILLAGE TRAILS AND PATHWAYS	*				*	

LONG TERM							
1-2	Int'l Hike and Bike Trail (from Vaseux Lake south to Hwy 97)+		*		*	*	
4-5	Int'l Hike and Bike Trail (from #326 Road south to Black Sage)		*				
5-6	Int'l Hike and Bike Trail (from Black Sage south to Lake Osoyoos lookout)		*				
7-8	Town Irrigation Corridor (103 rd from Hwy 97 to 350 th through neighbourhood)		*				
8-9	Town Irrigation Corridor (350 th south to 342 nd)		*				
9-10	Town Irrigation Corridor (342 nd south to #7 Road/328 th)		*				
11-12	Town Irrigation Corridor (328 th to 310 th /#18 Rd)		*				
13-14	KVR - Vaseux Lake to Hwy 97+		*		*	*	
15-16	KVR – 298 th /#22 Rd to Osoyoos		*				
17-18	End of 378 Ave to Hike and Bike and 378 Ave (Buchanan)	*	*		*	*	
19-20	KVR west to Secrest Rd	*			*	*	
22-37	326 th from Hwy 97 west to Golden Mile (Tinhorn)				*		
35-38	Fairview White Lake Road (portion of 350 th from Old Golf Course Road to Secrest)			*			
38-39	Fairview White Lake Road (from Secrest north)				*		
38-40	Secrest Road (from Fairview White Lake to Hwy 97)			*			
27-41	Tuc-El-Nuit Lake Rd.			*			
31-32	Miller Road (87 th to Black Sage)			*			
41-42	Hwy 97 (from Tuc-El-Nuit Rd north on the east side of Vaseux Lake)			*	*		
36-30	Hwy 97 from 123/7 th south to 326/9 th						

Figure 7

Figure 7 b

Figure 7 c

4.0 ACTION PLAN

The Action Plan specifies the manner in which the Master Plan can achieve its intended results. The following identifies the recommendation approach to management, communications, funding, risk management, trail use, land use, ongoing maintenance, new trail amenities, trail preservation, ongoing tenure and timelines

4.1 MANAGEMENT

A key determinant in the success of the Master Plan is the recognition and importance of community, business and government partnerships in the efficient and effective delivery of a regional trail network. Section 2.0 identifies the many local, regional, provincial, and government groups with both interest and jurisdictions over the trails within the study area. It is recommended that:

Recommendation #1:

The community, government and business interests previously involved in the drafting of this Master Plan should be formalized into an organization to coordinate and oversee Oliver's trails program with the following considerations:

- ⇒ The organization, known as the Oliver and Areas Trails Steering Committee, should include both voting and non-voting members.
- ⇒ Voting members should have direct interest in facilitating trail improvements including the Town, Regional District, Oliver Parks and Recreation, ODCEDS, trail use clubs, business interests and the community at large.
- ⇒ Non-voting members would have input into the Steering Committee's decisions related to special considerations such as: the Ministry of the Environment (Water Stewardship, Ecosystem Protection, BC Parks), Ministry of Agriculture and Lands (Integrated Land Management Branch), The Nature Trust of British Columbia, Oliver Chamber of Commerce, Okanagan Indian Band, Ministry of Tourism, Culture and the Arts, Environment Canada (Canadian Wildlife Service), Parks Canada, and winery and orchard interests.
- ⇒ Administration responsibilities of the Steering Committee shall be the responsibility of the ODCEDS or the Regional District.

Recommendation #2:

The Steering Committee shall oversee the coordination of the Master Plan including hiring of the appropriate staff and establishing partnerships

necessary for the successful implementation of the Oliver and Area Trails Master Plan.

4.2 COMMUNICATIONS

In order that the community and other organizations continue to be informed about local trail initiatives, a communications plan is needed to educate and build awareness. The communications plan shall consider the most effective opportunities for engagement.

Recommendation #3:

The Communications Strategy shall address the trails program and include the following:

Messaging –the purpose of the trail initiative (based on established goals).

Tools – identification of how the Steering Committee (through their partnerships) will communicate with trail interests (i.e. trailhead information signs, trail signs, website, media releases, advertising, meetings/forums, blogs/email blasts, etc).

Partners – recognition of the partners on the Steering Committee that make decisions and act on the management and maintenance of the trails.

Trail Programs - opportunities to involve individuals, clubs and their memberships specifically in the ongoing planning, maintenance, approvals and expansion of trail development areas.

4.3 FUNDING

A major hurdle facing the ongoing maintenance and future development of trails within the Oliver area is to secure substantial and ongoing funding. The funding should not only consider funding opportunities but also a strategic plan to achieve the desired results.

4.3.1 Funding Sources

This funding should not only be derived from local and provincial taxpayers but also from individual users and benefiting enterprises. Local trail clubs have contributed to trail maintenance and rehabilitation programs. A direct user-pay system is not supported. Available funding sources identified at this time include the following:

Municipal Governments

- ⇒ Oliver Parks and Recreation's revenue comes from property tax contributions from both Town of Oliver and the Regional District's Area C taxpayers (except for trails that exclusively serve the Town).
- ⇒ Service Area Bylaw whereby properties agree to a small assessed amount for trail development.
- ⇒ Hotel Tax through the provincial government.

Provincial Government

- ⇒ Local motion
- ⇒ BC Bikes

Private Interests

- ⇒ Sponsorship from businesses that either directly or indirectly benefit from the existence of the area trails (i.e., tour, accommodation and development companies, events and related outdoor recreational product manufacturers).
- ⇒ Provide an adopt a trail program for local businesses
- ⇒ Pursue website and other publication banner ad sponsorship.
- ⇒ Philanthropy

Not for Profits

- ⇒ Grants, partnerships, etc
- ⇒ Trail use, conservation and service clubs
- ⇒ Tran Canada Trail initiative

4.3.2 Funding Plan Implementation

In addition to identifying potential funding sources, it is also imperative that there be an appropriate management structure and plan to capture all the monies that are available. The Steering Committee should move towards achieving the following recommendations:

Recommendation #4:

The Steering Committee forms the Oliver Trails Fundraising Committee for the purpose of selecting appropriate opportunities for sustained funding.

- ⇒ The Fundraising Committee should be a volunteer group that includes individuals with experience in government grants, building capacity from other community projects and/or experience in identifying creative funding sources.

- ⇒ The Fundraising Committee should recruit from conventional newspaper advertisements and personal contacts. Appointments to the Fundraising Committee should also be considered by the Steering Committee.
- ⇒ Administration of the Fundraising Committee should be the responsibility of the ODCEDS or the Regional District.

Recommendation #5

The Steering Committee and the Fundraising Committee shall prepare a Fundraising Plan that clearly documents funding sources on an ongoing basis sourced from an array of public, private and not-for-profit sectors.

- ⇒ It is important that funding requests be tied to specific projects identified in the Master Plan.
- ⇒ Dovetail efforts with local user groups to coordinate the fundraising strategy and not duplicate or compete with other important community initiatives (i.e. KVR and the Trans Canada Trail).

4.4 RISK MANAGEMENT

There are certain inherent risks to offering lands for public trail use. At this time the liability is shared by several different agencies including not for profits (i.e. International Hike and Bike Society), the Town of Oliver, and the provincial government. The provincial government often enters into partnership agreements (Section 118 of Forest Range Practices Act) with organizations (including local/regional governments) to assist with the management and maintenance of Crown land trails. These agreements, however, are not intended to transfer or download liability (except in the case of mountain bike trails with technical terrain features or stunts). The purpose is to leverage resources to try and meet the increasing demands for trail management and maintenance. When entering into an agreement, an organization or an individual automatically increases their exposure to liability based on their activities and association with the trail.

The province offsets this increased liability by providing third party general liability insurance (up to \$2 million) to its partners without cost. This coverage only "kicks in" after any existing insurance is utilized. In the case of municipalities and regional districts (essentially self insured under the Municipal Insurance Association), the coverage would not apply and therefore is not extended as part of the agreement. Regardless, it is probable that if a suit was filed related to a trail under partnership with a local government, it can be assumed both parties would be named and both would rely on their existing insurance arrangements.

Recommendation #6:

The Steering Committee should identify the preferred agency (agencies) to assume liability for trail use on public lands.

- ⇒ The liability for trail use on Town owned land shall be the responsibility of the municipality.
- ⇒ The liability for trail use on Crown lands shall be determined by the Steering Committee., however, it is recommended that the Regional District play a lead role

Recommendation #7

The Steering Committee, in consultation with local and provincial governments, should prepare a Risk Management Plan.

- ⇒ The goal of the Risk Management Plan shall be to minimize injury and offset any possible liability issues through proactively avoiding or mitigating hazardous trail conditions, providing the necessary information to trail users, and further ensuring the appropriate protocol and resources are in place to manage emergency situations.
- ⇒ The Risk Management Plan shall consider an inspection and maintenance program, user preparedness/personal responsibility, trail user information, emergency response program, and trail patrols.

4.5 TRAIL USE MANAGEMENT

The Oliver area provides an extensive trail network accessible to many different users whether they be walking, biking or on motorized transportation. To ensure that the trail system is effectively managed it is important that there are quality opportunities for the recognized recreational trail users in the area. The Oliver area currently accommodates a wide range of trail users (refer to Section 1.4) and therefore it is important to provide sufficient opportunities for these users, as well as, both understand and mitigate potential conflicts among users.

4.5.1 Trail Use Access

An important consideration in managing trail use conflicts is to ensure that there are sufficient trails for the user group demand that does not significantly compromise the experience of others. In particular, equestrian, mechanized and motorized users may disturb hikers/walkers, while further the later three users may be disruptive to each other. At this time it appears that most of the trails within the valley floor are predominately for non-motorized users, while mountain bikes and equestrians have restricted access on some of the more environmentally sensitive lands. During the consultation process, only one area of conflict was identified. This was the trail use of Oliver Mountain, in particular, the

spring use by motorized dirt bikes. This use has since been discontinued, while alternatives are being pursued for a new motorized use area (refer to Section 2.41 Land and Resource Management Plan).

Recommendation #8

Identify and secure trail access routes for all recognized users in the Oliver area.

Recommendation #9

Appropriately inform trail users and delineate trail routes.

- ⇒ Physically restrict users from accessing prohibited trails.
- ⇒ Require signs that provide warnings related to potential trail conflicts, obstacles wildlife and safety concerns.

Recommendation #10

The Steering Committee should identify and employ a hierarchy of management tools to reduce potential for conflict through a Conflict Management Plan.

- ⇒ Inform trail users of the potential conflicts between trail use and the protection of the natural environment, and ensure that suitable mitigation works are in place to minimize such impacts.
- ⇒ Inform trail users of all potential trail users and the appropriate etiquette (i.e. yielding/behaviour)
- ⇒ Adopt an Oliver and Area Trail Use Code of Conduct.
- ⇒ Signage and maps clearly identify the trail users permitted for each route.
- ⇒ Determine the appropriate level of enforcement
- ⇒ Education, trail “gates” and signage are the preferred course of action in addressing potential trail use conflicts.

4.7 LAND USE

The Oliver Area provides a diversity of trail opportunities that travel through or adjacent to different land uses. The Okanagan Shuswap Land Resource Management Plan (2001) provides a strategic approach in addressing the varied use of Crown land, while both the Town and the Regional District designate uses of the other properties. For a trail system to be achieved and successful it must appropriate manage impacted and complementary land uses.

Recommendation #11

Ensure trail management decisions are consistent with the LRMP and that the relevant ministries and agencies are involved related trail management decisions.

⇒ The requirements identified in Section 3.4 - Land Use Constraints and Recommended Protocol shall be formally adopted by the Steering Committee.

Recommendation #12

Continue to encourage and facilitate the installation of educational and interpretative signage adjacent to trails. These signs will assist in the management of the natural resources.

4.8 ONGOING MAINTENANCE

In addition to the development of new trails, the Oliver Area Trails Steering Committee should also recognize the coordination and expense needed to maintain the local trail system. At this time the trails are taken care of by the Regional District, Town, the province and local trail users and conservation not for profits. The responsibility for the maintenance of the trail should relate to the assigned tenure and liability for the trail use.

Recommendation #13

The Steering Committee should identify the appropriate interest to be engaged in inspections and ongoing care of the trails.

4.9 TRAIL PROTECTION

The Master Plan is an important tool and action plan to document existing and future trails; however, it is also recommended that the local governments adopt a policy of net gain of trails. The net gain of trails policy would ensure that in the future trails would be managed, maintained, and protected (an example of such a policy is attached as Appendix C).

Recommendation #14

The Steering Committee shall develop a Net Gain Trails Policy to ensure the ongoing protection of the Oliver area's trail amenities.

4.10 ONGOING TENURE

Fundamental to preservation and ongoing enhancement of trails in the Oliver area is to ensure that the use will be retained in the long term. As mentioned in Section 3.4.11, an important objective of the Master Plan is to not only identify existing and proposed trail alignments but also ensure that the trails will be secured in perpetuity.

Recommendation #15

The Steering Committee work with the current owners of existing and future trail alignments to secure long term tenure of the trail use and amenity.

Appendix A - Community Questionnaire Results & Community Comments

1. Are you a resident of the Town of Oliver or the Regional District of Okanagan Similkameen?

	Response Percent	Response Count
Yes	87.5%	14
No	12.5%	2
If no, (please specify where you reside)		2
answered question		16
skipped question		0

Idaho, USA
Osoyoos

2. Do you currently use trails in the Oliver Area?

	Response Percent	Response Count
Yes	100.0%	16
No	0.0%	0
answered question		16
skipped question		0

3. What mode of travel do you use on Oliver area trails (you may select more than one)?

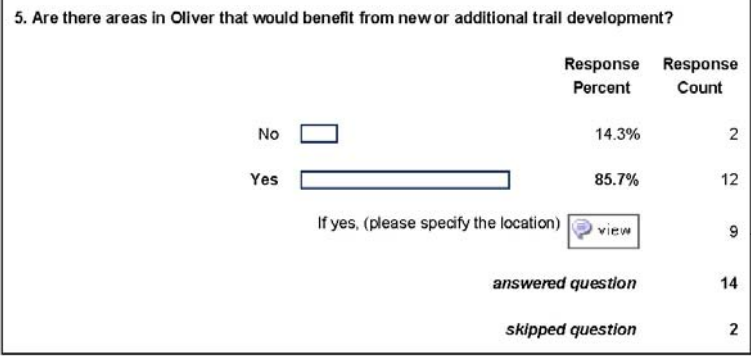
	Response Percent	Response Count
Walking/Hiking	100.0%	16
Equestrian	18.8%	3
Road Biking	50.0%	8
Mountain Biking	56.3%	9
Motor/Dirt Biking	0.0%	0
ATV/Snowmobile	12.5%	2
Rollerblading	12.5%	2
Skateboarding/Scooter	0.0%	0
Motorized Wheelchair/Scooter	0.0%	0
Cross country skiing		1
answered question		16
skipped question		0

Hike Bike International Trail McIntyre from Covert Farms McIntyre from Railway Grade at Pipeline Bridge crossing (steep)
1. Valley Trail along Okanagan River 2. Golden Mile Trail 3. Mt. Bike Trails near Covert Farms
Hike and Bike
1. International Hike and Bike Trail 2. Highway 97 (Sheer practicality) 3. Golden Mile

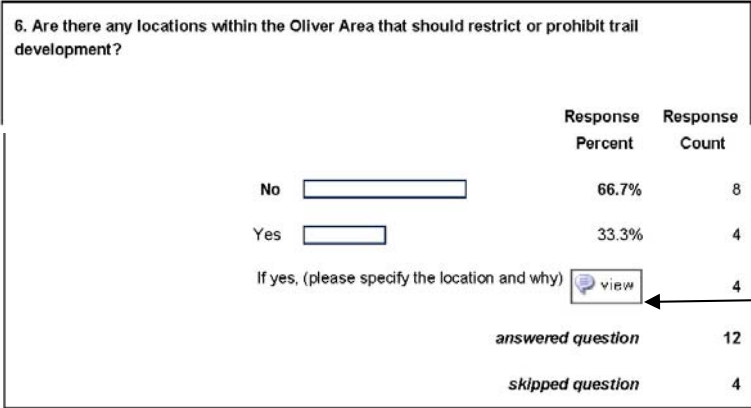
mountain biking trails equestrian trails walking/hiking trails rollerblading trails
Hike and Bike Black Sage Road Seven
KVR on West side of Vaseax Golden Mile Bike and Hike Trail
Rattlesnake Lake / MacIntyre, Oliver Mtn, White Lake
1) Golden Mile 2) River / Canal Trails
Hike and Bike Trail
bike trail, both north and south Tuc-le nuit road fairveiv golf course road 23
TKO, Cawston Creek, Rattle Snake Lake Loop
1. White Lake - Mahoney Lake 2. Sawmill Lake - Bear Lake 3. Orofino
1 white lake 2 coveret farm 3 golden mile

4. List your top three(3) favourite trails in the Oliver Area in order of preference (1 = most important).

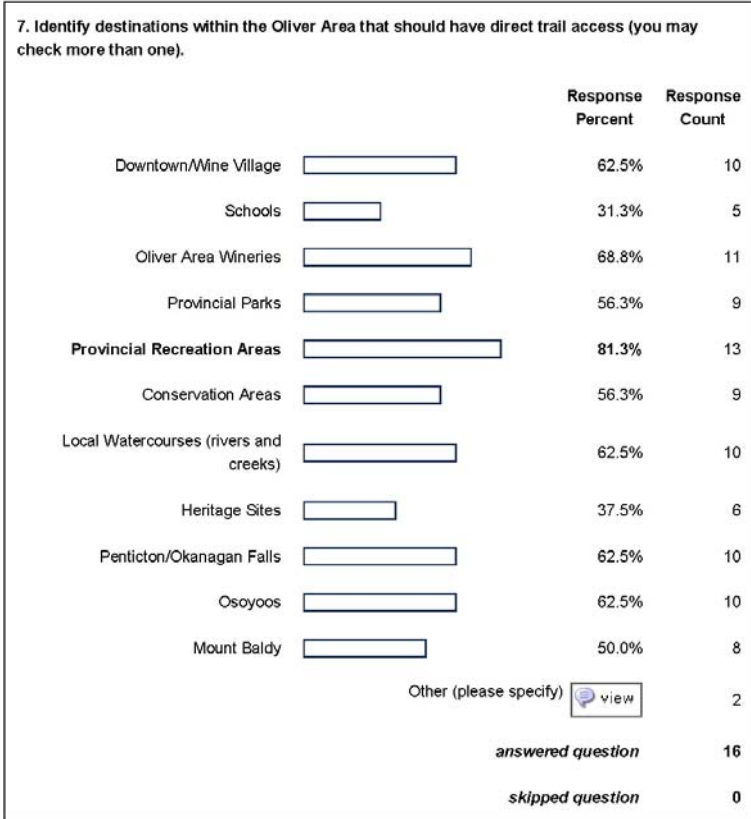
	Response Count
	14
answered question	14
skipped question	2



West side of valley, cycle lanes on Hwy 97
Ripley Madden Area
Oliver Mtn, Covert Farm to White Lake, Fairview and Kobau slope
Tuc lake
canals
Fairview mtn, Oliver mtn, Mt. Kobau, Golden mile, Mt Baldy
Sign Post at McIntyre Canyon Route
Better links to wineries from Valley Trail
Enhancement to Hike and Bike, and East Bench area




Any areas raped by motorsport - Oliver Mtn and Sawmill Lake areas, just to get started
west side of Vaseau Lake - there are many many trails in the area, we do not need to impact an area that is virtually 'footprint-free'. Also need to restrict dirt bikes and ATV's, but I don't know where you could restrict them to that they wouldn't be a problem to anyone.
Indian Reserve
Not specific locations but rather areas of unique fragile ecosystems.



Willowbrook
Off road cycle route to connect bike path - prefer off road

8. Please indicate any Oliver Area roads that would benefit from improvements to facilitate the safe travel by pedestrians and cyclists (i.e. signage and paved shoulders)

	Response Count
 view	13
answered question	13
skipped question	3

Black Sage Road, Road 7, Highway 97 White Lake Road, Crossing from Bike path to Seacrest

White Lake and Green Lake Roads Highway 97 should have larger shoulders

This is a roads issue, not trails. Our Hwys have adequate pedestrian and cyclist spaces and our back roads have very little traffic to need such improvements. Put some resources into actual trails.

Tuc El Nuit Drive Hwy 97 Black Sage Road

I would like to suggest stairs be built at the south end of 85th Street to 87th Street by Heritage house. A real asset to the locals up the hill!

Tuc-le-nuit, black sage

black sage rd., whitelake rd., seacrest rd.

Seacrest Road and White Lake/Fairview!!!!

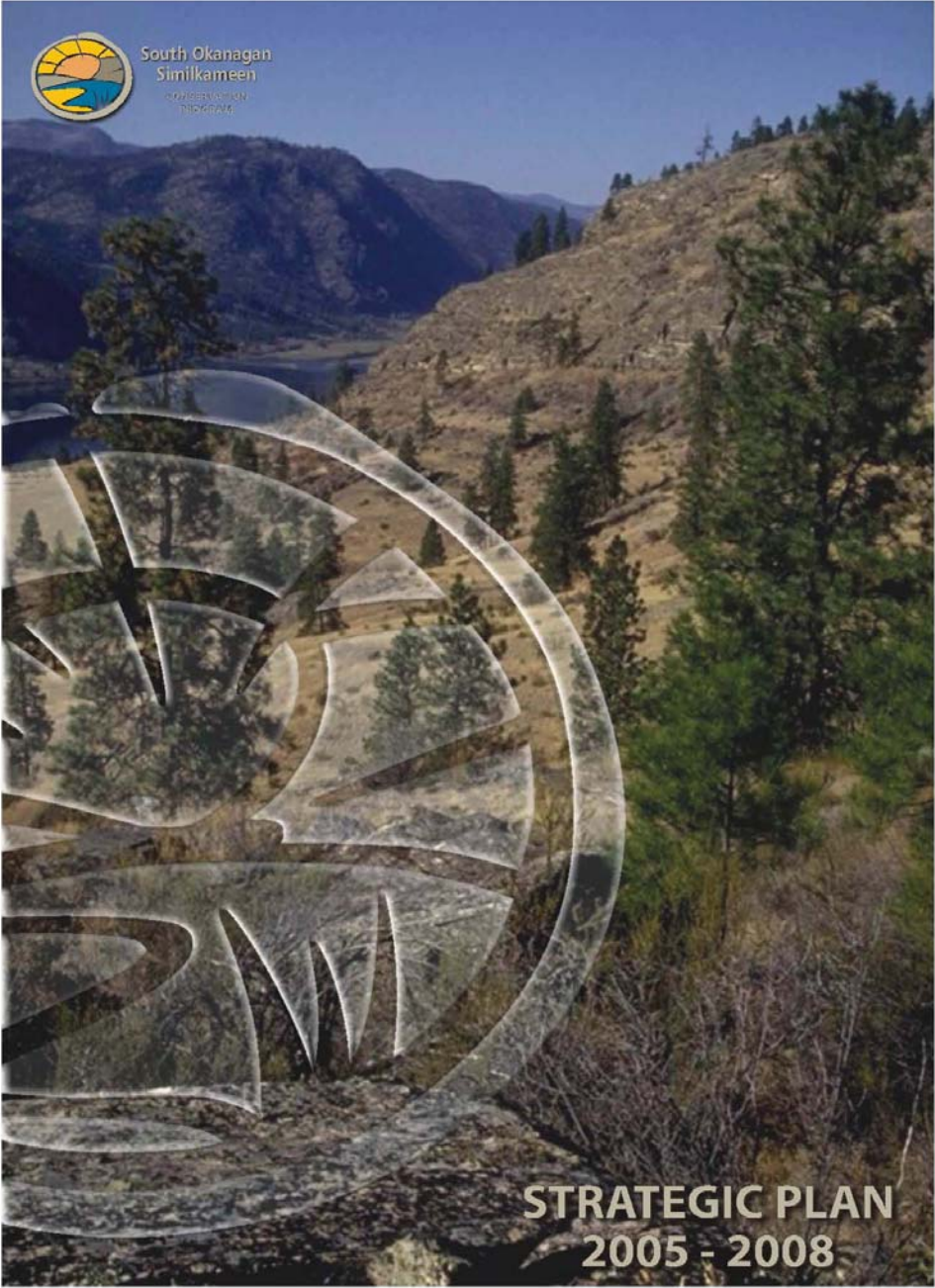
Establish bike lanes on 350th from Rec Centre to Fairview Town site

Black Sage Road, White Lake Rd (fairview Loop) and Hwy 97.

When we walk especilly in the summer, we look for trails that hve lots of shade. Older people, kids and dogs, cannot handle the desert heat and because the ecology here shade is hard to find. Perhaps near water or trails in the mountains.

Highway 97, Black Sage Road, Tuc el Nuit Drive, Road 7 from Fairview Road to Highway 97.

Appendix B – South Okanagan Similkameen Conservation Program



**South Okanagan Similkameen Conservation Program
Strategic Plan 2005-2008**

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Strategic Plan 2005-2008

South Okanagan Similkameen Conservation Program

Context

The South Okanagan Similkameen Conservation Program is a partnership of government, non-government, First Nations, universities, and industry with shared interests in conserving the unique biodiversity and landscapes of the South Okanagan and Lower Similkameen areas of British Columbia. It was created to protect the biodiversity of the area, to maintain a viable ecological corridor between the deserts to the south and the grasslands to the north, and to effect recovery of endangered species to the extent possible.

The South Okanagan Similkameen contains unique habitats and species of international importance. This is Canada's "Desert Country". Valleys in the shadow of the Coast Mountains are lined by fertile bench-land terraces formed from the last glaciation. A unique assemblage of plants and animals results from the juxtaposition of diverse habitats, such as wetlands, grasslands, rocky outcrops, and forests.



Many species are found only in this area, including 8 species of invertebrates found nowhere else in the world, and 8 species of vertebrates and 28 species of invertebrates found no where else in Canada. In addition, many species are endangered. Currently, there are at least 50 species of plants and animals listed as Extirpated, Endangered, Threatened, or of Special Concern under Canada's *Species at Risk Act* or Committee on the Status of Endangered Wildlife in Canada, and more than 150 species on the provincial Red and Blue lists.



Strategic Plan 2005-2008

South Okanagan Similkameen Conservation Program

Statement of Purpose

The South Okanagan Similkameen Conservation Program was developed to focus the energy of the partners and the community at large to make most efficient use of the limited resources available to the government and non-government agencies responsible for resource management and conservation in the area. It capitalizes on the tremendous amount already accomplished for conservation in the South Okanagan, and sets priorities for future efforts.

This Strategic Plan update reiterates the vision, strategic goals, governance structure, planning framework, and conservation priorities of the SOSCP. It complements the Program Prospectus, and provides details on each of the strategies to be used as outlined in the Program Prospectus, published in 2000. In addition, it guides the development of an annual Business Plan, and the Action Plans for the habitats of highest priority.

Mandates, Policy and Legislation

Biodiversity conservation in Canada is achieved through a combination of voluntary actions by landowners and resource managers, implementation of specific programs by government and non-government organizations, development and implementation of policy by government, and through legislative roles of all levels of governments. In general, no one agency is totally responsible for management of biodiversity, and to be effective in achieving conservation targets, many organizations must act together.

The South Okanagan Similkameen Conservation Program seeks to capitalize on the diverse mandates of its partners. Government policy can be both shaped and implemented by the partners acting together. Individual groups and agencies deliver projects and programs designed to effect conservation in the South Okanagan-Similkameen area. Regulatory agencies can influence those programs and cooperate in their delivery as needed, including where permitting may be necessary. By acting in concert, on behalf of the common good, the most efficient approach to conservation can be achieved.

Vision

The South Okanagan Similkameen Conservation Program is a model for development and delivery of coordinated conservation programs in the South Okanagan and Similkameen areas of British Columbia.

It will:

- Set and agree on priorities, goals and objectives for conservation in the South Okanagan-Similkameen area;
- Develop and deliver programs that maintain biodiversity at desired levels on the landscape, including endangered species;
- Work to maintain the north-south corridor to ensure organisms have a chance to adapt to climate changes expected in the next 100 years;
- Ensure a balance between conservation objectives with social and economic aspirations of citizens of the area.

Strategic Plan 2005-2008

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South Okanagan Similkameen Conservation Program

Strategic Goals

1. Provide scientific information for planning, priority setting, implementation of conservation actions, and evaluation of program and project effectiveness (Science).

- 1.1 Use available data to set, review, update and inform other Program teams of habitat priorities based on the needs of species at risk, rarity of habitats, perception of threats, and the need to maintain the north-south corridor;
- 1.2 Develop and implement a plan for evaluating the effectiveness of the Program in achieving habitat goals, and the subsequent effect on individual species of interest;
- 1.3 Develop a definition of "functional" as it pertains to maintenance of ecosystem function;
- 1.4 Provide expert advice to develop a strategy for integrating large scale ecosystem processes, such as fire management, climate change, and hydrology, into setting priorities for habitat conservation.

2. Develop short, medium and long term conservation plans (Planning)

- 2.1 Develop a detailed plan for the conservation of riparian/wetland areas, at the lot level;
- 2.2 Develop detailed plans for conservation of priority habitats, at the lot level;
- 2.3 Develop a strategy to incorporate the Okanagan River Restoration Initiative into the SOSCP planning framework;
- 2.4 Collaborate with First Nations in the South Okanagan and Similkameen valleys to develop land use and conservation plans for their reserve lands.

3. Acquire and manage properties of high conservation value (Securement).

- 3.1 Develop and implement a strategy to ensure coordination between members of the Program when approaching landowners for potential purchases, other forms of securement, and stewardship;
- 3.2 Identify, prioritize and acquire key properties.
- 3.3 Develop and implement management plans for conservation properties in the South Okanagan Similkameen area.



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South Okanagan Similkameen Conservation Program

4. Promote and enhance management of privately owned land of high value to priority habitats and regional biodiversity (Stewardship).

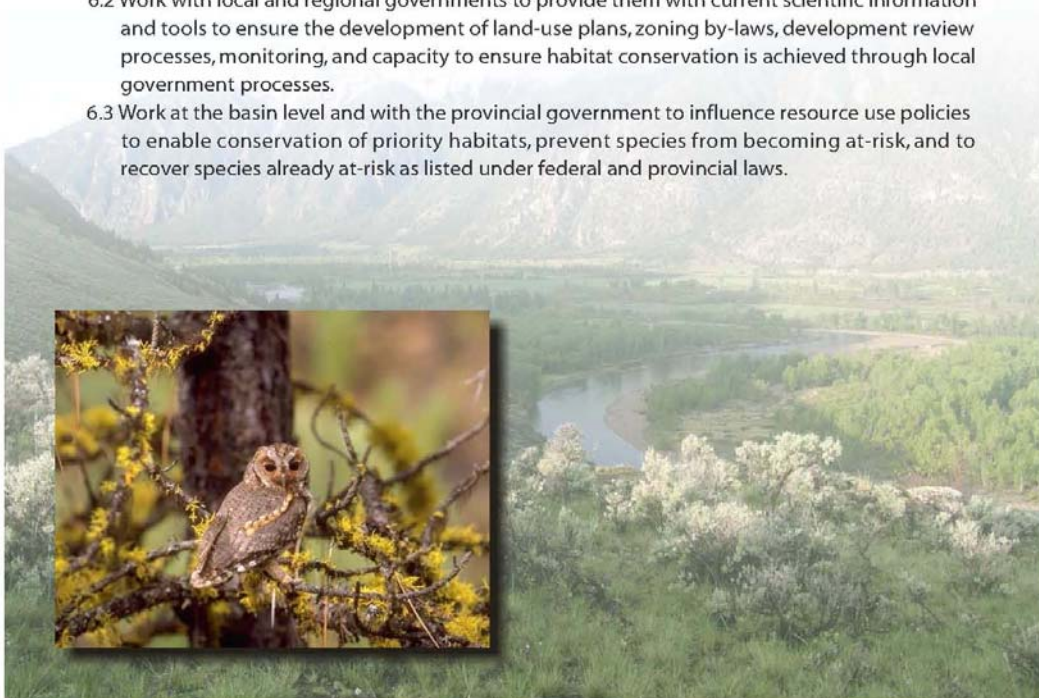
- 4.1 Develop and implement land owner contact projects to assist individual land owners to protect priority habitats and species at risk;
- 4.2 Develop, implement and maintain community stewardship programs in geographic areas with priority habitats;
- 4.3 Develop and implement formal protection for priority habitats through stewardship agreements, conservation covenants, and donations; and identify potential acquisitions to the Securement Team
- 4.4 Develop and implement habitat improvement and restoration projects for priority habitats and in priority geographic areas.

5. Foster increased conservation awareness, involvement and commitment of residents and visitors to the South Okanagan Similkameen areas (Outreach).

- 5.1 Develop and implement community education and awareness programs and projects;
- 5.2 Develop, implement and maintain a communications network within the South Okanagan Similkameen Conservation Program.

6. Influence local, regional and provincial government land use decisions consistent with the attainment of the landscape goals of the SOSCP (Land Use Planning).

- 6.1 Assist local and regional governments to develop a long term land use planning vision that incorporates habitat conservation as a component of quality of life.
- 6.2 Work with local and regional governments to provide them with current scientific information and tools to ensure the development of land-use plans, zoning by-laws, development review processes, monitoring, and capacity to ensure habitat conservation is achieved through local government processes.
- 6.3 Work at the basin level and with the provincial government to influence resource use policies to enable conservation of priority habitats, prevent species from becoming at-risk, and to recover species already at-risk as listed under federal and provincial laws.



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South Okanagan Similkameen Conservation Program

7. Promote the understanding and use of aboriginal peoples' knowledge and respect for the land (Traditional Ecological Knowledge)

- 7.1 Support the recovery and use of good conservation practices on- and off- reserve using Traditional Ecological Knowledge;
- 7.2 Ensure protection of traditionally used areas on- and off-reserve through the use of Traditional Ecological Knowledge;
- 7.3 Incorporate Traditional Ecological Knowledge science into western science being used for species at risk recovery planning and landscape management.

8. Improve the knowledge base for reporting on achievement of conservation goals in the South Okanagan Similkameen area (Evaluation).

- 8.1 Develop and implement an efficient process for determining the effectiveness of programs and projects delivered by the South Okanagan Similkameen Conservation Program partners.

Governance

The South Okanagan Similkameen Conservation Program is a partnership of government, non-government, First Nations and industries that wish to work together to achieve habitat conservation objectives in the South Okanagan Similkameen landscape. The Program is an umbrella that represents the common interests of the Partners at the local, regional, national and international level. It is open to all, and the commitment of the partners to work together is witnessed and affirmed in the signing of the Statement of Cooperation.



Strategic Plan 2005-2008

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South Okanagan Similkameen Conservation Program

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South Okanagan Similkameen Conservation Program

Steering Committee

Representatives from each of the Partners form a Steering Committee, which meets quarterly, with the fall meeting constituting the Annual General Meeting. The Steering Committee sets broad direction for the Program and determines if the goals and objectives are being met. It represents all the Partners in decisions related to organization, implementation and administration of the Program. The Annual General Meeting gives all partners the opportunity to review the progress of the Program collectively, and may be accompanied with a symposium on current topics to stimulate thinking on Program direction into the future. *Member organizations are listed in Appendix 1.*

Executive Committee

The Executive Committee consists of the Chair, Vice-Chair, Past-Chair, the Chair of each of the implementation Teams (*see table 1*), and two Steering Committee representatives, elected at the Annual General Meeting or Meeting or other Steering Committee meeting. The Executive meets bi-monthly, and deals with issues related to implementation of the Strategic Plan and the Business Plan, development of operational policy, and the management of human and financial resources. The Chair is appointed for a two-year period, and normally the Vice-Chair assumes the Chair at the end of that period, with a new Vice-Chair being elected to maintain continuity from year to year. The Executive Committee is guided by bylaws and policies that include operating principles, conflict of interest guidelines, communications policies, and procedures for managing meetings.



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South Okanagan Similkameen Conservation Program

Table 1. Program Teams and Members as of June 2005.

<p>Science Team Karen Hodges <i>(UBCO), Chair</i></p> <p>Orville Dyer (MoE) Geoff Scudder (ODS) Dennis St. John (FBCN) Dick Cannings (OSCA) Grant Furness (MoE) Alex McLean (MoF) John & Mary Theberge (CPAWS) John Woods (PCA) Bob Lincoln (Emeritus) Howie Richardson (OC) Pam Krannitz (CWS)</p>	<p>Traditional Ecological Knowledge Team Jeannette Armstrong <i>(En'Owkin Centre), Chair</i></p> <p>Orville Dyer (MoE) Ron Hall (OIB); Richard Armstrong (PIB), Lillian Gotfriedson (LSIB) Judy Brock (OSCA) Shawn Black (TLC) Carl MacNaughton (TNT) Rob Hawes (DUC)</p>	<p>Outreach Team Judy Brock <i>(OSCA), Chair</i></p> <p>Shawn Black (TLC) Lisa Scott (SOSS) Jeanette Armstrong (En'Owkin Centre) Carl MacNaughton (TNT) Joanne Muirhead (ODC) Associates -NCC - NDHS -DUC - ODC -CPAWS - LSIB</p>
<p>Stewardship Team Shawn Black <i>(TLC), Chair</i></p> <p>Sue Austen, Anthea Bryan, Lisa Scott, Mike Sarell (SOSS) Peter Ord (OSCA) Alex McLean (MoF) Carl MacNaughton (TNT) Gretchen Harlow (CWS)</p>	<p>Land Use Planning Team Rob Hawes <i>(DUC), Chair</i></p> <p>Ken Brock (SOSCP Chair & CWS) Alex McLean (MoF) Eike Scheffler (OOS) Sue Austen (SOSS) Judy Brock (OSCA) Terry MacDonald (ILMB [F&LM]) Lora Nield (MoE); Harold King (SON); Tasha Sargent (GCC)</p>	<p>Securement Team Carl MacNaughton <i>(TNT), Chair</i></p> <p>Ken Brock (SOSCP Chair & CWS) Michael Dunn (CWS) Brad Arner (DUC) John Holdstock (ORWHS) Shawn Black (TLC) Tom Swann/Barb Pryce (NCC)</p>

Abbreviations:

CPAWS – Canadian Parks and Wilderness Society; CWS – Canadian Wildlife Service; DUC - Ducks Unlimited Canada; FBCN – Federation of BC Naturalists; GCC – Grasslands Conservation Council; ILMB (F&LM) – Integrated Land Management Bureau (BC Ministry of Food and Land Management); LSIB – Lower Similkameen Indian Band; MoE – BC Ministry of Environment; MoF – BC Ministry of Forests; NCC – Nature Conservancy Canada; NDHS – N'k'mip Desert Heritage Society; OC – Okanagan College; ODS - Osoyoos Desert Society; OIB - Osoyoos Indian Band; OOS - Osoyoos Oxbow Society; ORWHS – Okanagan Region Wildlife Heritage Society; OSCA - Okanagan Similkameen Conservation Alliance; PCA – Parks Canada Agency; PIB - Penticton Indian Band; PIF - Partners In Flight; SON - South Okanagan Naturalists; SOSCP – South Okanagan Similkameen Conservation Program; SOSS - South Okanagan Similkameen Stewardship; TLC – The Land Conservancy of BC; TNT - The Nature Trust of BC; UBCO - University of BC Okanagan.



South Okanagan Similkameen Conservation Program

Program Manager

The Program Manager is the only staff person assigned to the Program. The position is funded by a subset of the Partners, and normally works under a contract with one of the Partners acting as the banker.

The Manager's role is to work to maintain the partnership, develop the strategic direction for approval by the Executive and the Steering Committee, maintain and increase program support including looking for new partners, and to secure long-term funding and support for the Program and Partners.

Implementation Teams

Six teams coordinate development of the programs and projects of the South Okanagan Similkameen Conservation Program. These teams are: Science, Traditional Ecological Knowledge, Outreach, Stewardship, Securement, and Land-use Planning. Their duties are broadly outlined in the section above on Strategic Goals. However, some of the strategic goals are not assigned to specific teams. The planning function is undertaken by each team, the Manager, and the Executive. Evaluation is managed by the Science Team, but data in support of all science is likewise collected by individual partners, and other agencies and individuals not necessarily formal members of the South Okanagan Similkameen Conservation Program. In most cases, implementation of specific projects is undertaken by individual partners, or by several working together. *The teams and their current members are shown in Table 1.*

Planning Framework

Investments made by the partners and their funders are expected to contribute to the achievements of the agreed conservation goals. Because the funding available is limited, investments must focus on high priority habitats and species, and they must produce the desired result, both at the landscape level and at the level of the individual species, for example where species at risk are involved. The Teams, the Executive, and the Steering Committee work toward these ends by setting priorities, developing strategies, designing projects and programs, evaluating the impact of conservation efforts, and reconfirming existing strategies, or developing new ones.



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South Okanagan Similkameen Conservation Program

The Science Team undertakes to establish short and longer term goals for conservation, primarily at the habitat level. These goals are, however, strongly influenced by the needs of species at risk, where there are Recovery Strategies or Action Plans in place for those species. The other teams develop annual work plans based on those priorities. The Executive reviews both the priorities suggested by the Science Team, and the work plans developed by the delivery teams. The Executive may also recommend proceeding with some projects, or deleting others, and may also recommend as a result of project and program evaluation changing the allocation of funds between projects, programs, and strategies. As the funds are generally under the control of individual agencies, however, the Executive depends on cooperation by the Partners to achieve the best return for investment on the ground.

Funding

Funding for the projects and programs delivered under the auspices of the South Okanagan Similkameen Conservation Program generally go directly to the individual partners. The program itself does not deliver projects and therefore does not have need of a large pool of funds. There are never enough resources, however, to accomplish all that the Partners would like. The Manager and senior representatives of the Partners will meet with senior government and non-government officials to highlight the strategic direction of the Program, and seek to expand the support base for the Program. This meeting will include seeking funding for individual projects and for the financial overhead of the Program in general.

Conservation Priorities

The current priority habitats are Wetland/Riparian areas, and Grassland /Shrub-steppe, most notably those containing Antelope Brush. *Details of habitat priorities are shown in Appendix 2.*



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South Okanagan Similkameen Conservation Program

Appendix 1. Program Partners, 2005.

BC Conservation Foundation
BC Lake Stewardship Society
BC Ministry of Agriculture & Lands
BC Ministry of Environment
BC Ministry of Forests & Range
BC Wildlife Federation
BC Wildlife Federation, Okanagan Region
Burrowing Owl Conservation Society of BC
Canadian Parks and Wilderness Society - BC Chapter
Department of Fisheries and Oceans Canada
Destination Osoyoos
Ducks Unlimited Canada
En'Owkin Centre
Environment Canada - Canadian Wildlife Service
Federation of BC Naturalists, Thompson - Okanagan Region
Grasslands Conservation Council of BC
Habitat Conservation Trust Fund
Okanagan College
Okanagan Region Wildlife Heritage Fund Society
Okanagan Similkameen Conservation Alliance
Okanagan Similkameen Parks Society
Osoyoos Desert Society
Osoyoos Indian Band
Osoyoos Lake Water Quality Society
Osoyoos Oxbows Restoration Society
Pacific Salmon Foundation
Partners in Flight
Penticton Museum and Archives
Royal BC Museum
Southern Interior Bluebird Trail Society
South Okanagan Rehabilitation Centre for Owls
The Land Conservancy (TLC) of BC
The Nature Conservancy Canada, BC Region
The Nature Conservancy, Washington
The Nature Trust of BC
University of British Columbia, Faculty of Land and Food Sciences
University of British Columbia Okanagan



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South Okanagan Similkameen Conservation Program

Appendix 2. Details of Priority Habitats, 2005.

Priority	SOSCP Priority Habitat	Habitat Sub-type
1	Coniferous Forest	Ponderosa pine - water birch moist fan
1	Coniferous Forest	Ponderosa pine - antelope-brush coarse-textured soil
1	Coniferous Forest	Yellow pine - saskatoon fan
1	Grasslands/Shrub-steppe	Antelope-brush - needle-and-thread grass coarse-textured soils
1	Grasslands/Shrub-steppe	Big sagebrush - needle-and-thread grass coarse-textured soil
1	Grasslands/Shrub-steppe	Bluebunch wheatgrass - Idaho fescue coarse-textured soil
1	Rugged Terrain	Barren
1	Wetland/Riparian	Black cottonwood - red-osier dogwood floodplain
1	Wetland/Riparian	Common cattail marsh
1	Wetland/Riparian	Pond
1	Wetland/Riparian	Sewage lagoon
1	Wetland/Riparian	Shallow open water
1	Wetland/Riparian	Silverweed - bulrush meadow
1	Wetland/Riparian	Water birch - red-osier dogwood swamp
1	Wetland/Riparian	Western red cedar - Douglas maple riparian
2	Coniferous Forest	Douglas-fir - heart-leaved amica warm aspect
2	Coniferous Forest	Ponderosa pine - bluebunch wheatgrass mesic
2	Grasslands/Shrub-steppe	Big sagebrush - bluebunch wheatgrass mesic
2	Grasslands/Shrub-steppe	Bluebunch wheatgrass - arrow-leaved balsamroot deep soil
2	Grasslands/Shrub-steppe	Bluebunch wheatgrass - junegrass mesic
2	Grasslands/Shrub-steppe	Bluebunch wheatgrass - Sandberg's bluegrass deep soil
2	Rugged Terrain	Cliff high
2	Rugged Terrain	Cliff moderate
2	Rugged Terrain	Talus
2	Wetland/Riparian	Trembling aspen - common snowberry moist



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South Okanagan Similkameen Conservation Program

The following SOSCP representatives may be reached at the following information:

SOSCP Program Chair
SOSCP Program Manager
SOSCP Outreach Coordinator
SOSCP Communications Coordinator
Science Team
Land Use Management Team
Outreach Team
Traditional Ecological Knowledge Team
Habitat Securement Team
Stewardship Team

South Okanagan Similkameen Conservation Program

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South Okanagan Similkameen Conservation Program

Credits

Photography

Cover	Steve Cannings	South Okanagan Habitat Diversity
Front Inside Cover	Rob Cannings Dick Cannings Jared Hobbs	Mantid Sandhill Crane White Lake
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Page 2	Steve Cannings	Vaseux Lake Scenic
Page 3	Steve Cannings Steve Cannings	Cross Valley Perspective Mountain Bluebird
Page 4	A. Michael Bezener Dick Cannings	Similkameen Valley Scenic Flammulated Owl
Page 5	A. Michael Bezener A. Michael Bezener	Okanagan River Sockeye Salmon
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Page 10	Jared Hobbs Jared Hobbs Jared Hobbs Jared Hobbs	Anarchist Mountain Autumn Leaf Brush Habitat Brewer's Sparrow
Page 11	Jared Hobbs Jared Hobbs	Antelope-brush Rubber Boa
Page 12	Dick Cannings Jared Hobbs Dick Cannings	South Okanagan Grassland Perspective Ferruginous Hawk Gopher Snake

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Partners

BC Conservation Foundation
BC Lake Stewardship Society
BC Ministry of Agriculture & Lands
BC Ministry of Environment
BC Ministry of Forests & Range
BC Wildlife Federation
BC Wildlife Federation, Okanagan Region
Burrowing Owl Conservation Society of BC
Canadian Parks and Wilderness Society –BC Chapter
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Destination Osoyoos
Ducks Unlimited Canada
En'Owkin Centre
Environment Canada – Canadian Wildlife Service
Federation of BC Naturalists, Thompson-Okanagan Region
Grasslands Conservation Council of BC
Habitat Conservation Trust Fund
Okanagan College
Okanagan Region Wildlife Heritage Fund Society
Okanagan Similkameen Conservation Alliance
Okanagan Similkameen Parks Society
Osoyoos Desert Society
Osoyoos Indian Band
Osoyoos Lake Water Quality Society
Osoyoos Oxbows Restoration Society
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Penticton Museum and Archives
Royal BC Museum
Southern Interior Bluebird Trail Society
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The Nature Conservancy Canada
The Nature Conservancy, Washington State
The Nature Trust of BC
University of British Columbia, Faculty of Land and Food Systems
University of British Columbia Okanagan

Please visit www.soscp.org for links and information



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Appendix C – Net Gain of Trails Policy

A Net Gain Trails Policy

DRAFT POLICY STATEMENT

Local government shall:

1. Work to provide mechanisms for the ongoing management, retention, improvement and expansion of the existing recreation trail network.
2. Enable the preservation of the existing trail network's overall quality, quantity and experience.
3. Require that when new development or resource uses occur in proximity to existing trails, the trail amenity be protected through best practices in planning, design and management.
4. Only consider the rerouting or redevelopment of an existing trail when protection is not possible due to the pending impacts of new development or resource uses and where the proposed changes have been deemed necessary to achieve other important community objectives.
5. Guarantee a **net gain** to the overall quality, quantity and/or experience of the trail network in the rerouting and redevelopment of existing trails.
6. Apply an experience-based (fun, trail users, scenery, challenge, etc.) rather than only a quantity (length of trail) based approach in the planning and development of new trails. This will allow the desirable qualitative aspects of local trails to be retained.
7. Require that the cost of completing any replacement trails will be borne by the property owner or resource use licensee.
8. Agree to the rerouting or redevelopment of discontinued trails for the replacement trail must be secured prior to final approval of the new land development or resource uses. Cash-in-lieu for trail development will only be considered when it is deemed acceptable to the local municipality).
9. Incorporate the **net gain** for trails approach into an amenity agreement/density bonus policy recognized in municipal Official Community Plans, triggered in conjunction with rezoning and development applications.
10. Work with advisory groups to identify potential trail network expansion and/or enhancement areas that are consistent with, and can be incorporated into, integrated land use processes, regional and/or municipal plans.

Appendix D – Terms of Reference for the proposed Kettle Valley Railway

The Rails to Trails & Parks Committee will secure tenure on the portions of the Kettle Valley Railway that are within the boundaries of the Regional District. Through public input, develop a comprehensive linear park strategy that provides links between the region's communities, parks, schools, shopping areas, and open spaces.

Goals:

1. Identify all sources of funding.
2. Establish consensus upon an equitable funding formula among participating members.
3. Determine priorities of constituents via on-line survey.
4. Development terms of reference for stewardships.
5. Identify short term and long term trail routes.
6. Establish trail construction guidelines.
7. Establish trail signage guidelines.
8. Establish a construction and acquisition program with associated cost estimates.
9. Establish trail use guidelines.
10. Establish guidelines for resolving conflicting uses of trails and bylaws for encroachment.
11. Establish guidelines for acquiring existing trails and associated compensation.
12. Establish guidelines for fostering volunteerism.
13. Establish guidelines for developing relationships with the agricultural, winery, and tourism industries.
14. Establish guidelines for developing relationships with First Nations.

Appendix E - Okanagan Lake Regulation System - Okanagan River Flood Protection Dike: *Background History and System Works*

Introduction

The Okanagan River Flood Protection Dike is a component of the “Okanagan Lake Regulation System (OLRS)” The OLRS is a multi-lake, multi-purpose regulation system owned by the Province of British Columbia, and managed and operated on behalf of the province by the Ministry of Environment. The OLRS regulates mainstem lake levels and river discharges which impact three regional districts, nine municipalities and four First Nations. Since the early 1900’s it has been recognized that effective integrated management of Okanagan Lake and River is critical to ensuring a viable economic base, maintaining a healthy natural environment and enhancing the social betterment of valley residents and visitors. Current management objectives include flood control, water supply, fisheries, aquatic and riparian environmental values, recreation and tourism.

Watershed Description:

Okanagan River has its headwaters in the warm dry southern interior region of British Columbia. The Canadian portion of the watershed is approximately 8,200 square kilometres, stretching from Armstrong in the north to the Canada-USA border near Osoyoos in the south. After crossing the international border, the Okanogan River is joined by the larger Similkameen River, before continuing southward to its confluence with the Columbia River.

Within Canada, Okanagan River links Okanagan, Skaha, Vaseux and Osoyoos Lakes. Kalamalka/Wood Lake is tributary to the north end of Okanagan Lake via Vernon Creek. Okanagan Lake, with a drainage area of 6,090 square kilometres and a surface of 34,000 hectares, is much larger than the other lakes and provides the valley with a large natural reservoir. The lake is approximately 108 kilometres in length, stretching from Vernon to Penticton, with a maximum depth of 250 metres.

The annual inflow of water to Okanagan Lake is dominated by runoff from spring snowmelt. The net average annual lake inflow is 465 million cubic metres, but is highly variable from year to year. Recorded inflows range from a low of 78 to 1400 million cubic metres of water

Background History

Attempts to regulate flow in Okanagan River date back to the early 1900’s. Initial regulatory efforts were undertaken for the sole purpose of improving navigation for shallow draught vessels in the Penticton section of the river between Okanagan and Skaha Lakes. It soon became apparent that regulation of Okanagan Lake could also be used to reduce the impacts of flooding, and to support irrigation and domestic diversions. Over the next several decades a series of dam and river channelization projects were undertaken by the federal government to improve its capability to regulate Okanagan Lake levels and downstream flows.

Following extensive flooding throughout the Okanagan valley in 1942 and again in 1948, the federal and provincial governments appointed a Joint Board of Engineers to study all matters relating to the problem of lake and river control in the Okanagan and to recommend remedial measures. In 1950, the federal and provincial governments responded to public calls for action to mitigate future flood events by signing a “Memorandum of Agreement” to implement the recommendations of the Board.

The implementation included the construction of works referred to as the Okanagan Flood Control Project (OFCP), which now comprise the OLRs. This was the first of many agreements between the two governments regarding management and operation of the OFCP. Construction on the project began in 1950 and was completed in 1958. The cost of construction was shared equally between the two parties.

In 1960 another agreement was signed between the two governments under which the Province agreed to undertake sole responsibility for the operation and maintenance of the OFCS with the costs to be shared equally.

In October 1969 the *Canada-British Columbia Okanagan Basin Agreement* was signed. This Agreement set out the purpose and terms of reference for a four-year preliminary study of the water resources of the Okanagan with the stated purpose of developing “a comprehensive framework plan for the development and management of water resources for the social betterment and economic growth of the Okanagan community.”

In March 1974 the Canada-British Columbia Consultative Board for the Okanagan Basin Agreement issued their main report. The report included the “Comprehensive Framework Plan” which had the stated goals of:

Economic development: To develop water and related resources as required to ensure a viable economic base in the Okanagan.

Environmental Quality: To maintain and enhance the quality of the natural environment through management and protection of water and related resource systems such as fisheries, wildlife and recreational areas.

Social Betterment: To enhance social betterment in the Okanagan by creating a more equitable distribution of income, employment and opportunity between regions within the basin.

The plan was to “achieve a desirable balance between these goals.” It recognized that a balance would only be struck after detailed consultation with a broad representation of public opinion based on discussions of water management alternatives.

The report contained a number of recommendations regarding the management of the water resources of the Okanagan Valley including the operations of the OFCP.

On February 9, 1976, the *Okanagan Basin Implementation Agreement* was signed on behalf of the two senior levels of government by their respective Ministers of Environment. The

Agreement provided for the implementation of a number of recommendations to bring the OFCP up to standard on an equal cost-shared basis; and to transfer the works and responsibility for future operation and maintenance costs to British Columbia.

The repair and upgrading of the works were undertaken between 1976 and 1981. In September 1982, British Columbia accepted sole responsibility and cost for all future operation, maintenance and repair of the works. The Province assigned management responsibilities for the OFCP to the regional office of the Ministry of Environment in Penticton. Although the ministry has gone through several administrative changes since 1982, the Penticton office of the Ministry of Environment continues to manage, maintain and operate the works, now referred to as the OLRS, on behalf of the province.

Okanagan Lake Regulation System Works

The OLRS is comprised of the following works:

- A small control structure at the outlet of Kalamalka Lake near Vernon;
- Dams at the outlets of Okanagan Lake at Penticton, Skaha Lake at Okanagan Falls; and McIntyre Dam two kilometres downstream of Vaseux Lake north of Oliver (Note: McIntyre Dam also includes intake works for the Town of Oliver's irrigation canal);
- Approximately 38 kilometres of flood control channel between Penticton and the north end of Osoyoos Lake (35 kilometres of which are located on a 90 metre wide, fenced right-of-way);
- Approximately 50 oxbow inlet and outlet structures;
- Seventeen vertical drop structures; and,
- Four sediment basins located at the mouths of Shingle, Ellis, Shuttleworth and Testalinden Creeks.
- Four sediment basins located at the outlets of Shingle, Ellis, Shuttleworth and Testalinden Creeks.

Osoyoos Lake is a transboundary lake, located 2/3 in Canada and 1/3 in the United States. The level of the lake is regulated by Zosel Dam, which is located a short distance downstream of the lake outlet, in Oroville, Washington. This structure is licensed to the Washington State Department of Ecology and although its design and construction was funded equally by the province and the state, it is not considered part of the OLRS.

Okanagan Lake Regulation System Management Objectives:

Within the Okanagan there are a number of competing consumptive (agricultural and municipal) and non-consumptive (recreation, aesthetic and fisheries) uses of the valley's limited water resources. The often conflicting requirements of these uses, combined with variability and

uncertainty of water supply, has led to the establishment of a number of management objectives for the OLRs. These objectives include:

8. **Flood Control:** Flood control benefits related to both surface and ground water are provided to low lying properties around Kalamalka/Wood, Okanagan, Skaha, Vaseux and Osoyoos Lakes, as well as properties along Okanagan River between Penticton and Osoyoos Lake.
9. **Water Supply:** Water stored in Okanagan Lake and other valley lakes supports irrigation, domestic and industrial usage in a large number of communities throughout the Okanagan.
10. **Fisheries Values:** Flows in Okanagan River are managed for spawning sockeye salmon and resident fish, while lake levels are managed for shore spawning kokanee. Okanagan sockeye are one of the two largest remaining sockeye runs on the Columbia River.
11. **Aquatic and Riparian Habitat:** Flows are managed to preserve instream and riparian values in Okanagan River and associated oxbows during period of extended droughts.
12. **Recreation/Navigation/ Tourism:** The levels of the mainstem lakes and river are regulated in a manner which is cognizant of the economic and social importance of water based recreation and navigation to the valley's tourism industry.
13. **Okanagan Floating Bridge:** Okanagan Lake levels must be maintained within the accepted tolerance levels of the floating sections of the new bridge.
14. **Dilution Requirements:** Minimum flows are maintained in Okanagan River to satisfy dilution requirements of waste water treatment plant discharges.

In summary, the management of the Okanagan Lake Regulation System is a delicate balance between a broad range of social, economic and environmental issues. In the face of competing interests the system managers must have the technical knowledge, experience, judgement and confidence to manage the system effectively.

Management, Operation and Maintenance Activities

The Table on the following page summarizes the primary OLRs management, operation and maintenance tasks which the Province is responsible for.

A. International and Other Higher Level Management

- Represent Canadian interests as an International Joint Commission appointed member of the International Osoyoos Lake Board of Control regarding transboundary water management issues arising from Osoyoos Lake and the operation of Zosel Dam
- Represent the Province on the international Osoyoos Lake Fisheries Advisory Committee
- Represent the Province, with federal, provincial/state, First Nations and USA industry representatives on major domestic and international fishery and environmental initiatives to “naturalize” the Okanagan River hydrograph and the physical characteristic of the channelized sections for the benefit of fish and other aquatic and riparian values
- Participate in federally study examining the impact of climate change on water management in the Okanagan Basin

B. Operational Management

- Develop annual operating plan based on runoff volume forecast and seasonal targets in the federal/provincial Okanagan Basin Agreement
- Consult with and advise American agencies regarding operational decisions which may impact their management of Osoyoos Lake levels
- Management of Crown land within the OLRs Right-of-way through liaison with Land & Water BC, local governments, licensees, First Nations and interest groups
- Under the Dike Maintenance Act, adjudicate applications of new, replacement and/or repair of private or public works and utilities within OLRs Right-of-way
- Resolving encroachment and trespass issues (e.g., illegal camping, dumping of garbage, unauthorized structures, right-of-way fence removal, etc.)
- Management of OLRs maintenance budget by planning, scheduling and supervising maintenance, repair and upgrading activities
- Management of equipment rental and services contracts
- Ensure operational and maintenance activities are undertaken in accordance with Ministry Safety Policies and WCB Regulations

C. Operations

- Monitor lake levels and river flows throughout system to ensure target levels and flows are maintained
- Adjust releases from dams to maintain balance within system in accordance with annual operating plan and daily fluctuations
- Liaise with federal and provincial fishery agencies and First Nations regarding releases to minimize operational impact on fishery resources
- Adjust inlet and outlet gates to maintain water levels and flows in oxbows to meet habitat requirements and obligations to water licensees and riparian landowners
- Monitoring the buildup of trees and other debris in drop structures to ensure discharge capacity is maintained during periods of high flow to prevent failure of works

D. Maintenance & Inspections

Routine:

- General inspection of dams, drop structures, inlet and outlet works and dikes for debris accumulation, vandalism, public safety issues, etc.
- Maintenance and repair of security lighting, safety fencing, access gates, signage and locks on dikes and dams
- Clearing of trees, beaver blockages and other accumulated debris from drop structures, trash racks, drainage works and dam forebays and logbooms
- Lubrication and routine maintenance of dam and drainage gate operators

Annual:

- Detailed annual inspection of dams including electrical/hydraulic equipment, gate operations, safety concerns, etc.
- Servicing of dam electrical/hydraulic equipment and gate operators
- Detailed annual inspection of condition of dikes, drop structures, drainage works, etc.
- Vegetation management around structures and along dikes, including noxious weed control and hazardous tree removal to protect public and worker safety and to facilitate dike inspection and maintenance
- Repair of dike and/or riprap damaged by erosion, sloughing, sink holes or burrowing animals
- Maintenance and upgrading of safe staff and equipment access to drainage works and other operational sites
- Maintenance of sediment basins including removal and replacement of rock weirs, excavation and disposal of accumulated sediments, maintenance of safety fencing and dust control
- Monitoring of construction projects which may impact integrity of dikes, channel or other works

1 to 5 years:

- Underwater inspection of dams and drop structures
- Upgrading of inlet wet wells to meet current WCB Regulations for “confined space entry”
- Extraordinary inspection and/or repair of structures and dikes following major flood events
- Grading access road on dike to maintain running surface and positive drainage
- Removal of sediment accumulations from forebay of Okanagan Lake Dam
- Replacement or repair of deteriorated drainage culverts and gates on a priority basis

More than 5 years:

- Comprehensive engineering inspection and assessment of the condition of all OLRs works including dams, dikes, drop structures, drainage works to identify exceptional maintenance requirements and/or required upgrades to the works (approximately every 10 years, latest assessment completed in 1999 by Acres International)
- Repair of cracking and other damage to concrete structures (i.e., epoxy injection)
- Removal, overhauling and servicing of gates and gate operators on each of the dams
- Comprehensive surveying of channel to document changes in dike cross sections and channel capacity due to erosion and sedimentation

E. Capital Upgrades or Major Projects

- Undertake major capital upgrades to works identified in 1999 Acres Report
- Possible decommissioning of Vaseux Lake Dam with funding from outside sources

F. Public Information

- Respond to public inquiries and complaints regarding lake levels, flows, operations, dike maintenance, etc.
- Attend and participate in public meetings and workshops with local interest groups and agencies
- Prepare media releases and respond to media inquiries concerning forecast and operations

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