

Knox Mountain Park Management Plan 2011

November 2011



HISTORY

INTERPRETATION

WILDLIFE

PARKS

CONNECTIONS WITH NATURE

SUSTAINABILITY

OKANAGAN SUNFLOWERS

ENVIRONMENT

RECREATION

CITY WIDE PARK

CONSERVATION

PINE BEETLE

RESTORATION

NATURE

TRAILS

GRASSLANDS

PRESERVATION FOR FUTURE GENERATIONS

*The ages have been at work on it and man can only mar it.
What you can do is to keep it for your children, your children's
children, and for all who come after you.*

American President Theodore Roosevelt

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Author's Note

The Knox Mountain Park Management Plan 2011 (the Management Plan) was developed by Outland Design Landscape Architecture together with Juliet Anderton Consulting Inc. and Ecoscape Environmental Consultants Ltd., with the collaborative efforts of departments within the City of Kelowna's Community Sustainability and Community Services Divisions.

Kelowna's City Council endorsed the Management Plan through Council Resolution on November 14, 2011 directing staff to use the Management Plan as a guide to follow in future planning for the park; and directing staff to consider that appropriate priority to be given to the management of Knox Mountain Park in the development of the new long-term capital plan.

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1.0 EXECUTIVE SUMMARY

The City of Kelowna 2011 Knox Mountain Park Management Plan provides sound guidance for the overall management of Knox Mountain Park for the next 10 to 15 years. The Management Plan establishes a framework for City decision-making with respect to park operations and maintenance, and it provides a strategic approach to park development and capital investment.

The primary focus of this Management Plan is on restoring natural resources, followed by protecting these natural resources and finally by modestly improving user amenities. This plan also underscores the City's commitment to public involvement and sets out avenues for community partners to participate in park activities.

The Management Plan's Vision clearly and concisely conveys the desired future for this important natural area park; the Vision reads:

Knox Mountain Park reveals the wonder and diversity of the Okanagan landscape. It is symbol of Kelowna, a place of unique and remarkable natural beauty within our city's park system, a place where nature is able to flourish and evolve. Residents and visitors participate in the life of the park, establishing healthy and sustainable relationships between themselves and the natural environment.

Strategic Goals – addressing the park's role as “a place for nature”, “a

place for people”, and “a place for stewardship” – articulate specific directions necessary to achieve the plan's Vision. The core tools to achieve the intent of the plan include: Park-Wide and Zone-Specific Policies; and a Park Management Plan made up of a Development Plan and an Operations and Maintenance Plan. The document concludes with a proposed four-phase Implementation Program, extending out to the year 2026.

The City of Kelowna was motivated to initiate the preparation of the Management Plan to incorporate new lands acquired by the City into a strategic planning framework for Knox Mountain Park (approximately 157 hectares has been added to the park since the preparation of the 1999 Management Plan). The City was also motivated to address a wide range of key issues affecting the park, many of which relate directly to the impact of users on the park's environmentally significant areas, and will likely intensify as the number of park users increases over time.

Of central concern to park managers was the impact on sensitive forested park areas and grasslands (and the related impacts on wildlife) from the proliferation of unsanctioned hiking and cycling trails. Other key challenges for park managers included managing vehicle access, pedestrian access, and other activities along the perimeter of the park (e.g., illegal dumping, the encroachment by abutting private property), regulating dog behavior, managing users

conflicts (e.g., between motorized and non-motorized road users, and between cyclists and hikers), and ensuring consistency between special events and the environmental integrity of the park.

The Management Plan's Park-Wide and Zone-Specific Policies establish a clear direction to park uses and managers, and a clear code of conduct for park users. The park's Development Plan and Operations and Maintenance Plan work together with and are supported by park Policies.

The Park Management Plan includes the following components:

Development Plan

- Component 1: Rezoning all Park properties to P3 - Parks and Open Space
- Component 2: Protection of the Conservation Zones
- Component 3: Protection of the Okanagan Lake Foreshore
- Component 4: Implementation of a new Sanctioned Trail Network and Points of Access Plan
- Component 5: Creation of Sanctioned Single-Use and Shared-Use Trails
- Component 6: Improved Access for Vehicle-Free Recreation on Knox Mountain Drive
- Component 7: Creation of a Sanctioned Off-Leash Dog Exercise Area
- Component 8: Enhancement of the Ellis Street Gateway
- Component 9: Parking and Trail Access Improvements at Lookouts and Staging Areas
- Component 10: Infrastructure Improvements to Support Park Operations
- Component 11: Provision of User Services
- Component 12: Provision of permanent washrooms adjacent to Crown / Lower Lookout

Operations and Maintenance Plan

- Component 1: Provision of Internal Resources for Plan Implementation
- Component 2: Engaging the public
- Component 3: Development of an annual Operations Plan
- Component 4: Undertaking a Personal Safety Assessment and Remediation of Serious Hazards
- Component 5: Preparation of an Urban Wildlife Management Plan
- Component 6: Establishing a Plan Monitoring Framework

Priorities for implementation were determined, high level cost estimates were prepared and tasks were broken down into four phases for both capital development and operations and maintenance.

Staff anticipate that the capital development plan will be funded from the City's capital budget and that the four phases will be implemented over a 15 year time frame. Conscious effort was put into ensuring that the proposed annual cost for park capital development over the next 15 years averages approximately \$200,000 per year. Capital development costs for each phase are estimated at: Phase 1 (2012 through 2015) \$950,000; Phase 2 (2016 through 2018) \$420,000; Phase 3 (2019 through 2021) \$640,000; and, Phase 4 (2022 through 2026) \$990,000.

In order to support ongoing operations of these capital improvements and all park infrastructure at Knox Mountain Park an operating budget has also been prepared and broken down into the same four phases: Phase 1 (2012 through 2015) \$918,730; Phase 2 (2016 through 2018) \$680,580; Phase 3 (2019 through 2021) \$959,330; and, Phase 4 (2022 through 2026) \$1,411,300. These estimates for ongoing base operations specific to Knox Mountain Park increase incrementally and include one time operating requests for such items as rock scaling and re-paving of Knox Mountain Drive.

Investment in the full-scale Implementation Program of the Management Plan, including all Development Plan and Operations and Maintenance Plan components is estimated at \$6.97 million, over 15 years with \$ 3,000,000 attributed to new capital development and \$3,969,940 attributed to ongoing Operations and Maintenance.

These budgets will be considered and weighed against other priorities in the long-term capital plan and provisional budget submissions in future years. It should be made clear that funding is not assured, but this information helps to educate everyone on the real cost implications of park stewardship and maintaining the value of our assets. If projects cannot be achieved in the year specified due to budgetary allocations, specific projects will be deferred to the following year.



2.0 INTRODUCTION

The 2011 Knox Mountain Park Management Plan (“the Management Plan”) guides the overall direction for Knox Mountain Park over the next 10 to 15 years. The Management Plan provides sound guidance for park managers within the City of Kelowna and seeks to engage community partners and individuals in efforts to achieve the Vision for the park.

The Management Plan is a strategic, forward-looking document that provides an integrated and sustainable approach to park planning. It is designed to sustain and improve the environmental health of Knox Mountain Park for future generations while enhancing visitors’ experiences within the park. The Management Plan provides a framework for investment in environmental conservation and reversing environmental degradation, investment in the park’s recreational attributes, and investment in improvements that draw attention to the park’s natural and cultural features and the surrounding landscape of the Okanagan Valley.

Solid groundwork for the 2011 Management Plan was set in 1999 through the preparation of the first Management Plan for Knox Mountain Park (Companion Document 1: 1999 Knox Mountain Park Management Plan). Since that time, the park boundaries have been significantly expanded (and although the 1999 plan embodied a similar values framework for Knox Mountain Park as the plan within, this update provides an opportunity to breathe new life into the goals and objectives set by the 1999 plan and to establish current priorities for implementation). The updated Park Management

Plan benefits from what we have learned since the 1999 plan was prepared, including the rich knowledge of current environmental conditions in the park, the information and direction of studies and plans completed since 1999 and the insights of today’s park users and the public. The Park Management Plan responds to current pressure on the park from park users and is proactive in planning for the higher volumes of users anticipated in the future.

Two parkland acquisitions have occurred since 1999: a 1.2 hectare parcel in Magic Estates, and a 81.5 hectare parcel around Kathleen Lake. The City owned parcels 23 and 24 on Grainger Road (74.14 ha) have also been designated as parkland.

A range of tools are drawn upon to make the Park Management Plan a reality. The City of Kelowna, as the property owner and ultimate manager and steward of the park, retains the primary responsibility on behalf of the citizens of Kelowna to manage park infrastructure, operating and maintenance spending, and to create and enforce operating regulations. Through the Management Plan process the City has sought input from stakeholder groups, park users, and the general public on the Management Plan; as part of the direction for implementation, the Management Plan emphasizes the key roles these stakeholders could play as park stewards. As individuals and groups these stakeholders have the potential to participate in semi-annual meetings, in educational outreach activities and in the restoration and monitoring of the park’s ecological health.



3.0 CURRENT SITUATION - Where We Are

3.1 Introduction

Knox Mountain Park is the City of Kelowna's largest Natural Area Park. The park is 310 hectares (766 acres) in size (inclusive of the Grainger parcel) and is located immediately north of Kelowna's downtown at the north terminus of Ellis Street (Figure 1: Location Map). Mount Knox has a single summit with a number of secondary summits and ridgelines. The peak of Mount Knox rises approximately 646 metres above sea level, and approximately 300 metres above the high water mark of Okanagan Lake. While the shoreline of Okanagan Lake borders almost 1400 metres of the western park boundary, much of the remaining boundary is surrounded by residential development. The size, height, central location and natural amenities make this natural area a highly desirable destination for residents and tourists alike.

The majority of the park is composed of natural areas including coniferous woodlands, grasslands, bedrock outcrops, cliffs and gullies, and small riparian areas primarily along Okanagan Lake. Two wetlands exist in the park, including Kathleen Lake (a 2.0 hectare permanent water body near the eastern park boundary), and a discharge basin in a topographic low point.

The park supports numerous activities, including: walking, running, hiking and long boarding; road, cross-country and downhill mountain biking; nature appreciation and sight-seeing (Figure 2: Current Land Use, Road and Trail Network). In the winter, visitors can cross-country ski and snowshoe on Knox Mountain Drive and the sanctioned trail

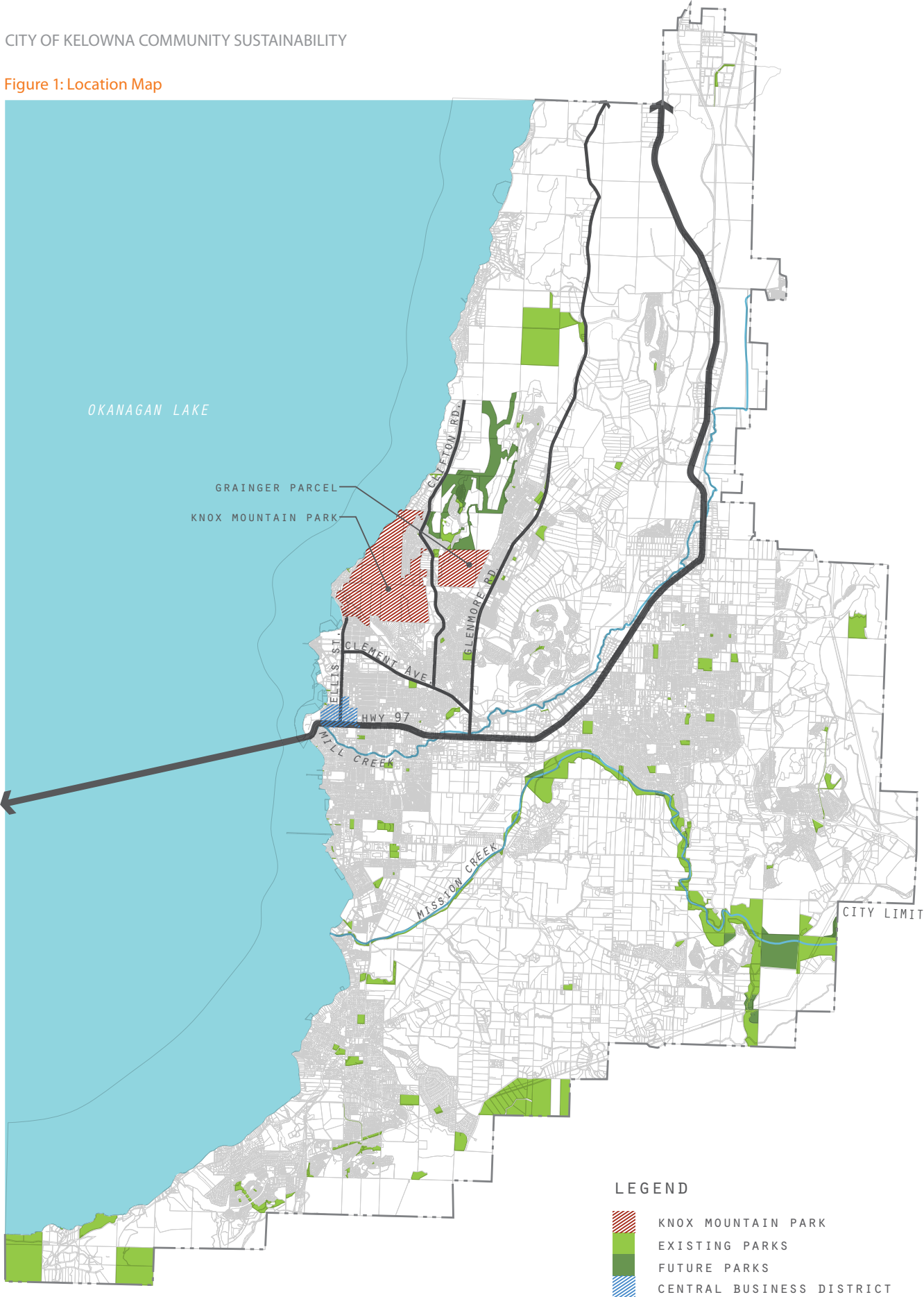
network. The gateway to the park, at the north terminus of Ellis Street, features recreation activities including tennis, disc golf and an off-leash dog run. Sutherland Park, a City-wide park at the base of Knox Mountain along Okanagan Lake's waterfront, includes grassy fields, picnic areas, a playground, a boat launch, and washrooms.

Knox Mountain Drive is the only road within the park that is accessible by private vehicle. It extends from the base of the park entrance near Sutherland Park, past the Crown / Lower Lookout and trail head to Paul's Tomb, and up to the Pioneer Pavilion and caretaker's residence at the park apex. Just before the park apex a wetland and playground area is accessible by way of a trail. The former paved vehicle access to the playground has been closed.

Knox Mountain Park can be seen at great distances, from many vantage points around the region. Views to the park provide an aesthetic dimension to Kelowna's landscape, and views from the park allow park visitors to appreciate the stunning scenery of the region's farms, orchards, vineyards, natural areas, and Okanagan Lake. The trails that wind through the park give visitors a close-up view of flora and fauna, some typical and symbolic of the Okanagan region and some rare within the region. The park makes an ideal location to express and share the tangible and intangible natural and cultural resources that define Kelowna's identity and sense of place.

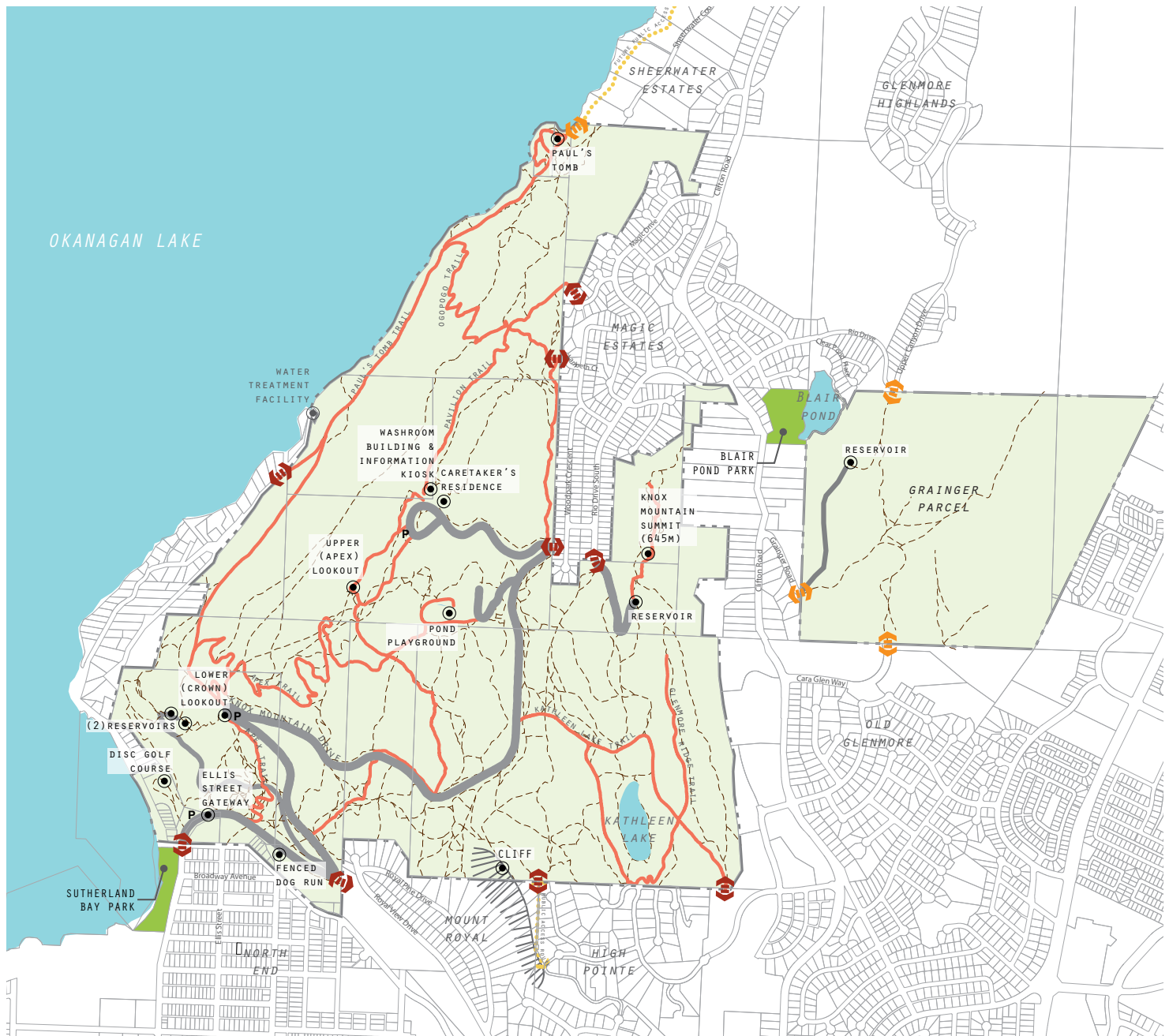
The natural environmental value of Knox Mountain Park has been well documented in Kelowna's planning studies, including the

Figure 1: Location Map



LOCATION MAP
N

Figure 2: Current Land Use, Road and Trail Network



CURRENT LAND USE, ROAD & TRAIL NETWORK



LEGEND

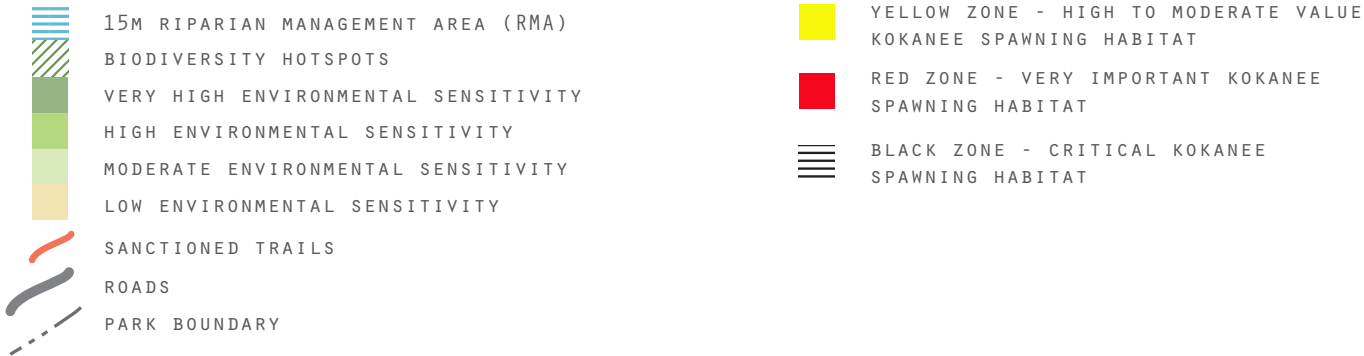
- SANCTIONED TRAILS
- UNSANCTIONED TRAILS
- ROADS
- SANCTIONED ACCESS POINTS (EXISTING)
- SANCTIONED ACCESS POINTS (FUTURE)
- PARK BOUNDARY
- POINT OF INTEREST

Figure 3: Environmentally Sensitive Areas



ENVIRONMENTALLY SENSITIVE AREAS

LEGEND











recent baseline biophysical inventory and environmental overview conducted as part of the Management Plan process (Figure 3: Environmentally Sensitive Areas and Companion Document 2: 2010 Biophysical Inventory/Environmental Overview, Knox Mountain Park). The park is an important part of the natural systems that help cool the city's neighbourhoods, filter the city's water, clean the city's air and sequester the carbon produced by cars, homes and industries.

The park itself is made up of numerous ecosystems with varying levels of rarity, fragility and importance. In addition to enhancing visitors' experiences in the park, these ecosystems support numerous plant and wildlife species, both those that are rare and those that are typical to the region. Rare wildlife species known to inhabit the park include the Swainson's Hawk, a provincially Red-listed species documented during the 2009 spring inventory. The Great Basin Gopher Snake, Flammulated Owl, Great Blue Heron, and Barn Swallow are provincially Blue-listed wildlife species that potentially

occur in the park. Richardson's Penstemon and Freckled Milk-vetch were respectively documented as Blue-listed and Red-listed plant species in the 1999 Management Plan but are currently on the Yellow-list.

Ninety percent of the park is classified as having either "High" or "Very High" levels of environmental sensitivity. The park's steeply sloping mature coniferous woodland and open grassland ecosystems account for much of the "Very High" sensitivity. Other areas of special concern include sparsely vegetated rock outcroppings, Kathleen Lake, and 1400 metres of Okanagan Lake shoreline, (including over 1100 linear metres of critical Kokanee spawning zone). The Okanagan Lake foreshore, riparian fringe and wetland communities do not occupy a significant land mass in the park; however, these unique ecosystems are extremely important to the overall biodiversity of the park.

Figure 4: Known or Potential Species at Risk within Knox Mountain Park

Common Name	Scientific Name	COSEWIC status	Provincial Yellow List (conservation concern)	Provincial Blue List (special concern)	Provincial Red List (threatened / endangered)
Great Basin Gopher Snake	<i>Pituophis catenifer deserticola</i>				
Flammulated Owl	<i>Otus flammeolus</i>	Special Concern			
Great Blue Heron	<i>Ardea Herodias</i>	Special Concern			
Barn Swallow	<i>Hirundo rustica</i>	Threatened			
Lewis' Woodpecker	<i>Melanerpes lewis</i>	Threatened			
Swainson's Hawk	<i>Buteo swainsoni</i>				
Richardson's Penstemon	<i>Penstemon richardsonii</i>				
Freckled Milk-Vetch	<i>Astragalus lentiginosus</i>				

The condition of most of the ecosystems within the park is classified as “Good” or “Excellent”. Significant human-made disturbances to former natural areas (other than the cutbanks required to accommodate Knox Mountain Drive) are generally minimal throughout most of the park. Invasive plants, for the most part, are limited to areas adjacent to roads and trails. The park’s intact grasslands, with minimal evidence of grazing by domestic livestock, are especially noteworthy, as they are a rarity within the Okanagan. Central risks and challenges to the environmental integrity of the park are fire prevention, disease, noxious weed and pest infestations (such as the western and mountain pine beetle), and the proliferation of unsanctioned trails across sensitive grassland ecosystems.

3.2 Key Issues

There are a number of key issues related to the effective management of Knox Mountain Park. Many issues relate to concern about the impact of park users on environmentally sensitive areas (ESA). Key issues include:

- Unrestricted Park-Wide User Access
- Proliferation of Unsanctioned Trails
- Off-Leash Dog Impacts
- Biking Impacts
- Park Rental and Special Events Management
- Perimeter Access Management and Interface Conflicts
- Utility Impacts
- Future Ridge Road

3.2.1 Unrestricted Park-Wide User Access

All areas of the park are currently accessible to users (Figure 2: Current Land Use and Trail Network). However, park users seem unaware of the impacts of unfettered access on the park’s terrestrial and aquatic environmentally sensitive areas. These areas are sensitive to alteration by human actions and are generally slow to recover from disturbance.

3.2.2 Proliferation of Unsanctioned Trails

The park contains approximately 60 km of trails; of which approximately 43 km are unsanctioned (Figure 2: Current Land Use and Trail Network). The proliferation of unsanctioned trails has contributed to the overall degradation of the terrestrial environment of the park.

3.2.3 Off-Leash Dog Impacts

The City of Kelowna looks for opportunities to provide dogs and their owners with areas in the park system in which to exercise and socialize with other dogs and owners. There are currently 75 parks that allow dogs and seven are sanctioned off-leash parks. Within Knox Mountain Park dog owners are currently restricted to exercising their dogs on leash except in one designated off-leash dog exercise area. This regulation is not universally observed and off-leash dog activity is impacting environmentally sensitive areas. Of particular concern is: injury to wildlife caused from being chased by dogs off-leash; the potential damage to Kokanee spawning areas along the shoreline from dogs entering Okanagan Lake; public health issues when dog owners do not pickup after their dogs; and low compliance with dog licensing requirements.



3.2.4 Biking Impacts

Three forms of biking occur in the park: downhill mountain biking, road biking (on Knox Mountain Drive) and cross-country mountain biking. The off-road forms of biking are currently unregulated; however, the desire for this form of recreation has resulted in users establishing their own trail patterns throughout the park, resulting in conflicts and impacts on the environment.

3.2.5 Park Rental and Special Events Management

The park hosts numerous single and recurring active and passive recreational events. There is a distinction between park rentals (e.g. for casual use such as wedding ceremonies, etc.) and outdoor events requiring a permit (i.e., those that limit park access by road closures etc.). There are currently five key booking areas in Knox Mountain Park (no events are booked at Paul's Tomb due to liability issues associated with its isolated location and risks of man-made fires):

- Crown / Lower Lookout
- Apex / Upper Lookout
- Former Government Campground (Disc Golf Course by Sutherland Bay)
- Pioneer Pavilion
- Knox Mountain Drive

The following are examples of events in the park that require bookings:

- COBRA Cycling Event
- Rental of Pioneer Pavilion for wedding ceremonies (one per week and one per weekend only)
- Knox Mountain Hill Climb
- K-Town Classic Road Biking Event
- Peak to Beak Half Marathon
- Disc Golf Tournament
- Kelowna Apple Triathlon

The City of Kelowna's Recreation and Cultural Services Division manages park rentals and special event bookings. Rental fees and damage deposits are charged according to the Recreation Fees and Charges Bylaw # 9609. Events are authorized through outdoor event and park rental permits and bookings are granted following consultation with the Parks Services Division and the Outdoor Events Committee. As a minimum, the City's Parks Community Relations Coordinator is responsible for conducting pre-event and post-event inspections of parks to assess potential hazards and risk management concerns for public events, ensuring timely follow-up with corrective measures to minimize public safety risks and protect park assets.



3.2.6 Perimeter Access Management and Interface Conflicts

The park has one primary vehicle and pedestrian entrance, and 9 existing secondary public pedestrian entries that are sanctioned, around the park perimeter. There are 16 linear kilometres of park frontage (including the Grainger parcel).

Regulating access along this frontage and sustaining the park boundary is a challenge, as is the ability to manage negative impacts, such as illegal dumping, encroachment by abutting private property, illegal access into the park by motorized vehicles at unsanctioned locations, fire risk and trespassing on private properties.

3.2.7 Utility Impacts

Above-ground and subsurface utilities are located in the park in the form of reservoirs, transmission pipes, overhead wires and communications towers, with varying degrees of impact to visual quality and the terrestrial environment. Ideally, park parcels and properties zoned for parks should be free and clear of any encumbrances such as utilities that provide no park benefit.

Upgrades to an existing water main is planned within five years between the lower Knox Reservoirs and Royal View Drive. Additionally the lower Knox Mountain Reservoir site has been identified for the

construction of a water filtration facility. This is planned for a time frame of 10 to 20 years, although construction could be ordered by the Interior Health Authority at any time. Compensation and mitigation measures will be required for both projects to ensure net park and / or environmental gain is achieved.

3.2.8 Future Ridge Road

Prior to designation of the Grainger Road parcels as park, the City's 20 Year Servicing Plan identified construction a new collector road through these parcels to be constructed between 2025 and 2030. If constructed, this road would be developer financed, and would service communities in Wilden and the Glenmore Highlands. A decision may be made in the future to abandon this requirement, but a full review of the build out of Wilden and how it is accessed with capacity, safety and wildfire in mind would need to be conducted. If determined that a road is still necessary, an alternative solution in a different location would be preferred from a park standpoint as it would not divide the park site in half and would not compromise areas of high environmental sensitivity.



4.0 VISION AND STRATEGIC GOALS - Where We Want to Be

4.1 Introduction

The Vision and Strategic Goals of the Knox Mountain Park Management Plan clearly communicate the destination the Management Plan is working towards. They form the foundation for the Plan's Policies and Management Concept. Through the lens of the Vision and Strategic Goals, and a pragmatic approach to available resources, a realistic 10 to 15 year planning framework can be established for the park.

The Vision and Strategic Goals for the Knox Mountain Park Management Plan have been developed based on public involvement, consultation with City of Kelowna representatives, and research on best practices for the management of Natural Area Parks.

4.2 Vision

The vision statement for the Knox Mountain Park Management Plan clearly conveys the intended direction for the park. It guides the nature of decisions affecting the park, motivates those responsible for implementation, and shapes the public's understanding of why they should work to achieve the strategic goals for the park.

Knox Mountain Park reveals the wonder and diversity of the Okanagan landscape. It is a symbol of Kelowna, a place of unique and remarkable natural beauty within our city's park system, a place where nature is able to flourish and evolve. Residents and visitors participate in the life of the park, establishing healthy and sustainable relationships between themselves and the natural environment.

4.3 Strategic Goals

The Strategic Goals of the Knox Mountain Park Management Plan expand upon the Vision for the park. These goals identify what the Management Plan seeks to accomplish over the next 10 to 15 years.

The Strategic Goals are organized into three categories:

- A Place for Nature,
- A Place for People, and
- A Place for Stewardship.

The remainder of this section sets out the Strategic Goals within each category, (goals are not in order of priority; goal numbers are included for reference purposes only).

4.3.1 A Place for Nature

Knox Mountain Park should be a living example of how human recreation can coexist with protection of sensitive ecosystems. The Strategic Goals within the “Place for Nature” category outline the desire to protect the park’s natural systems.

Species and Genetic Diversity

Goal 1 - To protect unique, rare, threatened and endangered plant and animal species, including those that are locally, regionally, nationally, and internationally significant.

Terrestrial Habitat Quality

Goal 2 - To complete a network of protected areas that represent the diversity of ecosystems within Knox Mountain Park and serve as ecological benchmarks.

Goal 3 - To maintain and restore native bird communities through the protection and management of vegetation.

Goal 4 - To reduce sources of human-caused wildlife mortality that threaten the viability of wildlife populations in the park.

Goal 5 - To protect and expand wildlife corridors with physical connections between the Park and the Glenmore Highlands as opportunities arise.

Goal 6 - To maintain and, where feasible, restore native grassland and vegetation communities and to protect rare and at risk plant species.

Goal 7 - To control or eliminate non-native species that threaten native plant species and communities.

Goal 8 - To maintain forest health in a manner that is both sensitive to the ecosystem and consistent with sustainable forest management practices through such measures as the removal of pine beetle infested trees and forest fuel management.

Aquatic Ecosystem Habitat Quality

Goal 9 - To maintain the biodiversity of the park’s aquatic ecosystems.

Goal 10 - To protect the features, functions and conditions of the park’s riparian / waterfront areas for the vital role they play in lake and wetland health and productivity.

Geology and Landforms

Goal 11 - To protect geological and physical features .

4.3.2 A Place for People

Knox Mountain Park is a place for people. The park provides inspiration for artists, day use sightseeing, physical recreation opportunities and other quality of life benefits. Whether one visits the park regularly or merely appreciates the view to it while going about one’s daily routine, the mountain is part of Kelowna’s physical identity and sense of place.

The Strategic Goals within the “Place for People” category outline the intention to continue to offer a range of recreational opportunities while clearly defining the recreational conduct necessary to respect the park’s natural setting.

Recreational Variety

Goal 12 - To maintain the wide variety of sanctioned recreational opportunities and to enable visitors with varying interests to enjoy the park.

Goal 13 - To increase active recreational opportunities along Knox Mountain Drive and reduce pedestrian, cyclist and vehicle conflicts on the Drive.

Recreational Conduct

Goal 14 – To use communication and education to encourage users to enjoy the park in a manner that respects the park’s natural environment.

Designated Recreation Areas

Goal 15 – To define and clearly communicate to the public areas of high environmental sensitivity, the importance of ESA’s (Environmentally Sensitive Areas), and to direct recreational use away from these areas.

Parking Management

Goal 16 – To direct parking to locations within the park where recreational use is encouraged and eliminate informal parking where recreational use is discouraged.

Access Management

Goal 17 – To provide designated pedestrian and bicycle access points to and from existing and future residential areas, (see Figure 2).

Goal 18 – Where possible, to increase access opportunities in the park for people with disabilities (PWD).

Goal 19 – To provide, where possible, appropriate access routes for wildfire management, urban forest management, and park maintenance.

Personal Safety

Goal 20 – To educate park users about physical risks and encourage mindful and prudent behavior.

Goal 21 – To identify and correct serious hazards to personal safety along designated trails and zones of intensive use.

Goal 22 – To provide safe, clean, potable drinking water facilities for City of Kelowna residents.

Natural Landscape Aesthetic

Goal 23 – To protect from human alteration, the beauty of the park’s natural landscape as seen from viewpoints around the

City and from within the park.

Prohibited Activities

Goal 24 – To take proactive and targeted measures to ensure prohibited activities do not take place in the park (e.g. vandalism, littering, dumping of yard waste or pool water, campfires, encroachment of fencing or buildings on parkland, and unauthorized vehicle access).

Special Events

Goal 25 – To support the role of the park as host to special events that are consistent with respect for the park’s natural environment.

4.3.3 A Place for Stewardship

The realization of the Management Plan’s Strategic Goals becomes possible with a commitment to park stewardship by those centrally responsible for managing park operations, (i.e., the City of Kelowna), as well as non-government stakeholder groups with an interest in the park. The category of “A Place for Stewardship” includes the Strategic Goals for mobilizing collective resources and encouraging community investment in Knox Mountain Park.



Communication and Education

Goal 26 – To pursue opportunities within existing regional and municipal communication and education programs, and to explore new methods that will advance the Vision and Strategic Goals for the park.



Enforcement

Goal 31 - To provide the means necessary for an adequate level of enforcement to occur within the park ensuring that park users are following bylaws, (e.g., no smoking, dogs on-leash, no motorized vehicles on trails etc.).

Goal 27 - To implement directional signage, educational display material, and physical barriers within the park to advance the park's Vision and Strategic Goals.

Public Engagement

Goal 28 - To engage user groups, service clubs, conservation interest groups, and those recreating in the park to volunteer through a park stewardship program.

Monitoring

Goal 29 - To monitor and report on the state of Knox Mountain Park regularly and consistently.

Fair and Transparent Processes

Goal 30 - To ensure management decisions on special events and proposals for new uses in the park are consistent with the Management Plan and are made in a timely and fair manner that is consistent in approach.



5.0 PARK MANAGEMENT PLAN - How We Get There

5.1 Introduction

The Park Management Plan describes the means to be used to achieve the park Vision and Strategic Goals, and is composed of three sections: Policies, (both those that are park- wide and those that are zone-specific); a park Development Plan; and an Operations and Maintenance Plan.

5.2 Policies

5.2.1 Park-Wide Policies

The following policies largely apply to the ongoing management and operations of the park, however, some provide specific direction to the construction and restoration activities proposed by the Development Plan (see Figure 9: Development Concept Plan).

1. Dogs are permitted in the park on-leash, and on sanctioned and designated trails only. The only exception is within the park's designated off-leash dog exercise areas.
2. During winter months, Knox Mountain Drive will be closed to vehicular traffic. During summer months, the Drive will be open between the hours of 9:30 AM and 9:00 PM Monday to Saturday, and 12:00 PM and 9:00 PM on Sunday, except during approved special events. This is to allow for increased access by walkers and cyclists. These hours may be subject to change pending

Staff recommendations and Council Approval.

3. Downhill and cross-country mountain biking will be permitted on designated trails only.
4. New infrastructure adjacent to the waterfront, i.e., trails etc., will be set back a minimum of 15 metres from the 343 metre high water level of Okanagan Lake, in keeping with the Riparian Management Areas as set out in the Kelowna 2030 Official Community Plan.
5. All new utility installations will:
 - a) ensure a net benefit to the park and consistent with the Strategic Goals of this Management Plan;
 - b) be subject to an environmental development permit approval process, including the preparation of an environmental management and monitoring plan;
 - c) require the retention of qualified environmental professionals to monitor construction practices;
 - d) locate associated structures on existing disturbed areas only and route linear utilities under existing roads, trails and paved surfaces only;
 - e) locate and design structures to have no negative visual impact from sight lines within and to the park;
 - f) ensure complete landscape restoration of any disturbed

area to include long-term plant viability, no erosion issues and no noxious weeds; and,
g) include a public consultation component.

6. All special events within the park will be subject to the ongoing outdoor event permit process, and a damage deposit will be required. The amount of the damage deposit (which typically ranges between \$500 and \$15,000) will depend on the impact to the natural environment, the size of the event and the event organizer's track record. Site inspections will be carried out prior to release of the deposit and the costs to repair any damages will be deducted from the deposit.
7. Safe maintenance access to the wildland urban interface will be provided where possible and will be constructed in a manner that utilizes existing circulation routes and limits the access footprint to areas rated as moderate or low environmental sensitivity (Figure 3: Environmentally Sensitive Areas).
8. The removal of forest health suspect trees and wildfire fuel materials will incorporate financially sustainable and low impact best management practices to minimize erosion and damage to the terrestrial environment. To reduce potential impacts, large scale removals will be conducted only in the winter months when the ground is frozen or has snow cover. Particular caution will be used in areas of high environmental sensitivity. Environmental Development Permits will be required for fuel modification in ESA's and Hazardous Conditions Development Permits will be required for areas of steep slopes (i.e., > 30%).
9. Where trails are upgraded or where new trails are constructed, implementation will meet the trail classification system requirements of the City of Kelowna Linear Park Master Plan, consider ESA's, consider opportunities for universal accessibility, be constructed of natural and permeable trail surfacing materials, and be constructed to IMBA trail standards.
10. Visitor access to the park is restricted only to sanctioned points of access (including the designated main entry and the secondary entries).
11. Visitor motor vehicle access through the park or into the park

from adjacent private property, excluding the existing main access road, is prohibited.

12. Signage installed within the park will be sympathetic to the natural environment in the choice of materials, sign frequency, colours and other design elements, will include tamper proof hardware and will comply with the City of Kelowna Natural Area Park Sign Guidelines.
13. The Paul's Tomb cultural site will be featured through use of interpretive signage but will remain protected in its current state.
14. Park bylaws and code of conduct will be clearly communicated and enforced through visitor education, signage and fines.
15. Signage to enhance and aid users' experiences in the park will incorporate a hierarchy of signs including:
 - a) Entry Sign
 - b) Kiosk
 - c) Trailhead
 - d) Simple Trail Junction
 - e) Complex Trail Junction
 - f) Trail Marker
 - g) Interpretative Sign
16. Prohibited and Restricted Activities
Please refer to Figure 5 for a list of prohibited and restricted activities in the park.



Figure 5: Prohibited and Restricted Uses

PROHIBITED ACTIVITY	EXCEPTIONS
ATV, Dirt Bike Use	City maintenance vehicles permitted
Equestrian Use	
Camping	
Dumping & Disposal	
Fires, Barbecues, Stoves	Approved prescribed burns by City staff permitted
Model Airplanes	
Off-Road Vehicle Use	City maintenance/emergency vehicles permitted
Overnight Parking	
Hunting, Trapping	Hazard animals (i.e. coyotes, bears) by authorized staff
Parties	Events authorized by City permit (e.g. birthday parties, corporate picnics, etc.)
Rock Climbing	
Smoking	
Snowmobile Use	
Utilities & Infrastructure	Only within RE-1 zone, new utilities not of benefit to park not permitted
Boats	
Commerical Uses	Sponsored events that are open to public registration and authorized by City permit

RESTRICTED ACTIVITY	CONDITIONS OF USE
Bicycle Races	As approved by City, on designated routes only
Field Trips	School, community and naturalist groups
Knox Mountain Hill Climb	Permitted once per year, subject to damage deposit, City impact assessment and approval
Orienteering	Permitted once per year, subject to damage deposit, City impact assessment and approval
Non-Disruptive Research	Only as approved by City
Community Events	Subject to City impact assessment and approval
Tour Buses	Only permitted access to Crown Lookout during scheduled road closures
Wedding Ceremonies	As approved by City, in designated locations only, to a maximum 75 people
X-Country Foot Race	As approved by City, on designated trails only
Mountain Biking	As approved by City, on designated trails only (except Natural Area Park Coordinator)
Dogs	As approved by City, on designated trails only, according to leash restrictions
Swimming	As approved by City, in designated locations only

5.2.2 Zone-Specific Policies

► Park Zoning Concept

Knox Mountain Park is made up of different ecosystems with varying degrees of sensitivity, ecological importance and existing disturbance. The park also has established built infrastructure and utilities and an existing pattern of recreational access and use. The park Zoning Concept is based on what is known about the park's natural and built environment, pattern of use, and the Vision and Strategic Goals of the Management Plan. The Zoning Concept provides direction to the management, use, and development of the park on an area-specific basis; as a whole, the Zoning Concept enables the preservation of environmentally sensitive areas while focusing existing and future recreational use, access infrastructure, and further alteration of the natural environment to less sensitive areas and areas with existing disturbance. The park Development Concept Plan (Figure 9: Development Concept Plan) is based on, and reinforced through, the direction of the Zoning Concept.

The Zoning Concept delineates four management zones (Figure 6: Park Management Zones). Each zone has a different objective and a series of associated policies. The zones are detailed in the following sections include:

- Conservation Zone (CON Zone)
- Nature Zone (NA Zone)
- Access Zone (A Zone)
- Recreation Zone (REC Zone)

► Conservation Zone (CON Zone)

The Conservation Zone (CON Zone) includes areas of high environmental sensitivity that are both highly fragile and sensitive to human disturbance. Specifically, the Zone includes: the South-West Slopes Grasslands (CON-1), the North-West Slopes Coniferous Woodlands (CON-2), Kathleen Lake (CON-3), a portion of the Grainger parcel (CON-5), and the Okanagan Lake (CON-4). The objective for this zone is to protect provincially significant natural ecosystems for their intrinsic value, their contribution to the park's biodiversity and for long-term public appreciation. The following policies provide direction to management of the natural environment within the CON zone.

CON Zone Policies

CON Policy 1: Public access to or through this zone is not permitted except through prior authorization by the City and typically only for the purpose of non-disruptive scientific research through designated controlled access points.

CON Policy 2: No further alteration of the natural landscape is permitted except as required for human safety, monitoring and maintaining the environmental integrity of the area, or restoring disturbed areas (e.g., unsanctioned trails) to reflect the natural condition of the surrounding landscape.

CON Policy 3: Mature trees including those that are dead and/or decaying are to be left standing unless they pose an immediate public safety hazard or will contribute to the spread of infestations or epidemics.

CON Policy 4: Habitat enhancements for Rare and Endangered species, (e.g. construction of nesting platforms, nest boxes, etc.) are permitted.

CON Policy 5: No overland storm water is to be directed to these areas from future urban development.

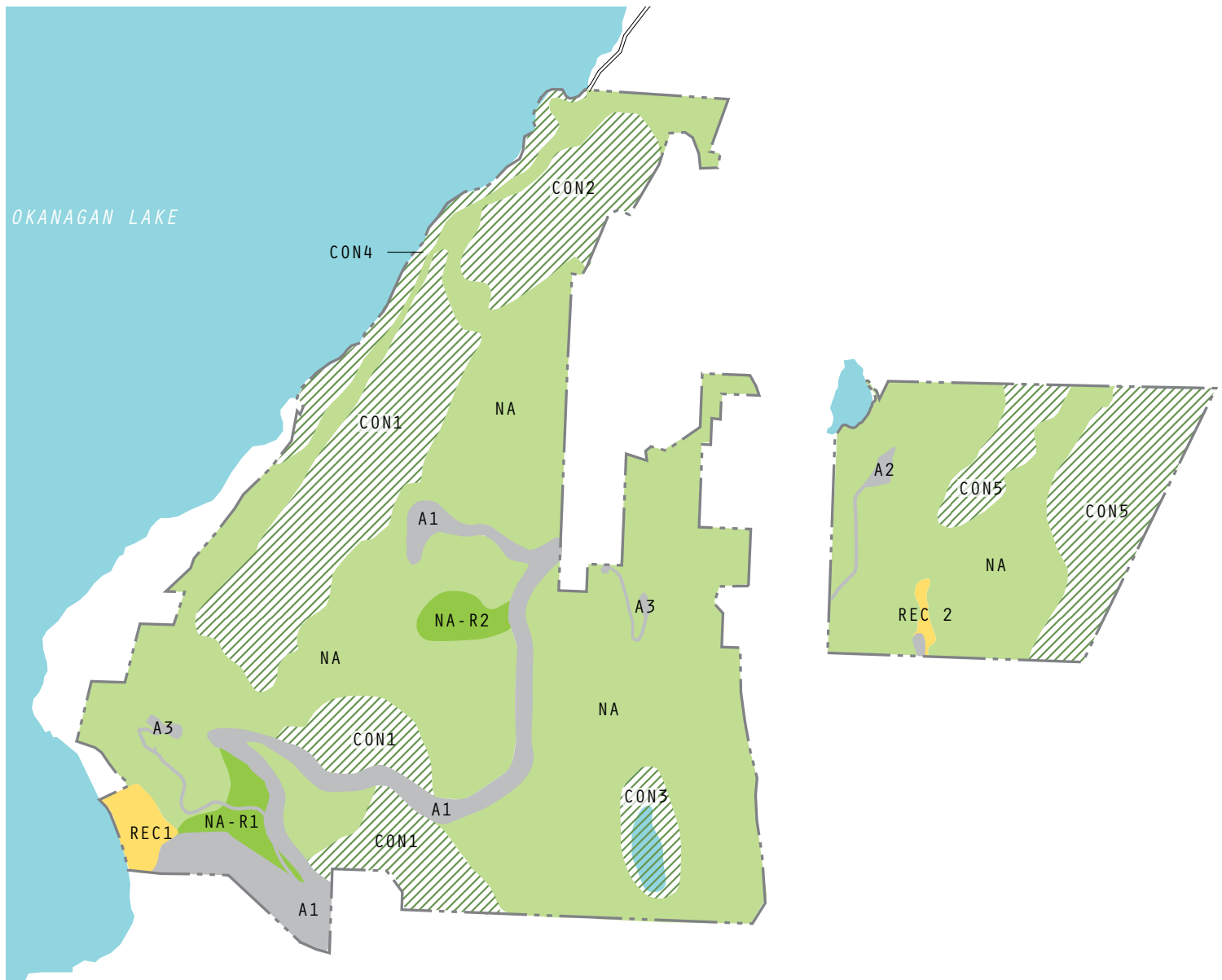
► Nature Zone (Na Zone)

The Nature Zone (NA Zone) is inclusive of the open coniferous woodland and other natural landscapes that exist outside of the Conservation Zones. The NA Zone includes the park's sanctioned trail network. The objectives for this zone are to:

- a) provide for passive, low intensity recreational opportunities in a manner that will have minimal impact on the natural environment of the park and will serve to enhance users' experiences and understanding of the park's natural environment; and,
- b) designate a future area for the development of a downhill and cross-country mountain bike course.

Two areas within the NA zone are identified for restoration work - one at the south end of the park within the Front Face / Apex precinct, and the other encompassing the existing pond playground. Both of these areas will be managed as no access areas until restoration work is complete.

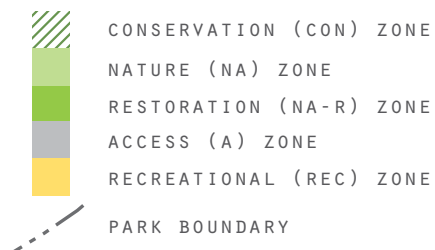
Figure 6: Park Management Zones



PARK MANAGEMENT ZONES



LEGEND



NA Zone Policies

NA Policy 1: Public access to this zone is permitted at sanctioned points only; access through and within this zone is permitted on sanctioned trails only.

NA Policy 2: Landscape alteration is limited to sanctioned trails, signage for route identification, and minimal interpretative facilities to support lower intensity recreational use; no construction of new roads, parking areas, utilities, or large scale infrastructure is permitted.

NA Policy 3: New routes for trails are not to be established except as required for human safety or for maintaining environmental integrity. Additional routes for trails will be considered for the Kathleen Lake area and to provide access to lookout points along the ridge line overlooking the Glenmore Valley provided that they are located outside of the Conservation Zone.

NA Policy 4: Downhill mountain biking is permitted in the NA zone within the sanctioned downhill mountain biking trail only.

NA Policy 5: Cross-country biking is permitted in the NA zone on the sanctioned cross-country mountain biking trail only.

NA Policy 6: When evaluating trails for decommissioning, realigning trails or designing new trails, consideration will be given to:

- a) maintaining critical wildlife habitat and connectivity (i.e., wildlife trees with potential nest cavities and perches, mule deer winter range);
- b) avoiding hazard trees and the related need for removal of hazard trees or other management practices that have high environmental impact; and,
- c) protecting cultural features from potential negative impacts.

NA Policy 7: Public access may be temporarily closed to decommission trails and to facilitate restoration activities.

►Access Zone (A Zone)

The Access Zone includes: Knox Mountain Drive (extending from the main park entrance to the Apex, the Crown / Lower Lookout parking area, the Pioneer Pavilion, parking areas along the Drive (A-1); and

reservoir sites together with their access drives (A-2 and A-3). The objectives for this zone are as follows:

- a) to focus visitor use and special events within the park to access roads and staging areas with existing investment in supporting visitor, recreation, and transportation infrastructure; and,
- b) to acknowledge the locations of existing utilities and those that are planned for in the near future.

A Zone Policies

A Policy 1: Special events and uses as defined by the City of Kelowna Park Services Manager are permitted subject to conditions determined by the Park Services Manager.

A Policy 2: Vehicle access will be permitted on Knox Mountain Drive in accordance with Council approved hours of operation.

A Policy 3: Utilities existing at the time of the completion of the Management Plan and the future cell-phone tower in the Grainger parcel are permitted within the A zone.

A Policy 4: New utilities and utility corridors are permitted in the park within disturbed areas and areas hidden from public views, if they demonstrate public park benefit and a net environmental gain. If exceptions are required for greater overall City benefit they must be approved by the Director of Infrastructure Planning.

►Recreation Zone (REC Zone)

The Recreation Zone includes the parkland adjacent to the Ellis Street Gateway (REC-1) and a future recreational area within the park's Grainger parcel (REC-2). The following policies provide direction to management, use, and development within the Recreation Zone.

REC Zone Policies

REC - Policy 1: Intensive recreational activities, including tennis, disc golf and off-leash dog areas, are permitted within the REC-1 sub-zone in designated areas.

REC - Policy 2: Intensive recreational activities (i.e., disc golf, tennis and a playground) may be considered within the REC-2 sub-zone within the footprint of the existing disturbed area.

Figure 7: Park Zoning Concept - Acceptable Uses

ACTIVITY	Conservation (CON) Zone	Nature (NE) Zone	Access (A) Zone	Recreation (RE) Zone	Comments
Dog Walking, Off-Leash				●	In fenced, designated area only
Dog Walking, On-Leash		●	●	●	On-leash, on-trail only
Downhill Mountain Biking			●		On designated downhill trail only
Hiking/Walking/Running		●	●	●	On designated trails only
Nature Appreciation	●	●	●	●	Info structures in RE zone only
Outdoor Education	●	●	●	●	Info structures in RE zone only
Picnicking		●	●	●	Only in previously disturbed areas
Playground				●	Only in previously disturbed area
Road Cycling			●		On Knox Mountain Drive only, within posted speed limit
Snow-Shoeing		●	●	●	On designated trails only
Swimming, Unsupervised				●	Unsupervised; Paul's Tomb only
Disc Golf				●	
Tennis			●	●	Designated area at Ellis entry only
Vehicle Parking			●		In designated areas only
X-Country Mountain Biking			●		On designated XC trail only
X-Country Skiing			●		On Knox Mountain Drive only
Skateboarding			●	●	On Knox Mountain Drive only, within posted speed limit.
Special Events					By permit only

REC - Policy 3: Development may include roads, parking areas, visitor information and educational structures (e.g. signage and fencing), day-use facilities (e.g. playground picnic areas), multi-use trails and supporting infrastructure for permitted recreational activities.

REC - Policy 4: Commercial uses are permitted on a temporary and event-related basis, pending required licensing and permitting by the City of Kelowna.

REC - Policy 5: Existing utilities within the park that pre-date preparation of this Management Plan are permitted within the REC-1 sub-zone; new utilities proposed that do not directly benefit the park will not be permitted in this zone.



5.3 Development Plan

The Development Plan forms one part of the Park Management Plan. Another part consists of the Operations and Maintenance Plan, described later in this chapter. The Development Plan describes the development work that is recommended to achieve the Vision and Strategic Goals of the Management Plan. Implementation practices are to conform to the Policies prescribed in previous sections of this report.

There are twelve major interrelated components to the Development Plan. The components are categorized by the predominant objective of the improvement; however, the interrelated nature of the improvements should be stressed. The components are detailed in the following sections and the specifics of each component are referenced in Figure 9: Development Concept Plan. The components are as follows:

Land-use and Zoning

Component 1: Rezoning all Park properties to P3 - Parks and Open Space

Environmental Protection

Component 2: Protection of the Conservation Zones

Component 3: Protection of the Okanagan Lake Foreshore

Component 4: Implementation of the new Sanctioned Trail Network and Points of Access Plan

Recreational Amenities

Component 5: Creation of Sanctioned Single-Use and Shared-Use Trails

Component 6: Improved Access for Vehicle-Free Recreation on Knox Mountain Drive

Component 7: Creation of a Sanctioned Off-Leash Dog Exercise Area

Gateway and Staging Area Improvements

Component 8: Enhancement of the Ellis Street Gateway

Component 9: Parking and Trail Access Improvement at Lookouts and Staging Areas

Maintenance Infrastructure and User Services

Component 10: Infrastructure Improvements to Support Park Operations

Component 11: Provision of User Services

Component 12: Construction of a permanent public washroom building adjacent to the Crown / Lower Lookout

5.3.1 Land-use and Zoning

Component 1: Rezoning all Park properties to P3 - Parks and Open Space

Knox Mountain Park and the Grainger Road parcels are made up of many different legal parcels. While most are currently zoned P3 and all are shown as designated park on the Official Community Plan Future Land Use Map, some have agricultural and residential zoning. It is important that the intended use reflects the appropriate zoning, therefore staff will initiate a rezoning application for the non-park zoned parcels.

5.3.2 Environmental Protection

Component 2: Protection of the Conservation Zones

Access to Conservation Zones will be restricted through the use of trail markings, signage and partial fencing along the zone boundaries. Some Conservation Zones are located in areas with very steep slopes where fencing will not be necessary, as access is controlled by topography.

Where private land is adjacent to the park boundary, and where fencing does not already exist, interface perimeter fencing shall be erected to discourage trespass, unsanctioned pedestrian and motorized vehicle access and encroachments. Installation of park perimeter fencing will occur annually in sections. The fencing will allow for the free passage of wildlife and will be constructed either of 1.2 metre height post and rail, or black chain link, depending on already established precedents in the area. At the time of fence installation, adjacent private landowners may request that a pedestrian gate be installed at their cost.

Component 3: Protection of the Okanagan Lake Foreshore

The shoreline of Okanagan Lake along the length of Paul's Tomb trail is within one of the Conservation Zones (CON-4). This is critical habitat for Kokanee Salmon who use this shoreline for the purposes of reproduction (e.g., spawning or laying eggs) each fall and consequently this area is particularly vulnerable to damage by recreational users. To minimize damage and build awareness of this ecologically significant feature, a sanctioned trail network will be reinforced and unsanctioned trails decommissioned. Trailhead, interpretive, and regulatory signage will be erected at both the Poplar Point trailhead and at Paul's Tomb. Trail junction signage and trail markers will be located at intervals along the Paul's Tomb trail.

The Paul's Tomb day use area is currently restricted to on-leash dog activity. Regulatory signage will be installed to notify users of potential impacts during spawning season and to support enforcement of the on-leash regulations

Component 4: Implementation of the new Sanctioned Trail Network and Points of Access Plan

The Management Plan proposes a phased approach to the full implementation of a sanctioned trail network and a sanctioned

points of access plan. A high level trail network and points of access plan based on Figure 2: Current Land Use, Road and Trail Network will be included on site at orientation kiosks as they are installed. More detailed access and restoration plans will be developed and implemented on a precinct-specific basis for all five precincts, beginning with the park's Front Face (Apex Trail), and concluding with the Grainger parcel. Depending on the magnitude of restoration required, implementation may need to occur in several phases.

Direction to All Park Precincts

For each precinct, an area-specific access and restoration plan will be prepared. The implementation of the access and restoration plan for each precinct will consist of the following:

- a) Installation of Environmental Management Signage
- b) Trail Decommissioning and Restoration: Unsanctioned trails, as set out in the access and restoration plan, are to be decommissioned. Damaged areas will be repaired through careful soil remediation, erosion control, fencing as required to eliminate access to rogue trails and replanting with ecosystem-appropriate native plants, with the objective that the footprint of these trails will slowly be erased over time.
- c) Points of Access Decommissioning and Restoration: Unsanctioned points of access, as set out in the access and restoration plan will be decommissioned. Fencing and planting will be used to block entry.
- d) Improvements to Sanctioned Trails: Upgrades to sanctioned trails will be made in tandem with the decommissioning of unsanctioned trails as budget allows. Trail enhancement may include trail resurfacing, the installation of timber crib stairs, and/or minor realignments to address steep grades and to improve the user experience.
- e) Installation of Trail and Interpretive Signage: Trail signage, as per the Natural Area Park Sign Guidelines, is to be installed clearly communicating the permitted uses of each trail. Interpretive signage will be installed to showcase unique and interesting features (e.g. cultural features, spectacular vistas, etc.).

Precinct-Specific Directions

a) Front Face / Apex Precinct- Decommissioning and restoration of a proliferation of rogue trails adjacent to the Apex Trail from the Apex / Upper Lookout downhill to the main park entrance. Improvements will be phased in over several years and will include installation of access control fencing, removal of unauthorized trails, restoration plantings, signage installation and mitigation of erosion.

b) Front Face / Apex Precinct-- Creation of a Dedicated Downhill Biking Trail and a Dedicated Cross-Country Biking Trail (see Component 5 below).

c) Paul's Tomb Precinct- - Realignment of the Paul's Tomb Trail to increase accessibility: The segment of trail that descends towards Paul's Tomb is very steep and has resulted in erosion, human injury, and the emergence of several alternate trail diversions created by users wishing to avoid particularly treacherous sections. The trail will be redesigned to provide a gradual slope that is accessible to more park visitors. Trail slope will not exceed 12% in any given section, and will not exceed a 10% average. Redundant segments of this trail will be decommissioned and re-naturalized with native grass mix and access control fencing will be considered.

d) Kathleen Lake Precinct-- Improvements will include gravel surfacing of existing sanctioned trails that are accessible to maintenance and emergency vehicles, creation of Glenmore Ridge Trail lookouts, removal of unauthorized trails by re-naturalizing, adding signage and adding new trail connections to the Boynton Place / Clifton Road staging area. All new trails will be located outside of the environmental setbacks for Kathleen Lake.

e) Grainger Parcel Precinct- - Develop the Saddle Trail and Secondary Trail: An unsanctioned trail presently runs diagonally along the valley between the peaks in the Grainger parcel. This trail will be formalized and dedicated solely for non-motorized recreation with appropriate access control.

5.3.3 Recreational Amenities

Component 5: Creation of Sanctioned Single-Use and Shared-Use Trails

a) Dedicated Downhill and Cross-Country Biking Trails: Establish and designate single-use downhill and cross country mountain biking trails that are separate from hiking trails to reduce potential conflict. Trails will be developed according to the widely recognized International Mountain Biking Association (IMBA) trail standards.

A downhill biking trail (extending from the Apex / Upper Lookout to the Ellis Street Gateway) and a separate cross-country biking route will be identified and sanctioned in consultation with the mountain biking community. All other downhill and cross-country biking trails will be decommissioned and re-naturalized where pedestrian use is not envisioned. The biking restrictions to single-use designated trails will allow Knox Mountain Park to continue as a convenient, local destination for off-road mountain biking, while also limiting conflicts, disturbance and erosion in more ecologically sensitive areas within the park. Signage, education, distinct blockades, and enforcement will be used to direct mountain biking to the designated trails. Dedicated Downhill and Cross-Country mountain biking trails at Knox Mountain Park were identified as a high priority in the Kelowna and Area Mountain Bike Strategy (Cascade Environmental, 2009).

b) Shared-use trails: Two shared use trails will be designated. The first being the Paul's Tomb Trail with a shared two-way hiking / biking designation, and the second being the portion of the Apex Trail between the Crown / Lower Lookout and the Apex / Upper Lookout, which will be shared between two-way hikers and one-way uphill bikers. The one-way uphill designation on this section of the Apex Trail will be a pilot project that will be monitored to measure it's success.

Component 6: Improved Vehicle-Free Recreation on Knox Mountain Drive

Knox Mountain Drive is currently open to vehicles on Monday through Saturday, from 9:30 AM through 9:00 PM and Sundays from 12:00 PM through 9:00 PM during fair weather months. Exceptions are currently permitted, including closures during periods of high risk and closures for special events. An existing gate at the Ellis Street entrance currently controls vehicle access. A second gate will be installed on Knox Mountain Drive just above the Crown / Lower Lookout to allow for greater flexibility. This second gate will provide the ability to close the road in different sections to allow both on-road

pedestrian and vehicular access to the park at the same time. Tour buses and vehicles will have access up to the Crown / Lower Lookout unless the road is covered in snow or the park is closed. At the time the second gate is installed a revised schedule of road openings will be developed and submitted to Council for approval. Clear signage communicating closures and road-use etiquette will be contained within kiosks at the entrance to the park and at the Crown / Lower Lookout.

Component 7: Creation of a Sanctioned Off-Leash Dog Exercise Area
Upon Council direction, a sanctioned fenced off-leash dog park will be established at the north end of Sutherland Bay (within the Ellis Street Gateway precinct) to meet an increasing need for off-leash lake access for dogs, and to provide an incentive for conformance to on-leash dog regulations within the remainder of the park - particularly along the Paul's Tomb trail and at Paul's Tomb beach.

5.3.4 Gateway and Staging Area Improvements

Component 8: Enhancement of the Ellis Street Gateway Precinct-
Visitor amenities at the Ellis Street gateway to Knox Mountain Park will be upgraded to accommodate: additional parking; a main park gateway sign; identification plaque for existing public art piece ("Levels", 1986 by Judson Beaumont); and, permanent information kiosk that includes directional, regulatory, and emergency contact information, with rotating/changeable educational panels.

A concept plan will also be developed to show how existing recreation facilities at this park entrance would function including disc golf (i.e., would the disc golf course be re-built in this location, re-located within this park, or re-located within the greater park system?) Consideration will be given to the addition of an adventure playground. Tennis does not fit as an amenity typical of Natural Area Parks, therefore, once the existing courts have fulfilled their lifespan, they will be relocated to another nearby active park such as Walrod Park or Sutherland Park.

Component 9: Parking and Trail Access Improvements at Lookouts and Staging Areas

The Crown / Lower Lookout, Apex / Upper Lookout, and the main access to the Kathleen Lake precinct will undergo improvements to clearly define and delineate the parking areas and the sanctioned

trails leading from these staging areas. New directional signage (including pavement markings, if applicable) and regulatory signage will be used to define and control parking and to reduce potential for pedestrian/cyclist/vehicle conflicts. Appropriate interpretive signage, and user amenities, including garbage and recycling receptacles, will also be installed. Redundant signs will be removed.

Specific direction to each staging area is as follows:

a) Crown / Lower Lookout – Re-Route the Apex Trail within the Staging Area: The Apex Trail will be routed around the lookout areas to provide pedestrians an alternative to the current route through the middle of the parking lot. A tour bus drop-off / turnaround will be incorporated into a new parking lot design and an orientation kiosk will be incorporated. A temporary portable washroom unit will be installed at the Crown / Lower Lookout for the short term.

b) Apex / Upper Lookout – Improvements to the Apex / Upper Lookout will occur in two phases:

i) An orientation kiosk will be incorporated into a more efficiently designed parking area; the original park dedication area with plaques on the knoll adjacent to the parking will be restored; and an interpretive sign(s) at the lookout will be added that highlights the geologic features of the Okanagan Valley that are visible from this viewpoint.

ii) A universally accessible trail from the Apex parking area to the Apex Lookout will be developed so this popular amenity may be accessed by all regardless of physical ability. The existing non-accessible trail will be decommissioned and restored to a naturalized state.

c) Kathleen Lake – A new gravel parking area off of Knox Mountain Drive will be developed that is visible from the road: signage, vehicle access gate, boulders, grading and bylaw enforcement will be used to define and control where parking may occur.

5.3.5 Maintenance Infrastructure and User Services

Component 10: Infrastructure Improvements to Support Park Operations

The Pond parking lot, access drive and playground will be removed

and the area re-naturalized. The play equipment is not well used in this location, does not meet current safety standards and does not justify continued maintenance. The parking lot will become redundant with construction of the safer and more highly visible Kathleen Lake staging area.

Component 11: Provision of User Services

In order to address the increase in recreational traffic that will come with the development of the Grainger parcel as a part of Knox Mountain Park, a portable washroom unit will be installed at the Cara Glen Way trailhead as a cost-effective amenity to serve park users accessing the Grainger parcel.

Component 12: Construction of a permanent public washroom and drinking fountain adjacent to the Crown / Lower Lookout

The Crown / Lower Lookout has developed into a popular destination in the park and a central staging area for trail users. A washroom building and drinking fountain would provide a valuable amenity for visitors. In addition, when the upper portion of Knox Mountain Drive is closed, this proposed washroom building will be the only one available to the public.

5.4 Operations and Maintenance Plan

This section describes the Operations and Maintenance Plan that is recommended in an effort to achieve the Vision and Strategic Goals of the Management Plan.

There are seven major interrelated components to the Operations and Maintenance Plan. The components are categorized by the predominant objective and are detailed in the sections below:

Capacity Building and Public Involvement

Component 1: Provision of Internal Resources for Plan Implementation

Component 2: Engaging the Public

Operations and Maintenance Planning

Component 3: Undertaking a Comprehensive Operations Plan

Component 4: Undertaking a Public Safety Assessment and Remediation of Serious Hazards

Component 5: Preparation of an Urban Wildlife Management Plan

Monitoring

Component 6: Establish a Plan Monitoring Framework

5.4.1 Capacity Building and Public Involvement

Component 1: Provision of Internal Resources for Plan Implementation

a) Establish Natural Area Park Coordinator position: It is recommended that a new full-time City of Kelowna staff position be created and located within the Park Services Division. This stewardship position will be assigned half-time solely to Knox Mountain Park, and building on the successes with Knox Mountain Park will eventually expand to become a full time position overseeing other Natural Area Parks throughout the City. The Natural Area Park Coordinator will have a background in environmental sciences, public outreach and and bylaw enforcement experience.

This staff member will liaise with the following divisions: Parks Services, Infrastructure Planning, Design and Construction Services and Bylaws, and will spend the majority of time in the field to gain intimate knowledge for the park site(s). This staff member will be physically fit and will patrol the trails by bicycle; will identify issues and bring them to the attention of the Maintenance and Operations team or other appropriate division, who will decide upon a course of action; will engage the public in outreach including coordination of an adopt-a-trail program (see below). It is recommended that this position will be provided, by Council Policy, with the ability to issue tickets for bylaw infractions (i.e., to be a sworn in bylaw officer).

b) Maintain the responsibilities of Park Caretaker position: The Knox Mountain Park caretaker presently lives year-round in the caretaker's residence adjacent to the Pioneer Pavilion near the summit of Knox Mountain Drive. The caretaker is responsible for providing a presence in the park to deter unauthorized activities, and for monitoring the Park to ensure that it is safe for all to enjoy. Park caretaker duties are decreased in the winter off-season. The park caretaker position will be maintained for the duration of the Management Plan period and the Caretaker will continue to perform currently assigned duties.

c) Phase in one full-time Grounds Person: Beginning with summer student positions, phase in one full-time grounds person dedicated to park maintenance and restoration with a focus on activities that

improve the health of the park's ecosystems. Responsibilities would include, but not be limited to, overall maintenance of the park and its infrastructure (e.g., trails, signage, fencing etc.) and restoration and rehabilitation projects. As park infrastructure and costs for maintaining it increases beyond the threshold of a half-time position over the next 10 years, this position will become full-time.

d) Maintenance of three existing summer student positions for noxious weed removal: At present, three students are hired each summer to perform maintenance duties related to controlling noxious weeds within the Park. The summer students will work as a team with the Grounds Person.

Component 2: Engaging the Public

a) Host semi-annual external stakeholder meetings: City staff will formally engage interested stakeholder groups at least two times per year. An early spring external stakeholder meeting will focus on what has received funding and upcoming construction projects planned in the park; and a fall external stakeholder meeting will look back over the year at problems encountered, and look ahead to quantify requests for upcoming annual budget submissions. Infrastructure Planning will budget for, host and coordinate these stakeholder meetings, with participation by Design and Construction and Parks Services. The inaugural meeting will take place in the Spring of 2012.

b) Dedicated park web page: An annual on-line information page describing current Park management initiatives will be posted on the City web site and be updated to correspond with the semi-annual external stakeholder meetings. The Knox Mountain Park web page is expected to serve as an online clearinghouse of information pertaining to the park and its management and could contain information about events, the hours that the Drive is open, the location of sanctioned trails and access points, park regulations, natural and cultural history, invasive species, typical plant and animal species, and hazardous conditions.

c) Adopt-a-Trail Program: Initiate an adopt-a-trail program whereby members of the public would commit to regular maintenance of the trails in the form of litter pick-up; removal of sticks, rocks and debris; recording and reporting of vandalism, hazards, and illegal activity; cleaning of signage. Terms could be for a two year minimum with trail maintenance once per month between April

e) Annual Festivals: Community led festivals meeting the intent of the Vision and Strategic Goals for the park will be considered. Examples of such festivals include:

- An annual Kokanee Awareness Festival: a fall festival in the park during spawning season (September and October) to increase public awareness associated with protecting the fish that use the park's shoreline. The park is one of few stretches of undeveloped shoreline on Okanagan Lake and it is provincially classified as a "Black Zone" or critical habitat for shore spawning Kokanee.
- An annual Okanagan Sunflower Festival: a springtime festival in the park to celebrate the annual re-emergence of the City's official flower, Arrowleaf Balsamroot (*Balsamorhiza sagittata*). The bright yellow flowers bloom in late April or early May and have a particular resonance in the cultural identity of many residents. A festival to celebrate this phenomenon could become a valuable opportunity to promote and communicate the uniqueness of and reasons for protecting the ecosystems in Knox Mountain Park.

5.4.2 Operations and Maintenance Planning

Component 3: Development of an annual Operations Plan that includes but is not limited to:

- a) annual inspections and maintenance of signage, fencing, tennis courts, irrigation and parking areas (line painting, regrading of gravel lots, etc.);
- b) semi-annual inspections and maintenance of trails (as per the draft Trail Inspection and Maintenance Policy - Policy #356);
- c) forest management and monitoring consisting of low impact sustainable practises for fuel modification that follow "Firesmart" principles, hazardous tree removals (when they pose a threat to the public), replanting, noxious weed removals and control of pest infestations;

d) ongoing removal of litter and graffiti;

e) ongoing maintenance park structures both permanent and temporary (i.e., portable washroom units);f) annual maintenance of Knox Mountain Drive (street sweeping, snow removal, placement and removal of speed bumps, line painting;

g) annual installation of perimeter park fencing (approximately 500 linear metres per year); and,

h) ongoing security.

Component 4: Undertaking a Public Safety Assessment and Remediation of Serious Hazards

An annual assessment of potential threats to personal safety will be conducted and any serious hazards revealed in the process will be prioritized and budgets brought forth for Council consideration.

Component 5: Preparation of an Urban Wildlife Management Plan

The presence of wildlife in Knox Mountain Park sometimes results in conflict with human activities. It is recommended that an Urban Wildlife Management Plan be prepared to provide a framework and guidelines for management practises that integrate natural and human systems within the park and the Grainger Road parcels. This plan would address monitoring of wildlife populations, establishing maximum carrying capacity per species of concern, and identifying methods to manage a population if it escalates beyond a threshold that is sustainable. Currently deer, coyotes and raccoons are species of concern.

5.4.3 Monitoring

Component 6 Establish a Plan Monitoring Framework

a) Annual Scorecard - A scorecard template will be developed and used to annually assess the ongoing effectiveness of the Knox Mountain Management Plan. The first scorecard measurements will form the baseline against which future conditions and trends will be measured (i.e., improving, declining or stable). Measurements may include frequency and type of outdoor events, vehicular traffic, wildlife mortality, bylaw infractions and monitoring of several location specific plots against predetermined environmental criteria. The annual scorecard assessment will be conducted at the same time each year (late spring) by city staff familiar with Knox Mountain Park, e.g., the Parks Planner and / or the Natural Area Park Coordinator.

b) Update to the Knox Mountain Management Plan - This management plan will be reviewed and updated every five to ten years to ensure that annual projects undertaken meet the established Strategic Goals and to confirm that the actions taken contribute to a net park benefit.



6.0 IMPLEMENTATION PROGRAM

The Strategic Plan focuses and defines the implementation items within the Development Plan and the Operations and Maintenance Plan.

In recent history, there has been no budget dedicated specifically for operations and maintenance at Knox Mountain Park, rather these have been funded from a general account. Working closely together with Parks Services, this management plan has quantified costs for what an appropriate level of maintenance specific to Knox Mountain Park should be.

For both capital development and operations & maintenance items priorities for implementation were determined, high level cost estimates were prepared and tasks were broken down into four phases.

Staff anticipate that the capital development plan will be funded from the City's capital budget and that the four phases will be implemented over a 15 year time frame. Conscious effort was put into ensuring that the proposed annual cost for park capital development over the next 15 years averages approximately \$200,000 per year. Capital development costs for each phase are estimated at: Phase 1 (2012 through 2015) \$950,000; Phase 2 (2016 through 2018) \$420,000; Phase 3 (2019 through 2021) \$640,000; and, Phase 4 (2022 through 2026) \$ 990,000.

In order to support ongoing operations of these capital improvements, and all park infrastructure at Knox Mountain Park, an operating budget has also been prepared and broken down into the same four phases:

Phase 1 (2012 through 2015) \$918,730; Phase 2 (2016 through 2018) \$680,580; Phase 3 (2019 through 2021) \$959,330; and, Phase 4 (2022 through 2026) \$1,411,300. These estimates for ongoing base operations specific to Knox Mountain Park increase incrementally and include one time operating requests for such items as rock scaling and re-paving of Knox Mountain Drive. A summary of estimated costs per phase are found in the table below:

Figure 8: Summary of Costs		Develop- ment Plan	Operations & Maintenance Plan	Total per Phase
Phase 1 (4 years)	2012 through 2015	\$950,000	\$918,730	\$1,868,730
Phase 2 (3 years)	2016 through 2018	\$420,000	\$680,580	\$1,100,580
Phase 3 (3 years)	2019 through 2021	\$640,000	\$959,330	\$1,599,330
Phase 4 (5 years)	2022 through 2026	\$990,000	\$1,411,300	\$2,401,300
		\$3,000,000	\$3,969,940	\$6,969,940

The locations of the Development Plan items are identified comprehensively in Figure 9 - Development Concept Plan and in further detail in the Development Plan Precinct maps (Figures 10-14). The Implementation Program is summarized in a Phasing and Costing Chart for each of the four phases (Figures 15 to 18 - Phasing and Costing Charts). Priorities are listed in descending order of importance on both the Development Concept Plan and in the Phasing and Costing Charts.

Investment in the full-scale Implementation Program of the Management Plan, including all Development Plan and Operations and Maintenance Plan components is estimated at \$6.95 million, over 15 years with \$ 3,000,000 attributed to new capital development and \$3,951,940 attributed to ongoing Operations and Maintenance.

Infrastructure Planning is the city department responsible for submission of capital budget requests. Requests for operations and maintenance budget will be the responsibility of the departments identified on the Phasing and Costing Charts.

These budgets will be considered and weighed against other priorities in the long-term capital plan and provisional budget submissions in future years. It should be made clear that funding is not assured, but if projects cannot be achieved in the year or phase specified due to budgetary allocations, specific projects will be deferred to the following year.

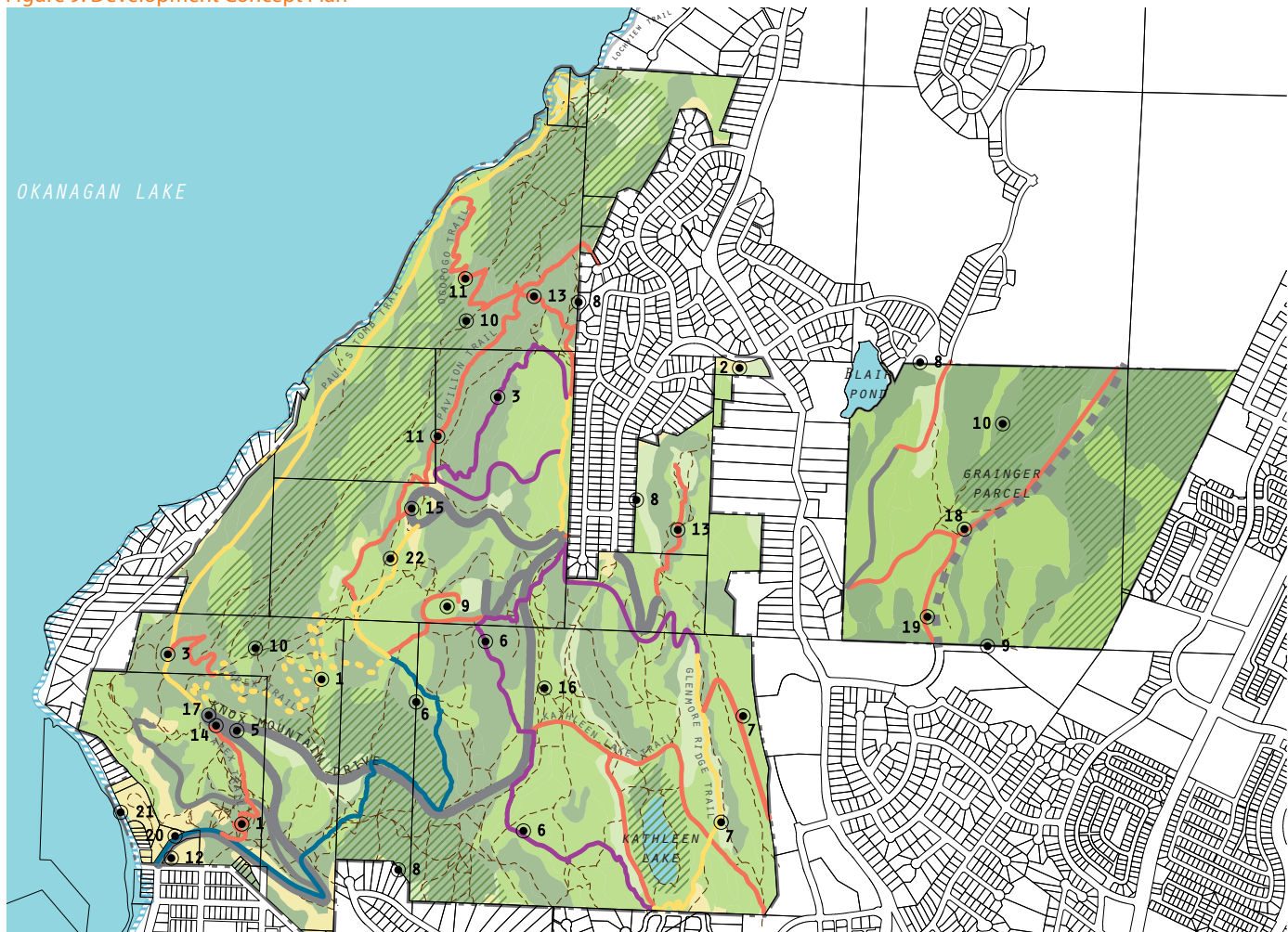
With stakeholder and public input, a list of Phase 1 (2012 to 2015) development projects was prepared and prioritized. (A full description of these projects can be found in Section 5.3 - Development Plan.) The numbers assigned here are listed in order of priority and correspond with those shown on the Development Plan Precinct maps (Figures 10-14) and the Phasing and Costing Charts (Figures 15 to 18):

3. Realign Paul's Tomb Trail segment to increase accessibility.
4. Install trailhead, interpretive, directional and regulatory signage at key locations along Paul's Tomb Trail.
5. Install new vehicle gate on Knox Mountain Drive above the Crown / Lower lookout.
6. Establish and designate single-use downhill and cross country mountain biking trails.
7. Develop trail network in the Kathleen Lake precinct with new trail connections to the Boynton Place / Clifton Road staging area.
8. Commence annual installations of park perimeter fencing.

Phase 1 Priorities (2012 - 2015)

1. Phased restoration of the Apex Trail (front face) from the Apex / Upper Lookout downhill to the main park entrance.
2. Rezone all park properties to P3 – Parks and Open Space – for both the Knox Mountain Park and the Grainger Road parcels.

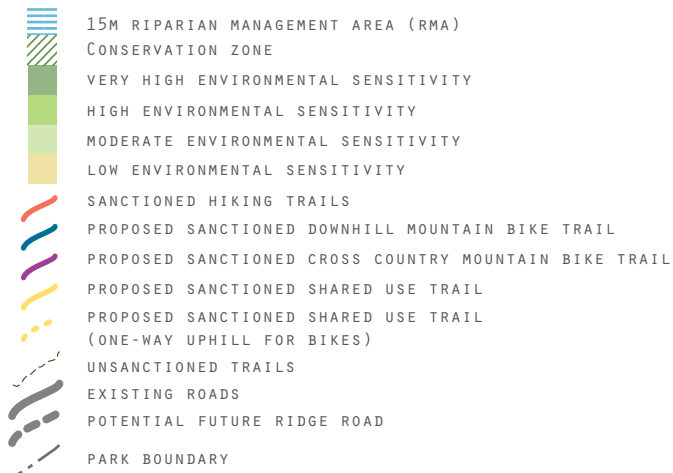
Figure 9: Development Concept Plan



DEVELOPMENT CONCEPT PLAN



LEGEND



- 1 APEX TRAIL (FRONT FACE) RESTORATION
- 2 REZONE ALL PARK PROPERTIES TO P3 - PARKS & OPEN SPACE
- 3 REALIGNMENT OF PAUL'S TOMB TRAIL SEGMENT TO INCREASE ACCESSIBILITY
- 4 PAUL'S TOMB TRAIL INTERPRETIVE SIGNAGE INSTALLATION
- 5 VEHICLE GATE INSTALLATION ABOVE CROWN / LOWER LOOKOUT
- 6 DESIGNATED DOWNHILL & CROSS-COUNTRY MOUNTAIN BIKING TRAILS ESTABLISHMENT
- 7 KATHLEEN LAKE AREA TRAIL DEVELOPMENT
- 8 ANNUAL PARK PERIMETER FENCE INSTALLATION
- 9 REMOVAL AND RESTORATION OF PLAYGROUND & PARKING AREA
- 10 FENCING & SIGNAGE INSTALLATION AROUND CONSERVATION ZONES
- 11 OGOPOGO AND PAVILION TRAIL RESTORATION
- 12 KIOSK AND GATEWAY SIGNAGE INSTALLATION AT ELLIS ST. ENTRY
- 13 SIGNAGE INSTALLATION ON REMAINING TRAILS
- 14 CROWN / LOWER LOOKOUT STAGING AREA IMPROVEMENTS
- 15 APEX / UPPER LOOKOUT STAGING AREA IMPROVEMENTS
- 16 NEW KATHLEEN LAKE STAGING / PARKING AREA DEVELOPMENT
- 17 PUBLIC WASHROOM CONSTRUCTION AT CROWN/LOWER LOOKOUT
- 18 SADDLE TRAIL LOOP (GRAINGER ROAD PARCEL) DEVELOPMENT
- 19 STAGING AREA (GRAINGER ROAD PARCEL) DEVELOPMENT
- 20 REALIGNMENT OF ELLIS STREET AND POPLAR POINT DRIVE (PENDING LAND ACQUISITION)
- 21 RELOCATION OF DOG OFF-LEASH AREA TO POPLAR POINT DRIVE (PENDING COUNCIL DIRECTION)
- 22 UNIVERSALLY ACCESSIBLE TRAIL DEVELOPMENT TO APEX/UPPER LOOKOUT

Figure10: Development Plan - Front Face / Apex Precinct

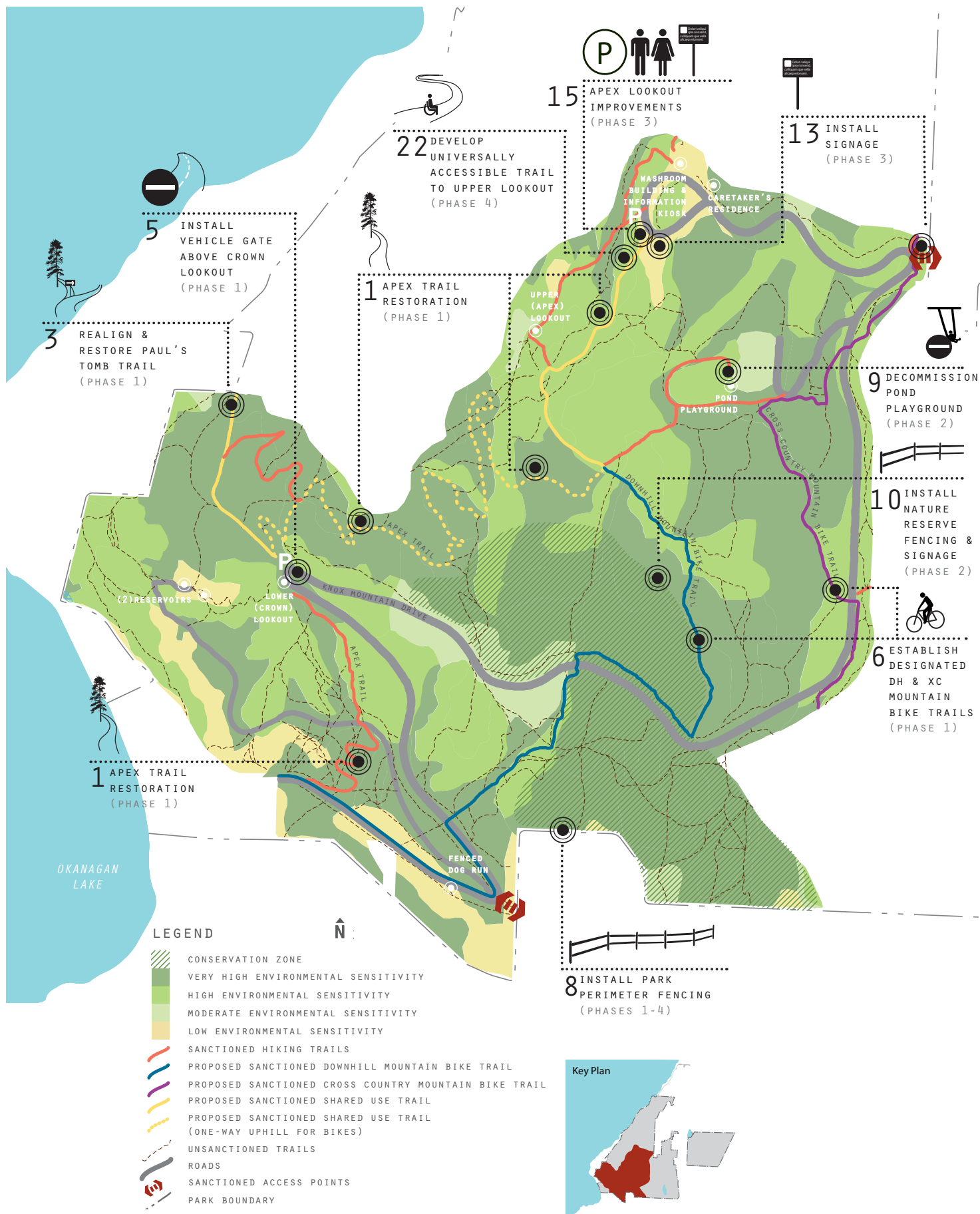


Figure 11: Development Plan - Kathleen Lake Precinct

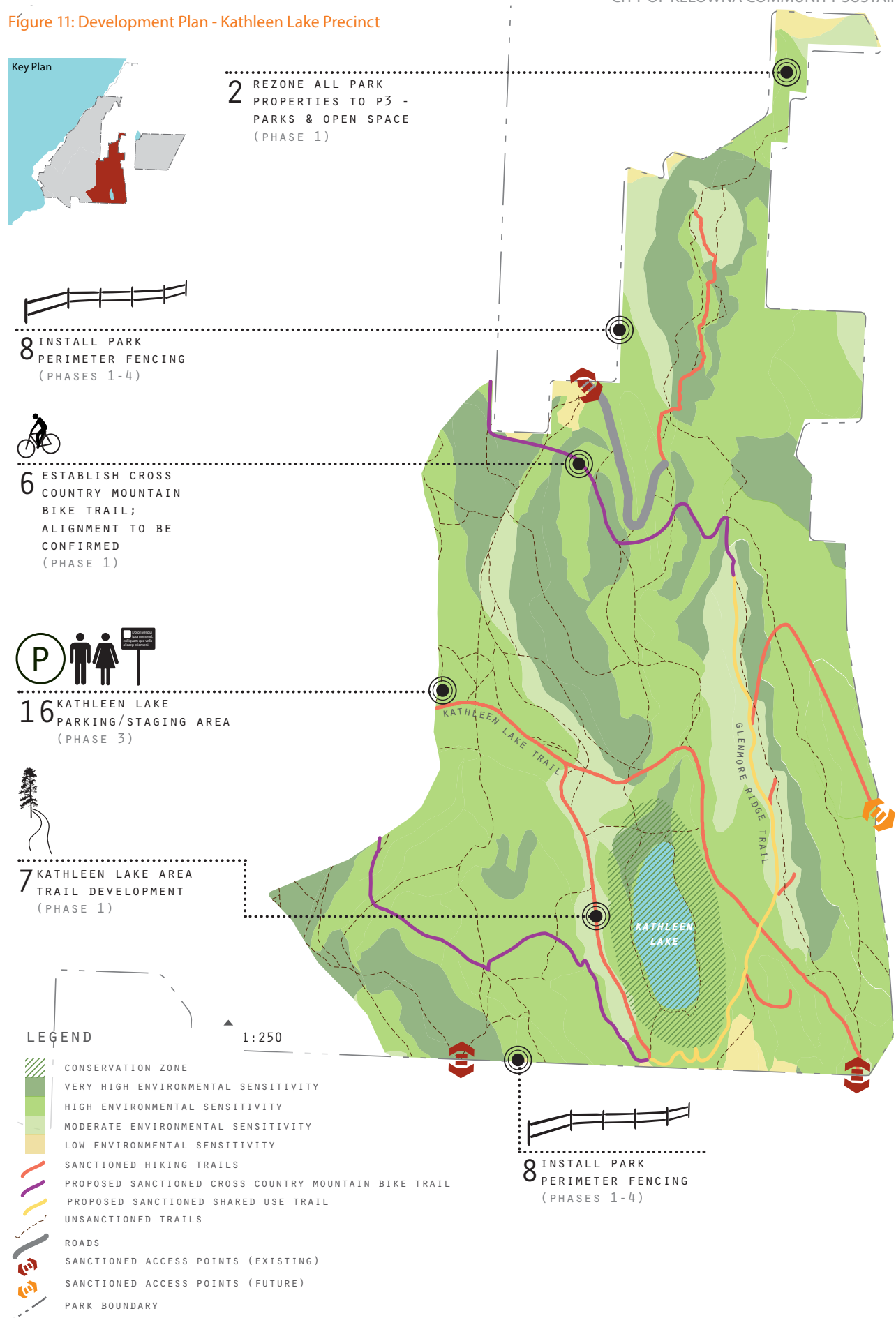


Figure 12: Development Plan - Paul's Tomb Precinct

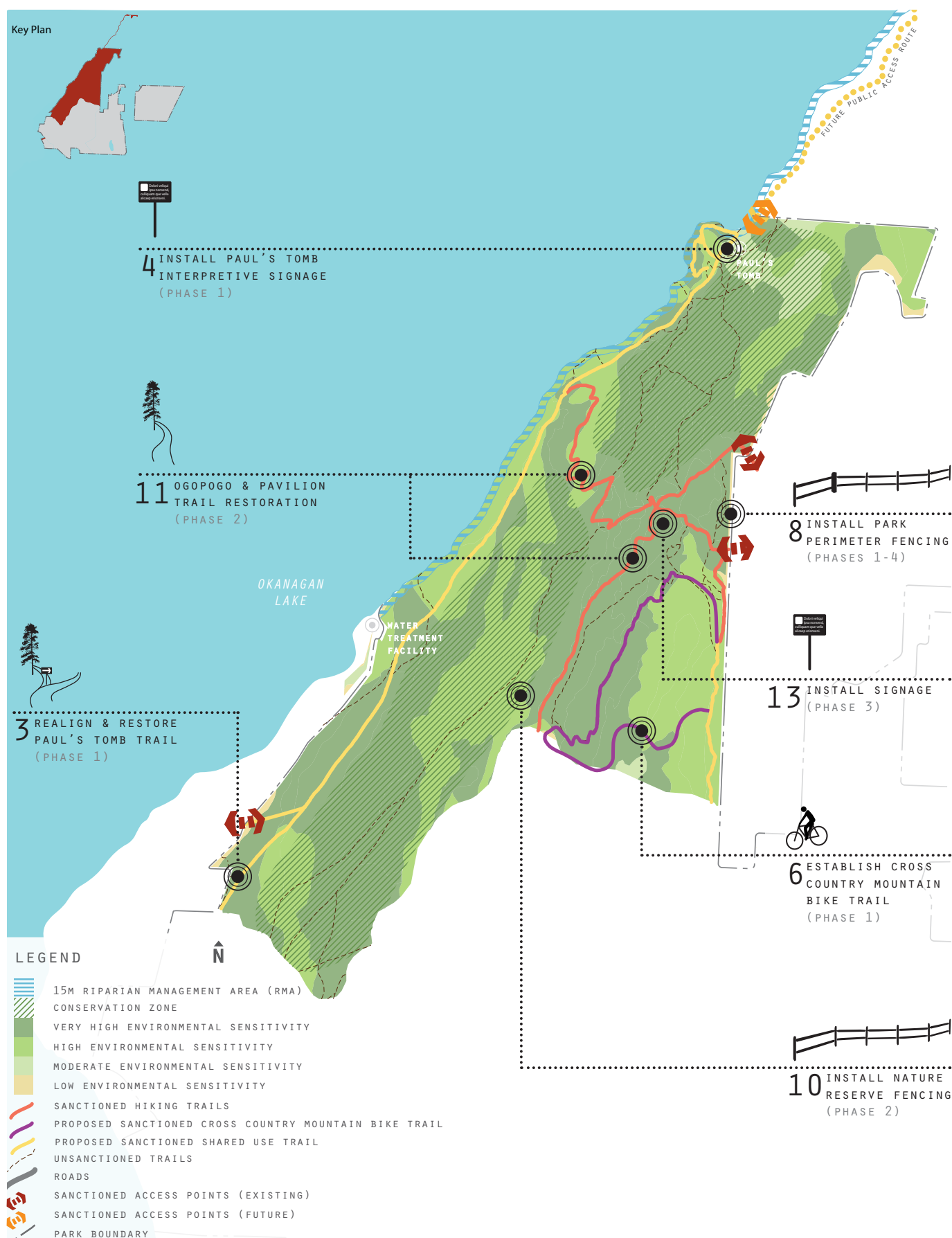


Figure 13: Development Plan - Ellis Street Gateway Precinct

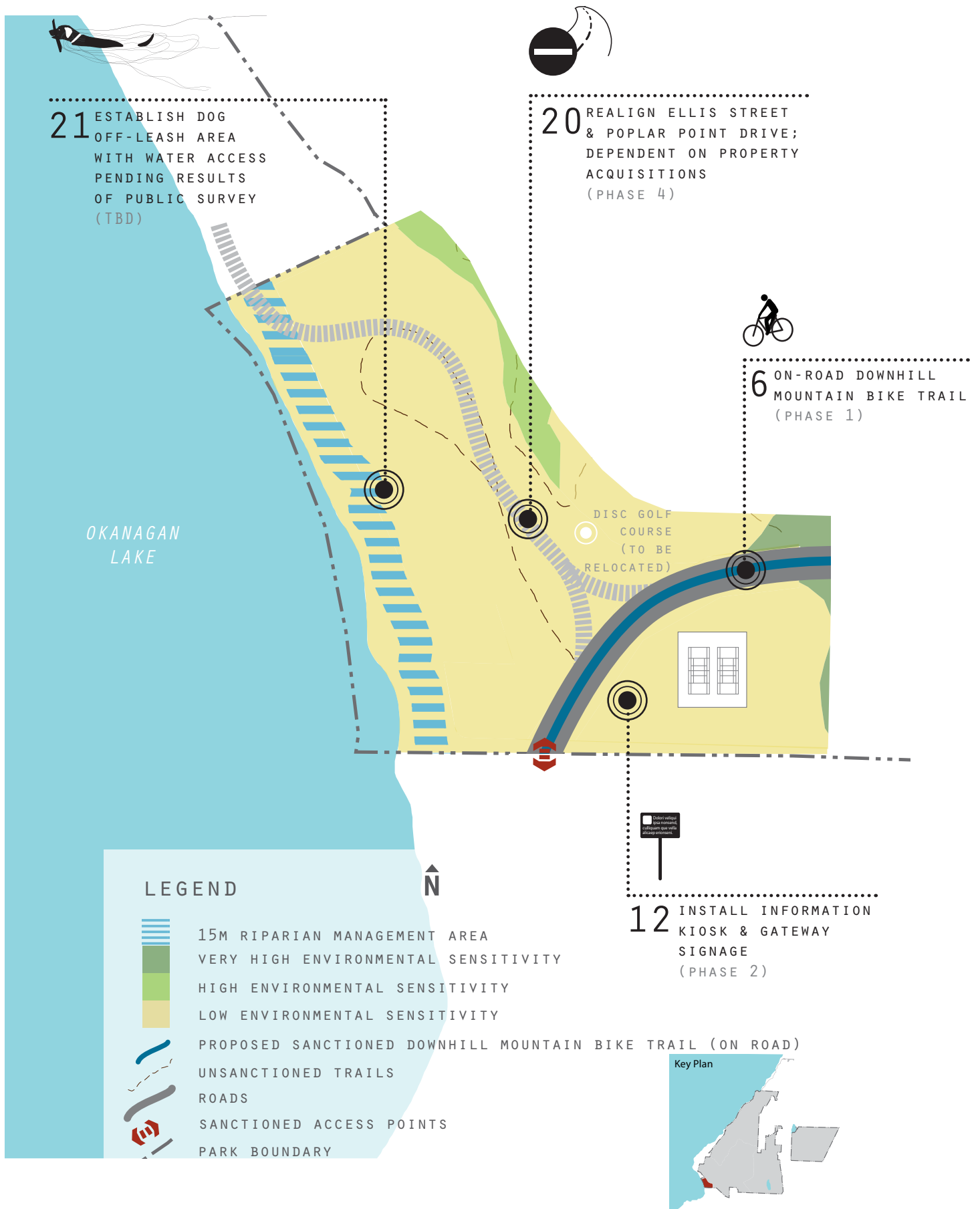


Figure 14: Development Plan - Grainger Parcel Precinct

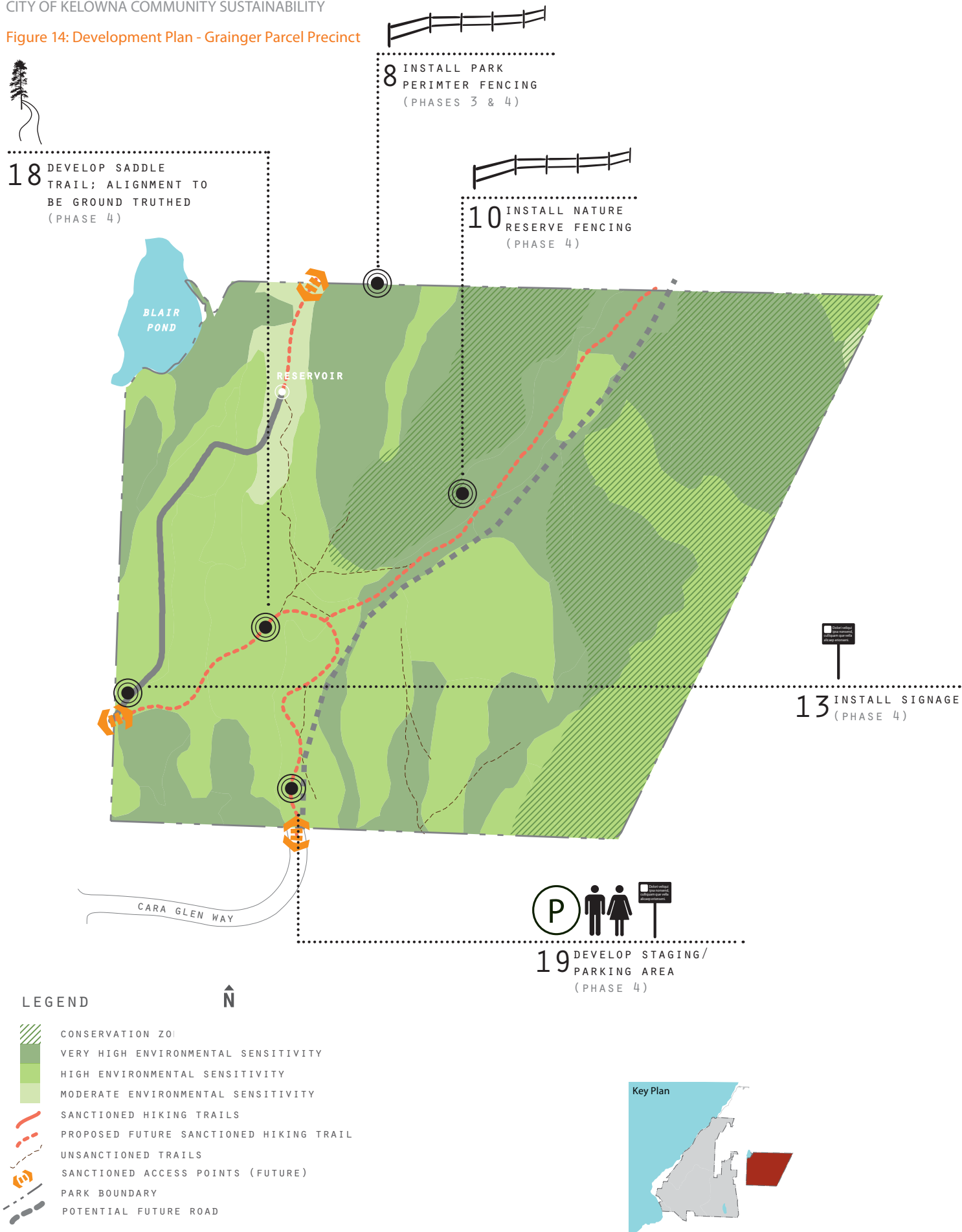


Figure 15: Phasing and Costing Chart - Phase 1

Priority #	Objective	Development Plan Item	Phase 1				Yr. 1-4 Total	Notes
			2012	2013	2014	2015		
			Year 1	Year 2	Year 3	Year 4		
1	Environmental Protection	Apex trail (Front Face) restoration	\$100,000	\$100,000	\$100,000	\$100,000	\$400,000	signage, fencing, trail decommissioning, plantings
2	Land Use and Zoning	Rezone all park properties to P3 - Parks and Open Space	\$3,000				\$3,000	
3	Operations and Maintenance Planning	Realign Paul's Tomb trail and perform necessary restoration	\$60,000				\$60,000	including removal of some bedrock outcroppings at the Herbert Heights entry for better access by emergency vehicles.
4	Maintenance Infrastructure and User Services	Install Paul's Tomb trail interpretive signage	\$30,000				\$30,000	work with descendants of Paul Family
5	Recreational Amenities	Install vehicle access gate above Crown / Lower Lookout	\$7,000				\$7,000	
6	Recreational Amenities	Establish designated downhill and cross-country mountain biking trails		\$65,000	\$65,000		\$130,000	trail building, signage, fencing (especially at intersections with Knox Mountain Drive)
7	Environmental Protection	Kathleen Lake area trail development		\$30,000	\$30,000	\$30,000	\$90,000	signage, fencing, trail decommissioning, plantings, gravel trail surfacing for maintenance vehicles, Glenmore Ridge Trail lookouts, connection to Boyton Place Clifton Road staging area
8	Environmental Protection	Annual Park perimeter fence installation		\$20,000	\$20,000	\$20,000	\$60,000	approx. 500 l.m. / year, with Magic Estates as highest priority
9	Operations and Maintenance Planning	Decommission & restore pond area playground, parking and access						
10	Environmental Protection	Install fencing & signage around and in Nature Reserve zones						
11	Environmental Protection	Ogopogo and Pavilion trail restoration						
12	Gateway and Staging Area Improvements	Install information kiosk and gateway signage at Ellis St. entry						
13	Maintenance Infrastructure and User Services	Install signage on remaining trails						
14	Gateway and Staging Area Improvements	Undertake improvements to Crown / Lower Lookout staging area						
15	Gateway and Staging Area Improvements	Improvements to Apex /Upper Lookout staging area						
16	Gateway and Staging Area Improvements	Develop new Kathleen Lake staging /parking area						
17	Recreational Amenities	Construct public washroom building at Crown / Lower Lookout						
18	Environmental Protection	Develop Saddle Trail at Grainger Road park parcel						
19	Gateway and Staging Area Improvements	Develop staging /parking area at Grainger Road park parcel						
20	Maintenance Infrastructure and User Services	Realign Ellis Street and Poplar Point Drive						
21	Recreational Amenities	Establish dog-off leash area with water access at Ellis Street gateway				\$170,000	\$170,000	priority dependent on public survey results and Council approval
22	Gateway and Staging Area Improvements	Develop universally accessible trail to Apex / Upper Lookout						
			\$200,000	\$215,000	\$215,000	\$320,000	\$950,000	

*All above actions should be the shared responsibility of IP and DCS.
IP handles preliminary planning and securing financial resources and DCS handles detail design and construction

Priority #	Objective	Operations and Maintenance Plan Item	Phase 1				Yr. 1-4 Total	
			2012	2013	2014	2015		
			Year 1	Year 2	Year 3	Year 4		
23	Operations and Maintenance Planning	Annual inspections and maintenance (PS)	\$35,000	\$61,900	\$62,150	\$62,400	\$221,450	annual inspections and maintenance of signage, trails, fencing, parking areas, lawns, irrigation, portable toilets, snow removal, security, tennis courts
24	Gateway and Staging Area Improvements	Portable washroom rental and maintenance (PS)	\$5,500	\$5,500	\$5,500	\$5,500	\$22,000	Paul's Tomb and Crown / Lower Lookout (April to Oct.)
25	Capacity Building and Public Involvement	Park Caretaker (PS, REBS)	\$31,200	\$31,200	\$31,200	\$31,200	\$124,800	3 year contract renewable in 2014
26	Capacity Building and Public Involvement	Half-time natural area park coordinator (PS, Bylaws)		\$40,000	\$40,000	\$40,000	\$120,000	dedicated bylaw officer; half-time in Knox Mountain Park, half-time in other natural area parks
27	Capacity Building and Public Involvement	(3) summer student positions (PS) (noxious weed removal and park ambassadors)		\$31,560	\$31,560	\$31,560	\$94,680	65 days per position including one vehicle
28	Operations and Maintenance Planning	Forest management (PS)	\$30,000	\$30,000	\$30,000	\$30,000	\$120,000	fuel modification, hazardous tree removals, replanting
29	Operations and Maintenance Planning	Rock scaling (PS)		\$165,000			\$165,000	Paul's Tomb Trail; every 10 years
30	Monitoring	Update management plan and environmental status (IP)						
31	Operations and Maintenance Planning	Resurfacing of Knox Mountain Drive (PS)						
32	Operations and Maintenance Planning	Develop urban wildlife management plan (PS)			\$30,000		\$30,000	
33	Capacity Building and Public Involvement	Semi-annual stakeholder meeting (IP)	\$1,500	\$1,500	\$1,500	\$1,500	\$6,000	
34	Monitoring	Annual Scorecard Assessment (IP)	\$1,200	\$1,200	\$1,200	\$1,200	\$4,800	staff time and traffic "tube" counts in two locations
35	Capacity Building and Public Involvement	Dedicated park web page (IP)	\$2,500	\$2,500	\$2,500	\$2,500	\$10,000	
36	Capacity Building and Public Involvement	Half-time Grounds maintenance position (PS)						
			\$106,900	\$370,360	\$235,610	\$205,860	\$918,730	

*PS = led by Parks Services, IP = led by Infrastructure Planning, DCS = led by Design + Construction Services,
REBS = led by Real Estate & Building Services

Figure 16: Phasing and Costing Chart - Phase 2

Priority #	Objective	Development Plan Item	Phase 2			Yr. 5-7 Total	Notes
			2016 Year 5	2017 Year 6	2018 Year 7		
1	Environmental Protection	Apex trail (Front Face) restoration					
2	Land Use and Zoning	Rezone all park properties to P3 - Parks and Open Space					
3	Operations and Maintenance Planning	Realign Paul's Tomb trail and perform necessary restoration					
4	Maintenance Infrastructure and User Services	Install Paul's Tomb trail interpretive signage					
5	Recreational Amenities	Install vehicle access gate above Crown / Lower Lookout					
6	Recreational Amenities	Establish designated downhill and cross-country @mountain biking trails					
7	Environmental Protection	Kathleen Lake area trail development					
8	Environmental Protection	Annual Park perimeter fence installation	\$20,000	\$20,000	\$20,000	\$60,000	approx. 500 l.m. / year, with Magic Estates as highest priority
9	Operations and Maintenance Planning	Decommission & restore pond area playground, parking and access	\$30,000			\$30,000	including footing removal
10	Environmental Protection	Install fencing & signage around and in Nature Reserve zones		\$100,000	\$100,000	\$200,000	
11	Environmental Protection	Ogopogo and Pavilion trail restoration	\$100,000			\$100,000	signage, fencing , crib stairs, trail decommissioning and restoration
12	Gateway and Staging Area Improvements	Install information kiosk and gateway signage at Ellis St. entry		\$30,000		\$30,000	remove and consolidate existing signage
13	Maintenance Infrastructure and User Services	Install signage on remaining trails					
14	Gateway and Staging Area Improvements	Undertake improvements to Crown / Lower Lookout staging area					
15	Gateway and Staging Area Improvements	Improvements to Apex /Upper Lookout staging area					
16	Gateway and Staging Area Improvements	Develop new Kathleen Lake staging /parking area					
17	Recreational Amenities	Construct public washroom building at Crown / Lower Lookout					
18	Environmental Protection	Develop Saddle Trail at Grainger Road park parcel					
19	Gateway and Staging Area Improvements	Develop staging /parking area at Grainger Road park parcel					
20	Maintenance Infrastructure and User Services	Realign Ellis Street and Poplar Point Drive					
21	Recreational Amenities	Establish dog-off leash area with water access at @Ellis Street gateway					
22	Gateway and Staging Area Improvements	Develop universally accessible trail to Apex / Upper Lookout					
*All above actions should be the shared responsibility of IP and DCS. IP handles preliminary planning and securing financial resources and DCS handles detail design and construction			\$150,000	\$150,000	\$120,000	\$420,000	

Priority #	Objective	Operations and Maintenance Plan Item	Phase 2			Yr. 5-7 Total	
			2016 Year 5	2017 Year 6	2018 Year 7		
23	Operations and Maintenance Planning	Annual inspections and maintenance (PS)	\$48,150	\$48,400	\$48,650	\$145,200	annual inspections and maintenance of signage, trails, fencing, parking areas, lawns, irrigation, portable toilets, snow removal, security, tennis courts
24	Gateway and Staging Area Improvements	Portable washroom rental and maintenance (PS)	\$5,500	\$5,500	\$5,500	\$16,500	Paul's Tomb and Crown / Lower Lookout (April to Oct.)
25	Capacity Building and Public Involvement	Park Caretaker (PS, REBS)	\$31,200	\$31,200	\$31,200	\$93,600	3 year contract renewable in 2017
26	Capacity Building and Public Involvement	Half-time natural area park coordinator (PS, Bylaws)	\$40,000	\$40,000	\$40,000	\$120,000	dedicated bylaw officer; half-time in Knox Mountain Park, half-time in other natural area parks
27	Capacity Building and Public Involvement	(3) summer student positions (PS) (noxious weed removal and park ambassadors)	\$31,560	\$31,560	\$31,560	\$94,680	65 days per position including one vehicle
28	Operations and Maintenance Planning	Forest management (PS)	\$30,000	\$30,000	\$30,000	\$90,000	fuel modification, hazardous tree removals, replanting
29	Operations and Maintenance Planning	Rock scaling (PS)					
30	Monitoring	Update management plan and environmental status (IP)					
31	Operations and Maintenance Planning	Resurfacing of Knox Mountain Drive (PS)					
32	Operations and Maintenance Planning	Develop urban wildlife management plan (PS)					
33	Capacity Building and Public Involvement	Semi-annual stakeholder meeting (IP)	\$1,500	\$1,500	\$1,500	\$4,500	
34	Monitoring	Annual Scorecard Assessment (IP)	\$1,200	\$1,200	\$1,200	\$3,600	staff time and traffic "tube" counts in two locations
35	Capacity Building and Public Involvement	Dedicated park web page (IP)	\$2,500	\$2,500	\$2,500	\$7,500	
36	Capacity Building and Public Involvement	Half-time Grounds maintenance position (PS)	\$35,000	\$35,000	\$35,000	\$105,000	
*PS = led by Parks Services, IP = led by Infrastructure Planning, DCS = led by Design + Construction Services, REBS = led by Real Estate & Building Services			\$226,610	\$226,860	\$227,110	\$680,580	

Figure 17: Phasing and Costing Chart - Phase 3

Priority #	Objective	Development Plan Item	Phase 3			Yr. 8-10 Total	Notes
			2019 Year 8	2020 Year 9	2021 Year 10		
1	Environmental Protection	Apex trail (Front Face) restoration					
2	Land Use and Zoning	Rezone all park properties to P3 - Parks and Open Space					
3	Operations and Maintenance Planning	Realign Paul's Tomb trail and perform necessary restoration					
4	Maintenance Infrastructure and User Services	Install Paul's Tomb trail interpretive signage					
5	Recreational Amenities	Install vehicle access gate above Crown / Lower Lookout					
6	Recreational Amenities	Establish designated downhill and cross-country mountain biking trails					
7	Environmental Protection	Kathleen Lake area trail development					
8	Environmental Protection	Annual Park perimeter fence installation	\$20,000	\$20,000	\$20,000	\$60,000	approx. 500 l.m. / year, with Magic Estates as highest priority
9	Operations and Maintenance Planning	Decommission & restore pond area playground, parking and access					
10	Environmental Protection	Install fencing & signage around and in Nature Reserve zones	\$100,000			\$100,000	
11	Environmental Protection	Ogopogo and Pavilion trail restoration					
12	Gateway and Staging Area Improvements	Install information kiosk and gateway signage at Ellis St. entry					
13	Maintenance Infrastructure and User Services	Install signage on remaining trails	\$40,000	\$40,000		\$80,000	
14	Gateway and Staging Area Improvements	Improvements to Apex /Upper Lookout staging area		\$50,000		\$50,000	including orientation kiosk, restoration of dedication plaque knoll, and installation of interpretive signage at lookout
15	Gateway and Staging Area Improvements	Undertake improvements to Crown / Lower Lookout staging area	\$50,000			\$50,000	including orientation kiosk, trail realignment and bus loop
16	Gateway and Staging Area Improvements	Develop new Kathleen Lake staging /parking area		\$50,000		\$50,000	off road gravel lot including orientation kiosk
17	Recreational Amenities	Construct public washroom building at Crown / Lower Lookout			\$250,000	\$250,000	includes utility connections and drinking fountain
18	Environmental Protection	Develop Saddle Trail at Grainger Road park parcel					
19	Gateway and Staging Area Improvements	Develop staging /parking area at Grainger Road park parcel					
20	Maintenance Infrastructure and User Services	Realign Ellis Street and Poplar Point Drive					
21	Recreational Amenities	Establish dog-off leash area with water access at Ellis Street gateway					
22	Gateway and Staging Area Improvements	Develop universally accessible trail to Apex / Upper Lookout					
			\$210,000	\$160,000	\$270,000	\$640,000	

*All above actions should be the shared responsibility of IP and DCS.
IP handles preliminary planning and securing financial resources and DCS handles detail design and construction

Priority #	Objective	Operations and Maintenance Plan Item	Phase 3			Yr. 8-10 Total	
			2019 Year 8	2020 Year 9	2021 Year 10		
23	Operations and Maintenance Planning	Annual inspections and maintenance (PS)	\$49,400	\$49,650	\$49,900	\$148,950	annual inspections and maintenance of signage, trails, fencing, parking areas, lawns, irrigation, portable toilets, snow removal, security, tennis courts
24	Gateway and Staging Area Improvements	Portable washroom rental and maintenance (PS)	\$5,500	\$5,500	\$5,500	\$16,500	Paul's Tomb and Crown / Lower Lookout (April to Oct.)
25	Capacity Building and Public Involvement	Park Caretaker (PS, REBS)	\$31,200	\$31,200	\$31,200	\$93,600	3 year contract renewable in 2020
26	Capacity Building and Public Involvement	Half-time natural area park coordinator (PS, Bylaws)	\$40,000	\$40,000	\$40,000	\$120,000	dedicated bylaw officer; half-time in Knox Mountain Park, half-time in other natural area parks
27	Capacity Building and Public Involvement	(3) summer student positions (PS) (noxious weed removal and park ambassadors)	\$31,560	\$31,560	\$31,560	\$94,680	65 days per position including one vehicle
28	Operations and Maintenance Planning	Forest management (PS)	\$30,000	\$30,000	\$30,000	\$90,000	fuel modification, hazardous tree removals, replanting
29	Operations and Maintenance Planning	Rock scaling (PS)					
30	Monitoring	Update management plan and environmental status (IP)			\$75,000	\$75,000	
31	Operations and Maintenance Planning	Resurfacing of Knox Mountain Drive (PS)		\$200,000		\$200,000	
32	Operations and Maintenance Planning	Develop urban wildlife management plan (PS)					
33	Capacity Building and Public Involvement	Semi-annual stakeholder meeting (IP)	\$1,500	\$1,500	\$1,500	\$4,500	
34	Monitoring	Annual Scorecard Assessment (IP)	\$1,200	\$1,200	\$1,200	\$3,600	staff time and traffic "tube" counts in two locations
35	Capacity Building and Public Involvement	Dedicated park web page (IP)	\$2,500	\$2,500	\$2,500	\$7,500	
36	Capacity Building and Public Involvement	Half-time Grounds maintenance position (PS)	\$35,000	\$35,000	\$35,000	\$105,000	
			\$227,860	\$428,110	\$303,360	\$959,330	

*PS = led by Parks Services, IP = led by Infrastructure Planning, DCS = led by Design + Construction Services,
REBS = led by Real Estate & Building Services

Figure 18: Phasing and Costing Chart - Phase 4

			Phase 4					Yr. 11-15 Total	Notes
			2022	2023	2024	2025	2026		
Priority #	Objective	Development Plan Item	Year 11	Year 12	Year 13	Year 14	Year 15		
1	Environmental Protection	Apex trail (Front Face) restoration							
2	Land Use and Zoning	Rezone all park properties to P3 - Parks and Open Space							
3	Operations and Maintenance Planning	Realign Paul's Tomb trail and perform necessary restoration							
4	Maintenance Infrastructure and User Services	Install Paul's Tomb trail interpretive signage							
5	Recreational Amenities	Install vehicle access gate above Crown / Lower Lookout							
6	Recreational Amenities	Establish designated downhill and cross-country @mountain biking trails							
7	Environmental Protection	Kathleen Lake area trail development							
8	Environmental Protection	Annual Park perimeter fence installation	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$100,000	
9	Operations and Maintenance Planning	Decommission & restore pond area playground, parking and access							
10	Environmental Protection	Install fencing & signage around and in Nature Reserve zones							
11	Environmental Protection	Ogopogo and Pavilion trail restoration							
12	Gateway and Staging Area Improvements	Install information kiosk and gateway signage at Ellis St. entry							
13	Maintenance Infrastructure and User Services	Install signage on remaining trails							
14	Gateway and Staging Area Improvements	Undertake improvements to Crown / Lower Lookout staging area							
15	Gateway and Staging Area Improvements	Improvements to Apex /Upper Lookout staging area							
16	Gateway and Staging Area Improvements	Develop new Kathleen Lake staging /parking area							
17	Recreational Amenities	Construct public washroom building at Crown / Lower Lookout							
18	Environmental Protection	Develop Saddle Trail at Grainger Road park parcel	\$100,000					\$100,000	
19	Gateway and Staging Area Improvements	Develop staging /parking area at Grainger Road park parcel		\$100,000				\$100,000	off of Cara Glen - may be dependent on adjacent development
20	Maintenance Infrastructure and User Services	Realign Ellis Street and Poplar Point Drive		\$40,000	\$400,000			\$440,000	depends on land acquisition, detail design in first year
21	Recreational Amenities	Establish dog-off leash area with water access at@Ellis Street gateway							
22	Gateway and Staging Area Improvements	Develop universally accessible trail to Apex / Upper Lookout				\$250,000		\$250,000	decommission existing trail
			\$120,000	\$160,000	\$420,000	\$270,000	\$20,000	\$990,000	

*All above actions should be the shared responsibility of IP and DCS.
IP handles preliminary planning and securing financial resources and DCS handles detail design and construction

			Phase 4					Yr. 11-15 Total	Notes
			2022	2023	2024	2025	2026		
Priority #	Objective	Operations and Maintenance Plan Item	Year 11	Year 12	Year 13	Year 14	Year 15		
23	Operations and Maintenance Planning	Annual inspections and maintenance (PS)	\$35,650	\$38,900	\$39,150	\$39,400	\$39,650	\$192,750	annual inspections and maintenance
24	Gateway and Staging Area Improvements	Portable washroom rental and maintenance (PS)	\$2,750	\$2,750	\$2,750	\$2,750	\$2,750	\$13,750	Paul's Tomb (April to Oct.)
25	Capacity Building and Public Involvement	Park Caretaker (PS, REBS)	\$31,200	\$31,200	\$31,200	\$31,200	\$31,200	\$156,000	3 year contract renewable in 2023
26	Capacity Building and Public Involvement	Half-time natural area park coordinator (PS, Bylaws)	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$200,000	dedicated bylaw offier; half-time in Knox Mountain Park, half-time in other natural area parks
27	Capacity Building and Public Involvement	(3) summer student positions (PS) (noxious weed removal and park ambassadors)	\$31,560	\$31,560	\$31,560	\$31,560	\$31,560	\$157,800	65 days per postion including one vehicle
28	Operations and Maintenance Planning	Forest management (PS)	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$150,000	fuel modification, hazardous tree removals, replanting
29	Operations and Maintenance Planning	Rock scaling (PS)		\$165,000				\$165,000	Pauls Tomb Trail ; every 10 years
30	Monitoring	Update management plan and environmental status (IP)							
31	Operations and Maintenance Planning	Resurfacing of Knox Mountain Drive (PS)							
32	Operations and Maintenance Planning	Develop urban wildlife management plan (PS)							
33	Capacity Building and Public Involvement	Semi-annual stakeholder meeting (IP)	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$7,500	
34	Monitoring	Annual Scorecard Assessment (IP)	\$1,200	\$1,200	\$1,200	\$1,200	\$1,200	\$6,000	staff time and traffic "tube" counts in two locations
35	Capacity Building and Public Involvement	Dedicated park web page (IP)	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$12,500	
36	Capacity Building and Public Involvement	Full-time Grounds maintenance position (PS)	\$70,000	\$70,000	\$70,000	\$70,000	\$70,000	\$350,000	increase to full-time upon exceeding \$70,000 of annual inspectons and maintenance costs (see above); consider two half-time positions
			\$246,360	\$414,610	\$249,860	\$250,110	\$250,360	\$1,411,300	

*PS = led by Parks Services, IP = led by Infrastructure Planning, DCS = led by Design + Construction Services,
REBS = led by Real Estate & Building Services,

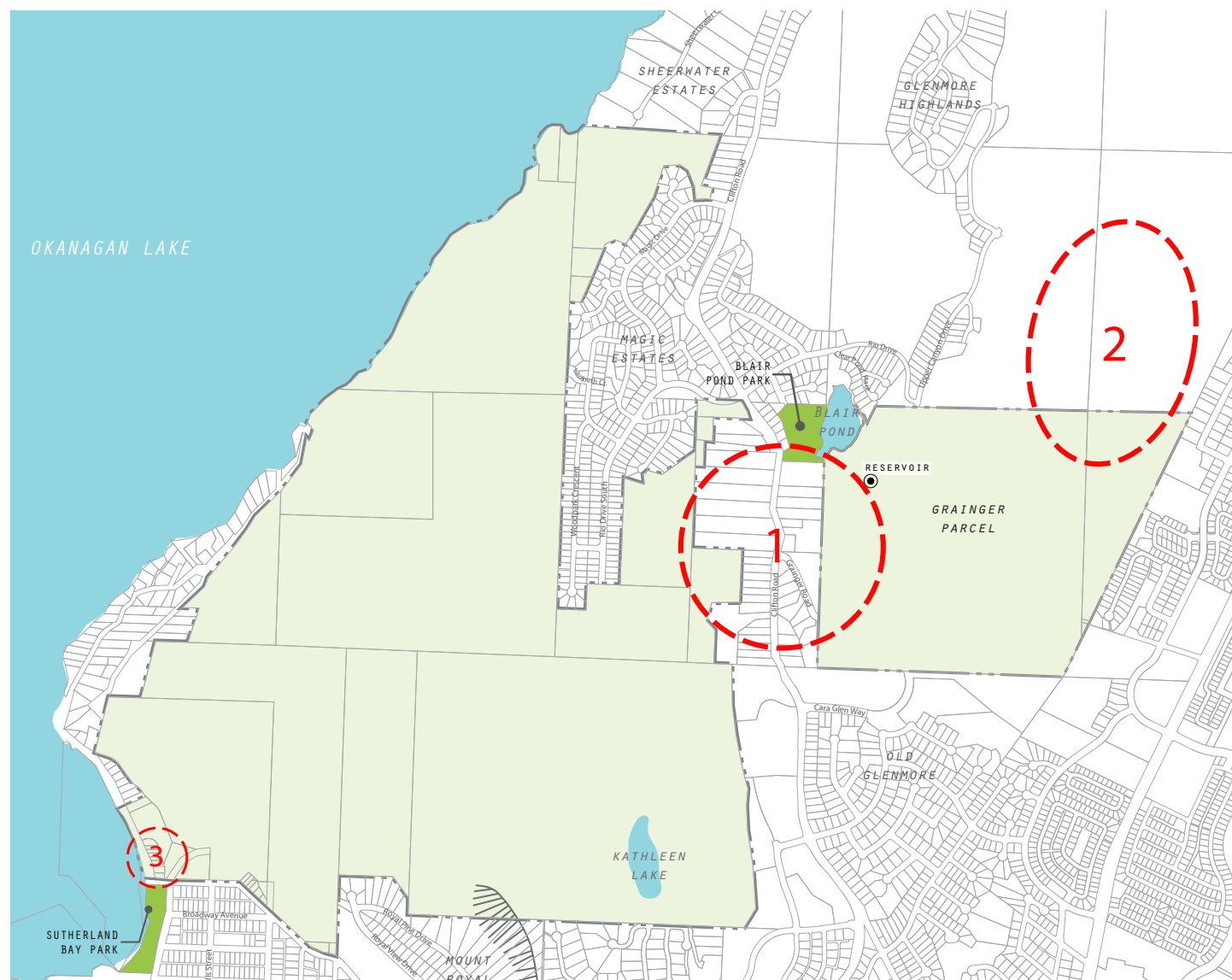


7.0 FUTURE AREAS OF INTEREST FOR PARK ACQUISITION

In order to facilitate improved connections between Knox Mountain Park, the Grainger Road parcels and other trail systems, acquisitions of additional properties are desirable. Areas of general interest have been represented in Figure 19. These designations on the map indicate general areas of interest where connections for both wildlife and trails are desirable, and do not include specific parcels or trail alignments.

Designation of such areas does not commit the City of Kelowna to acquire these or any other lands, but merely establishes a desired planning direction for City of Kelowna parks. More detailed planning and consultation will be required.

Figure 19: Future Areas of Interest for Park Acquisition



FUTURE AREAS OF INTEREST FOR PARK ACQUISITION

LEGEND



- 1** WILDLIFE & TRAIL CONNECTION BETWEEN KNOX MOUNTAIN & GRAINGER PARCELS
- 2** WILDLIFE & TRAIL CONNECTION NORTH TO THE GLENMORE HIGHLANDS
- 3** EXPANSION OF PARK NEAR ELLIS STREET ENTRANCE

 PARK BOUNDARY



8.0 CONCLUDING COMMENTS

This update to the 1999 Knox Mountain Management Plan was initiated in the spring of 2009. With input from city staff, external stakeholder groups and the public, preparation of this updated plan has been a flexible process that has evolved over its course.

The City of Kelowna 2011 Knox Mountain Park Management Plan provides sound guidance for the overall management of Knox Mountain Park for the next 10 to 15 years. The Management Plan establishes a framework for City decision-making with respect to park operations and maintenance, and it provides a strategic approach to park development and capital investment.

It is envisioned that the list of development priorities will form the basis for annual capital budget submissions, and that the Operations and Maintenance Plan items will form the basis for annual operational budget submissions by the individual city departments identified as the lead in the Phasing and Costing Charts.

It is also envisioned that this Management Plan, together with the Biophysical / Environmental Inventory, will be reviewed and updated in ten years (2021) or less and that the Development Plan items identified in Phase 4 will be further refined at that time. This will be an opportunity to confirm that the annual projects being undertaken in Knox Mountain Park are meeting the goals and objectives of the Management Plan.

This Management Plan provides a solid framework, enabling the City of Kelowna to showcase Knox Mountain Park as an outstanding natural area within City boundaries. The park is a living example of the way ecological values are protected in a place where appropriate kinds and levels of human activity are welcome; the policies of the Management Plan aid those who manage it in achieving the careful balance between environment and recreation.

The Plan underscores the City's commitment to public involvement and sets out avenues for community partners to participate in park activities.

9.0 APPENDICES

Companion Documents (under separate cover)

Companion Document 1: 1999 Knox Mountain Park Management Plan, Urban Systems Ltd.

Companion Document 2: 2010 Biophysical Inventory/Environmental Overview, Knox Mountain Park, Ecoscape Environmental Consultants Ltd.



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