

Smith Creek Comprehensive Development Plan



Protech Consulting (2012)

October 2020

Contents

Figures	4
Appendices	4
Part 1 – Administration	5
1.1 Comprehensive Development Plan Purpose	5
1.2 Plan Authority	5
1.3 Plan Preparation Process	5
1.3.1 <i>Smith Creek Process and Open Houses</i>	7
1.4 Interpretation	8
1.5 Timeframe	8
Part 2 Context and Background	9
2.1 Location	9
2.2 Background	10
2.3 Land Ownership	10
2.4 Site Context	11
2.4.1 <i>Geotechnical Conditions</i>	11
2.4.2 <i>Hydrological & Hydro-Geological Conditions</i>	13
2.4.3 <i>Existing Terrestrial & Aquatic Ecology</i>	13
2.5 <i>Wildfire Hazard</i>	15
2.6 <i>Archaeology</i>	16
2.7 <i>Landscape & Visually Significant Features</i>	17
2.8 <i>Adjacent Neighborhoods</i>	19
2.9 <i>Existing Infrastructure</i>	19
2.9.5 <i>Existing Utility Corridors & Utility Rights of Ways</i>	23
Part 3 – Concept Plan	24



Guiding Principles	24
3.1 Single Family and Clustered Housing.....	25
3.1.1. <i>Potential Unit Count</i>	26
3.2 Mixed Use	27
3.3 Natural Environment	28
3.3.1 <i>No-Disturb Areas</i>	28
3.4 Parks and Open Space	29
3.4.1 <i>Neighborhood Parks</i>	30
3.4.2 <i>Linear Trails</i>	30
3.4.3 <i>Open Space</i>	32
3.4.4 <i>Visual Impact</i>	32
3.4.4 <i>Remnant Lands</i>	32
3.5 Transportation Network	32
3.5.1 <i>Traffic Impact Assessment</i>	34
3.5.2 <i>Pedestrians & Transit</i>	34
3.6 Infrastructure and Servicing	35
3.6.1 <i>Water Supply</i>	35
3.6.2 <i>Sanitary System</i>	36
3.6.3 <i>Stormwater Management</i>	36
3.6.4 <i>Shallow Utilities</i>	37
3.7 Wildfire Mitigation and Fire Protection.....	38
Part 4 Development Policy	39
4.1 Land Use Policies	39
4.2 Environment Policies	40
4.3 Parks, Trails and Open Space Policies.....	40
4.4 Wildfire Mitigation and Fire Protection Policies	41



4.5 Transportation Policies	41
4.6 Servicing and Shallow Utility Policies	42
Part 5 Implementation	44
5.1 Official Community Plan	44
5.2 Rezoning and Development Permits	44
5.3 Subdivision.....	45
5.4 Phasing.....	45
5.5 Construction Management	46



Figures

1. Location and Context Plan
2. Boundary Plan
3. Topography
4. Slope Analysis
5. Environmental Sensitive Areas
6. Proposed Land Use
7. Open Space, Parks and Schools
8. Proposed Trails
9. Proposed Road Network and Classification
10. Sanitary Trunk Mains – Future Upgrades
11. Water – Future Infrastructure Works
12. OCP Land Use Plan
13. Development Permit Areas
14. Phasing Plan
15. Stormwater Management Plan
16. Smith Creek Master Plan

Appendices

- A. Geotechnical Assessment
- B. Hydrology Report
- C. Environmental Reports
- D. Wildland/Urban Interface Assessment
- E. Archaeological Impact Assessment
- F. Water Servicing Report/Peer Review Water Study
- G. Visual Impact Assessment
- H. Functional Servicing Report
- I. Traffic Impact Assessment



Part 1 – Administration

Protech Consulting (2012) has been retained to prepare the *Smith Creek Comprehensive Development Plan* for the undeveloped lands located north of the existing Smith Creek neighborhood in the City of West Kelowna. This Comprehensive Development Plan details the opportunities and constraints of the area, community design, land uses, parks and open spaces and services and staging of development in the plan area. The Plan's policies seek to complement and enhance the strength of the surrounding neighborhoods, while creating a new neighborhood that looks to the future.

1.1 Comprehensive Development Plan Purpose

The purpose of the *Smith Creek Comprehensive Development Plan* is to ensure growth and development of the area progresses in a logical and integrated manner. The CDP will further ensure that the development is set within the context of the adjacent existing and developing neighborhoods and the City as a whole.

The plan is written to be consistent with the vision, principles, goals and objectives of the City of West Kelowna Official Community Plan.

1.2 Plan Authority

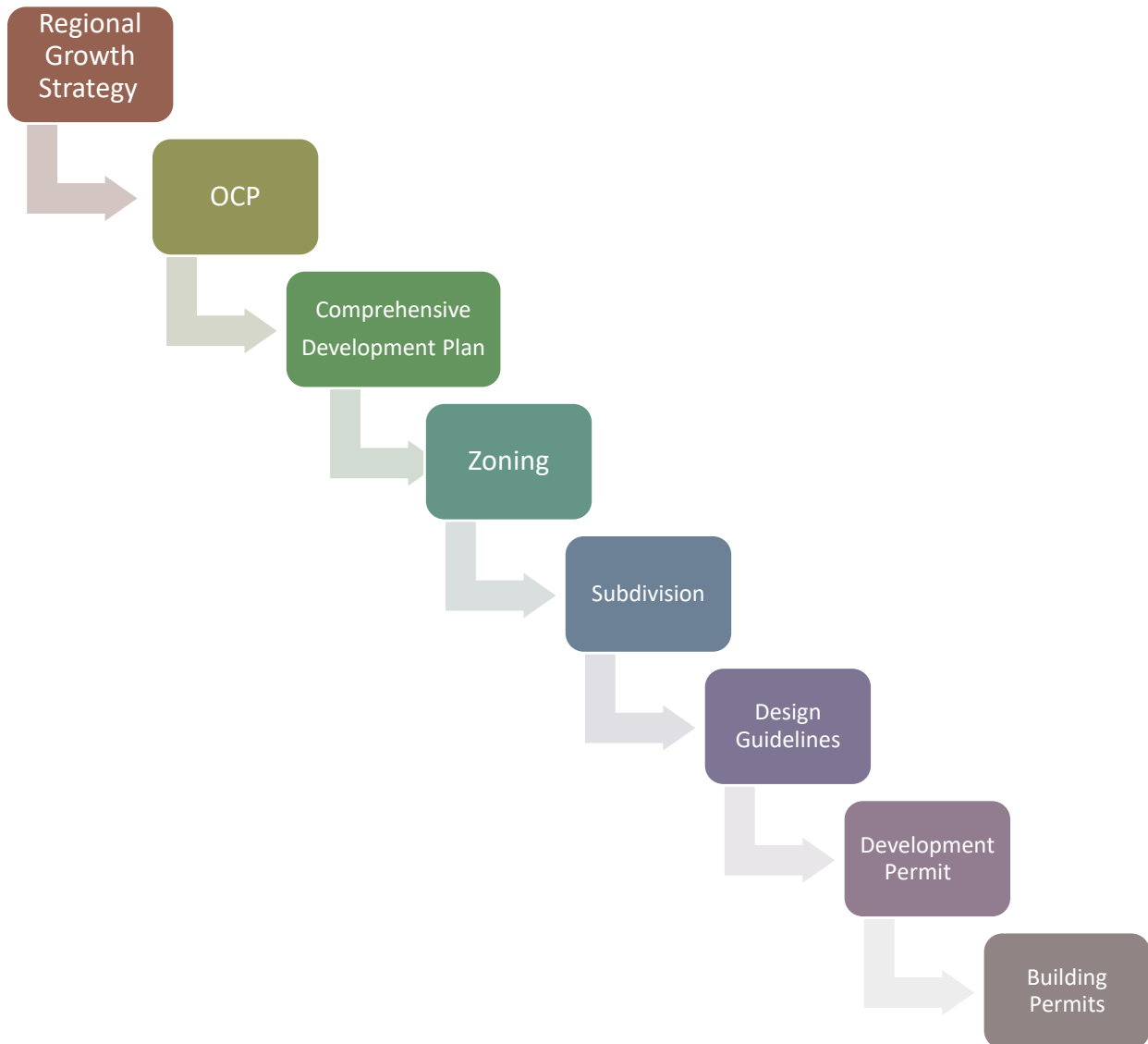
The authority which enables the City to consider a Comprehensive Development Plan (CDP) is outlined in the City's OCP Bylaw No. 0100. Section 3.1 Objectives and Policies Overview outlines the conditions under which a CDP shall be undertaken, Section 3.2.12 Comprehensive Development Areas discusses the objectives of the study and Section 4.1.1.9 General Policies and Objectives discusses the general components of the document.

Comprehensive Development Plans are non-statutory documents that must be endorsed by Council to become valid, and only specific OCP-related policy changes and Land Use Designation changes will be brought forward as an OCP amendment.

1.3 Plan Preparation Process

The City of West Kelowna has established a development approvals framework that is outlined in some areas of the community includes the establishment of a Comprehensive Development Plan. The following figure illustrates how the Comprehensive Development Plan relates to the other City planning documents.





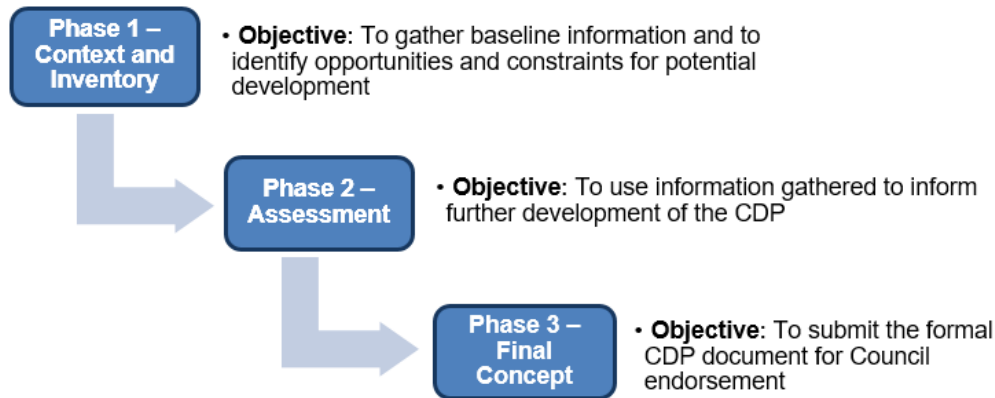
As illustrated above, a CDP provides an intermediate link between the OCP, and specific development applications. More specifically, CDPs provide policy and a generalized development concept for future development of a specific area.

A CDP must adhere to the spirit and intent of the Official Community Plan, and include primary development elements as it relates to the site. The primary elements addressed within a CDP include, but are not limited to land use, parks and open space areas, transportation, infrastructure servicing strategies, environment and ecology.



1.3.1 Smith Creek Process and Open Houses

The *Smith Creek Comprehensive Development Plan* was developed in consultation with a broad range of stakeholders including, various City of West Kelowna departments and interested citizens from the City of West Kelowna.



Phase 1 of developing this CDP created the foundation to support a concept plan for the site. This was done by completing the necessary technical reports to determine if the subject area could effectively accommodate additional land uses, as well as to gain an understanding of the opportunities and constraints of the site. As part of Phase 1, an initial consultation session was held to gather input from the public to provide a baseline for the community's priorities and inform the development of the CDP. As part of the consultation session, there was mixed feedback both in person and reflected in the exit surveys. Some residents felt that the density was adequate and the concept was generally accepted, but residents also voiced concerns and comments regarding:

- Too much density
- Wanted the flume protected as a hiking or natural area
- Inability of Smith Creek Road to handle additional traffic
- Housing form (do not want high density multi-family)
- Drainage from uplands

Phase 2 involved using the information gathered from the public and stakeholder engagement, as well as feedback from staff to further refine the CDP. Another key component to Phase 2 was to complete an additional public information meeting where the proposed CDP and accompanying plans were presented for additional feedback. As part of this consultation session, there was similar mixed feedback both in person and reflected in the exit surveys. As with the initial consultation session, residents generally accepted the idea of the area developing, however, there were concerns and comments regarding:

- Housing form (do not support townhouses along Smith Creek Road)
- Too much density (total number of units)
- Preservation of flume trail, existing trail network, and access to Crown Land trails
- Drainage and downstream impacts to Smith Creek (flooding)
- Impacts to existing road infrastructure (primarily Smith Creek Road and intersections)

- No neighbourhood park
- Preservation of additional greenspace (40-50% instead of 18%)
- Development and construction impacts (traffic, noise, etc.)

Also part of Phase 2 included a formal Public Hearing which occurred July 21st, 2020 at the City of West Kelowna Municipal Hall. There were 4 people in attendance, with two speaking to Council and approximately a dozen written submissions, again voicing concern with respect to potential flooding and traffic. In general it was felt that some of the previous concerns of earlier open houses had been relieved from revisions to the plan.

As part of the consultation and development of the CDP, a primary area of concern was regarding traffic impacts to the existing road system. This includes impacts to Smith Creek Road, and the future connection to Tallus Ridge Drive. The CDP document outlines these specific concerns in S.2.9.4, the proposed methods of mitigating the identified challenges in S.3.5, and policies to ensure the transportation concept is implemented as proposed and meets the expectations of Council and the public.

1.4 Interpretation

Mapping and figures within the *Smith Creek CDP* including boundaries, lot locations and location of any symbols or areas shown on a map or figure in the CDP are conceptual and will be refined as the plan progresses through future application processes with additional consideration by staff and Council.

Where an introductory statement accompanies a policy, it is provided only to illustrate the purpose of and enhance the understanding of a policy. Should an inconsistency arise between the statement and the policy, the policy will take precedence. The purpose of this plan is not to replace City policy documents or bylaws, but to enhance and provide assistance to the public, staff, landowners and consultants as to the expectation of the development of lands.

1.5 Timeframe

The *Smith Creek CDP* is intended to review and consider the proposed future use and transportation patterns for the area and is without set timelines. There is no specific timeframe applied to this Plan as development is determined by multiple contributing factors not the least of which is the market's demand for additional housing and specific form. It is anticipated that build-out could take place within 20 years after the start of actual construction of the early phases.



Part 2 Context and Background

2.1 Location

The *Smith Creek CDP* area is located on the west side of Okanagan Lake approximately 12 kilometres southwest of the W.R. Bennett bridge within the City of West Kelowna, 3.5 kilometres north of the Westbank Centre.

The subject lands are bounded in the north by vacant Crown lands with a Rural Resource OCP designation, south by the existing Smith Creek neighborhood which is predominately developed as single family residential, east by the existing Shannon Lake West neighborhood and west by vacant Crown Lands, Powers Creek as well as Park and institutional lands.

See Location and Context Plan Figure 1.



2.2 Background

The Smith Creek lands are identified in the City of West Kelowna's OCP as having future development potential subject to the completion of further, more detailed review which could identify viable development opportunities. The most sustainable opportunity of the considered development options in the plan area is the provision of predominately a variety of single/two family lots. The OCP references anticipated that future development of the area is primarily single-family residential; however, provisions for duplex and triplex housing may be considered where appropriate.

In July 2014, the City provided the Terms of Reference (ToR) to Protech Consulting and the landowners that set the framework and guidelines for the CDP development and corresponding process. The proposed *Smith Creek Comprehensive Development Plan* is being prepared for formal application submission in accordance with the content and format requirements set out under the Terms of Reference.



2.3 Land Ownership

The *Smith Creek* CDP area encompasses three separate parcels owned by:

Land Owner	Legal Address
0999149 BC Ltd. 1109 Churchill Road, Kelowna, B.C. V1Y 8K9	East 1/2 of DL 3478
0746043 BC Ltd. 1109 Churchill Road, Kelowna, B.C. V1Y 8K9 E12 K Systems Inc. 200, 537 Leon Ave., Kelowna, B.C. V1Y 2A9 0746031 BC Ltd. 800 - 1708 Dolphin Ave., Kelowna, B.C. V1Y 9S4	West 1/2 of DL 3478
Astro Properties Ltd. 604 - 737 Leon Ave., Kelowna, B.C. V1Y 8L6	DL 3977



2.4 Site Context

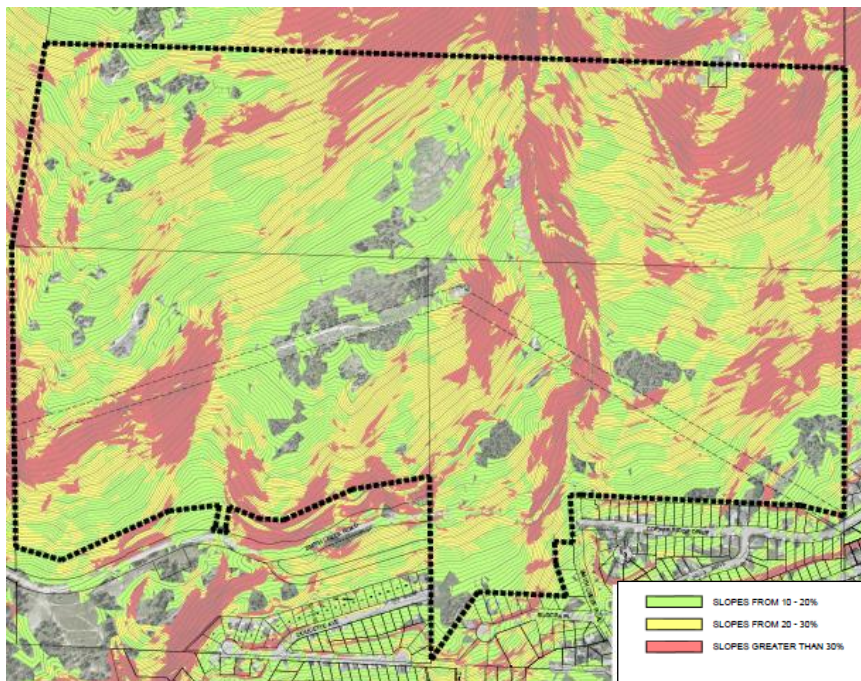
The following sections outline the key findings from previous studies completed as part of the development of the CDP. These findings represent the basis for the establishment of the policies and conceptual plans included in Part III and Part IV.

2.4.1 Geotechnical Conditions

Calibre Geotechnical completed a geotechnical review of the study area in 2007 and an updated assessment in 2015 and again in 2018. The later dealing specifically with the proposed reservoir and booster station. The purpose of the investigation was to prepare a geotechnical hazard assessment report which would identify any existing geotechnical hazards on the site and define safe developable areas. After the initial report a forest fire in 2014 burned a large area along the northern edge of the study area so a follow up report was prepared with the post fire condition under consideration.

The plan area topography is bedrock controlled and generally slopes down from north to south. The land is bisected by a BC Hydro power line right of way in the lower and mid-slope portion of the site and from north to south by Smith Creek.

Slopes on the site generally varied from 10 – 50%. Steeper slope gradients occur along Smith Creek channel, side slopes and in areas with bedrock outcrops. The area varies in elevation from approximately 600 metres in the lower portion of the site to approximately 850 metres in the upper northern portion of the site. The central portion of the plan area consists of gently sloping, undulating, benched terrain covered largely by glacial till.



The gentle slopes along the southern edge consist of sands and gravels. There is a raised glaciofluvial fan along the lower reaches of Smith Creek, upslope of Smith Creek Road and Copper Ridge Drive.

There are numerous ravines on the site however, there is no evidence of recent flow. It is thought that the ravines are either drainage relics from the previous period of glacial retreat or they have ephemeral flow.

The vegetation on the site predominately consists of mature coniferous trees, and indigenous scrub brush and grasses, typical associated with the arid environment of the Okanagan Valley. The plan area with the exception of a small area in the southeast corner cleared of trees is generally undisturbed.

No obvious signs of landslides, slumps or other instability features were observed during the site review on the properties under examination. The only potential geotechnical hazards identified on the study area were the potential for rock fall hazards associated with the bedrock outcroppings and the steep slope areas.

Although rockfall hazards exist on the property, it is felt that only a small number of proposed residential lots would be impacted and that minor scaling, protective fencing and or soil/rock berms would provide protection against rockfall during development of the affected lots.

With the Hillside development guidelines and building setbacks, it is anticipated that additional lands within the 30% slope range may be developed with more detailed site analysis and a custom designed architectural approach toward single family housing clusters and development nodes.

Recommendations – Geotechnical

The following recommendations form key considerations as part of the development of the Smith Creek CDP and the creation of the Development Policy included in Part 4 of this document. The recommendations highlighted below are supplemented by other recommendations made in the appended report and are intended to guide and inform future application processing:

- No development in areas identified in Calibre Geotechnical Report (Jan 16, 2016)
- Development below bedrock outcrops should include rock fall protection structures
- Given the post 2014 fire condition, monitoring of any significant erosion features to be carried out prior to and during development

More detail and specific recommendations can be found in the attached Geotechnical Assessment – Appendix A as well as a Topography Plan Figure 3 and Slope Analysis Figure 4.



2.4.2 Hydrological & Hydro-Geological Conditions

A groundwater and surface water assessment of the proposed *Smith Creek CDP* area was conducted in 2007 by Summit Environmental and updated by Western Water Associates, with the smaller area now being considered for development in late 2014. In addition to the changes in the development area from 2007, the City of West Kelowna has made amendments to bylaws, guidelines and policies, and a large forest fire occurred in the area in summer of 2014, both driving the needs for a revised assessment.

Evidence of shallow or deep groundwater was not prevalent in the project area. No springs or seeps were identified. The only evidence of possible shallow groundwater conditions were a faint draw with vegetation appearing slightly more green than surrounding areas on ortho-photo coverage, and two areas of hydrophilic vegetation at which shallow groundwater may discharge and collect following snowmelts. The study area does not overlie any provincially mapped aquifer systems and is unlikely that a shallow, surficial (overburden) aquifer is present at the site. It is unlikely that the proposed development (including stormwater management) will have a significant impact on local or regional groundwater quantity or quality.

Recommendations – Hydrological & Hydro-Geological Conditions

The following recommendations form key considerations as part of the development of the Smith Creek CDP and the creation of the Development Policy included in Part 4 of this document. The recommendations highlighted below are supplemented by other recommendations made in the appended report and are intended to guide and inform future application processing:

- Implement Best Management Practices during design and construction to minimize potential impacts to residence and roads from shallow groundwater
- Emphasize use of vegetated swales, ditches and existing natural areas to infiltrate routine storm runoff from roads
- Further geotechnical investigation for any potentially unstable terrain near Smith Creek
- Collect and convey surface runoff along natural drainage routes where possible

Detailed reporting and recommendations can be found in the Groundwater and Surface Water Hydrology reports attached in Appendix B.

2.4.3 Existing Terrestrial & Aquatic Ecology

In an effort to better understand the site's ecology and potential environmental sensitive areas, Makonis Consulting with assistance from Okanagan Wildlife Consulting completed a comprehensive environmental assessment. The original review was conducted in 2006 for the Regional District of Central Okanagan and has since been updated with and focuses on "content and inventory" with a distinct advantage to the other plans from previous inventories compiled in 2006 to utilize in comparison of updated inventory in the assessment and final concepts



presented. This, in light of the recent forest fire in 2014 that directly impacted the *Smith Creek CDP* and surrounding areas, has been taken into consideration within the updated inventory.

The plan area is located in the Okanagan very dry, hot, Ponderosa Pine, bio-geoclimatic subzone variant occurring at lower levels of the Okanagan Valley. This area is characterized as one of the warmest and driest forest variants for this subzone in British Columbia, due to its southerly latitude and the pronounced rain shadow. In general, plants encountered on the existing natural features of the area were typical given the dry forested conditions of the area. No rare or endangered plant species were noted in 2006 and again in 2014. An addendum to this report was completed again in July 2018 and noted that as long as the stormwater and overflow plan is followed and riparian setbacks maintained, downstream ecological effects on Smith Creek should be minimal.

2.4.3.1 Wildlife

All provincially Red and Blue listed vertebrate animals as well as Species-at-Risk Act vertebrates were assessed for possible occurrence in the proposal area. A short list of these species that could be on site was developed for a more detailed assessment. Habitat suitability was assessed for the wildlife species for which habitat models were prepared within the SEI project for the CDP area as part of the South Westside area, i.e., West Kelowna. The inventory was again reviewed in 2018 and found that there are no critical habitats for federally listed species at risk within or near the subject property.

2.4.3.2 Environmentally Sensitive Areas

The *Smith Creek* Environmental Assessment and subsequent Environmental Inventory identify environmentally sensitive areas (ESA's). The result of the surveys produced significance ratings for ESA's is an amalgamation of wildlife habitat and vegetation community ratings identified separately within the area.



Recommendations are provided through various stages of development, rezoning and subdivision that focus on healthy construction practices and development objectives found in the OCP.

Recommendations – Existing Terrestrial & Aquatic Ecology

The following recommendations form key considerations as part of the development of the Smith Creek CDP and the creation of the Development Policy included in Part 4 of this document. The recommendations highlighted below are supplemented by other recommendations made in the appended report and are intended to guide and inform future application processing:

- No development to occur in ESA-1 with exceptions related to crossing Smith Creek. Specific restrictions and permissions are found in Makonis Report July 2018.
- Smith Creek ESA-1 and Smith Creek will be incorporated into a minimum 100m corridor
- Recreational Trails in ESA-1 shall be kept to a minimum and outside riparian setbacks
- Open spaces shall be managed for wildlife and habitat. Wildlife trees (ie snags, dead standing, etc) should be retained.

A graphical representation of the ESA's identified on the subject lands can be found in Appendix C – Environmental Assessment Feb 2007, Environmental Inventory October 2014, Environmental Inventory Phase I March 2017, Environmental Inventory Phase I June 2017, Addendum to Phase Two Inventory for Future Phases July 2018, and Environmental Sensitive Areas mapping Figure 5.

2.5 Wildfire Hazard

Fire history and agricultural clearing have left much of the property in the low to moderate range for wildfire hazard. These areas coincide with the development areas as they lie on the gentler slopes of the property.

An update to the original Wildfire Hazard Report was conducted in 2014 by R.J.P. Holdings Ltd. The summary indicates that despite the history on the site, the assessment for the lands is still high. The prescribed treatments required will assist to reduce the wildfire hazard rating to low/moderate. The retention of these levels will be based on maintenance.

Recommendations – Wildfire Hazard

The following recommendations form key considerations as part of the development of the Smith Creek CDP and the creation of the Development Policy included in Part 4 of this document. The recommendations highlighted below are supplemented by other recommendations made in the appended report and are intended to guide and inform future application processing:



- Standard Treatment Prescription such as requiring removal of all dead and dying trees, thin out clumps of multi-aged trees and in areas where natural openings, or openings due to the removal of trees is greater than 5.0m spacing, a cluster retention system should be incorporated.
- Slash disposal should be implemented
- Adjacent Land Interface, including consideration to a mini fire break along North boundary.
- Housing construction should follow the Fire Smart program
- Ensure fuel breaks and defensible areas are maintained in a clean state

Specific site review and hazard ratings as well as recommendations from both reports can be reviewed in the Wildland/Urban Interface Assessment accompanying this report in Appendix D.

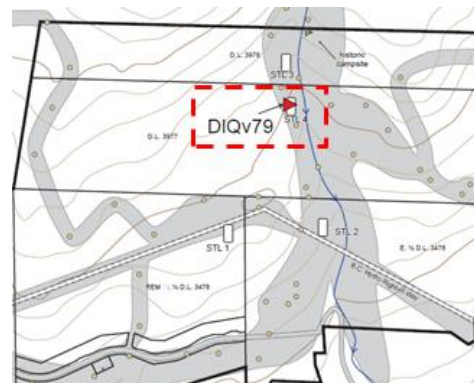
2.6 Archaeology

An initial review of the Ministry of Sustainable Resource Management Remote Access to Archaeological Data (RAAD) does not indicate any significant archaeological sites in the Neighborhood plan area.

According to Provincial records, archaeological site **DIQv-79** is recorded on DL 3977. **DIQv-79** consists of sub-surface lithics, meaning stone tools or flakes of stone created when making or modifying tools. **DIQv-79** is protected under the *Heritage Conservation Act* and must not be altered or damaged without a permit from the Archaeology Branch. Given the subsurface nature of archaeological deposits, boundaries of archaeological sites are difficult to determine without extensive subsurface testing. Therefore, any mapped boundaries are considered to be approximate and it is possible that the site is larger or smaller than currently mapped.

A further impact assessment was conducted by IR Wilson Consultants back in 2006 which identified one site of significance. DIQv 79 is situated within 20m of Smith Creek in D.L. 3977.

Given its proximity to Smith Creek, the Makonis Environmental Report of 2007 indicates the site could be within the riparian management zone, however, if impact to this site cannot be avoided, further archaeological investigation is recommended.



Recommendations – Archaeology

The following recommendations form key considerations as part of the development of the Smith Creek CDP and the creation of the Development Policy included in Part 4 of this document. The recommendations highlighted below are supplemented by other recommendations made in the appended report and are intended to guide and inform future application processing:

- D1Qv79 is within the boundaries of the proposed development, avoidance of this site is recommended.
- D1Qv80 is outside the project boundaries, however, if development occurs in the vicinity of this site further impact assessment is recommended.
- Should additional archaeological materials be uncovered outside site areas, all work in the vicinity should be stopped and the Archaeological Branch notified.

2.7 Landscape & Visually Significant Features

The Concept Development Plan area consists of a wide range of slope gradients ranging from gentle to steeply sloped tills with portions of exposed rock and incised gullies. Within the study area itself the elevation rises from 566 meters above sea level to the south to an elevation of 756 meters in the north.

Slopes range from 0% - 70% or greater with naturally occurring benches which lend themselves to environmentally sensitive design considerations which will reduce disturbance of the vegetation as well as the need for invasive cut and fill practices.

2.7.1 View Analysis

The Smith Creek CDP area is situated for the most part, north of Smith Creek Road. The site is made up of both southeast and southwest facing hillsides.

A Visual Impact Assessment (VIA) was conducted in 2018 to present and assess any potential visual impacts of the proposed development. Four viewpoints were examined in detail with results ranging from Moderate to Strong impact to Weak or None. Only 1 area (Viewpoint 1 – Ironridge Road) demonstrated Moderate to Strong impact simply due to the proximity of the existing neighborhood to the development.





Recommendations – View Analysis

The following recommendations form key considerations as part of the development of the Smith Creek CDP and the creation of the Development Policy included in Part 4 of this document. The recommendations highlighted below are supplemented by other recommendations made in the appended report and are intended to guide and inform future application processing:

- Natural vegetation and large stands of trees maintained in all areas outside of proposed development
- Maintain a close proximity of native trees to proposed development to help screen new homes
- Trees are to be planted where possible on exposed areas and within the pocket parks
- Architectural guidelines can assist with the development of varying building styles and heights to lower building impacts

Mitigation measures are discussed at length in the report and include, Siting and Earthworks; Finishes and Textures; Visual Screening ; Lighting and Construction Mitigation and if implemented will reduce the impact to Weak or None. The report can be found appended to this report as Appendix G.



2.8 Adjacent Neighborhoods

There are two neighborhoods in close proximity to the subject lands. Directly to the south and east is Smith Creek and further east is Shannon Lake West. Both of these neighborhoods are fully serviced with water, stormwater and sanitary.

These two areas are well established with some remaining development opportunities. Lots are mostly R-1 (Single Detached Residential) that permits a minimum parcel size of 550m² but average around the 750m² size. The architecture is a mix of craftsman style homes along with more modern west coast styles.



2.9 Existing Infrastructure

The CDP area is not serviced with any existing municipal water, wastewater or stormwater infrastructure. New infrastructure is discussed in more detail in the *Concept* section of this document.

2.9.1 Water

The subject lands are not currently serviced with a formal water supply connection. Future development in the area will require a water connection from the City of West Kelowna. Presently the existing Smith Creek area is serviced from the R-3 Smith Creek Reservoir located on Smith Creek Road at the 630.5m elevation. This reservoir has a maximum service elevation of 600m which will only service a very limited area within the Smith Creek Plan area.

Those areas above the 590m will be serviced by two booster stations and reservoirs. The Lateral1 – Shetler Road Pump Station will be decommissioned and replaced by a new booster station at the intersection of Harold Road and Elliot Road once the water demand from new development within the CDP area reaches the service capacity of the existing pump station. The internal Water Distribution System will be designed in accordance with the City of West Kelowna Works and Servicing Bylaw.

Recommendations – Water

The following recommendations form key considerations as part of the development of the Smith Creek CDP and the creation of the Development Policy included in Part 4 of this document. The recommendations highlighted below are supplemented by other



recommendations made in the appended report and are intended to guide and inform future application processing:

- Ensure that development follows the guidelines and principles laid out in the Aqua Consulting report.
- Replacement of the the Lateral 1 – Shelter Drive booster station at Harold Road when the existing capacity is exceeded.

More detailed water analysis has been completed and can be reviewed in the Aqua Consulting Water Servicing Report appended to this document as Appendix F

2.9.2 Storm Drainage

An original assessment of the surface and groundwater for the *Smith Creek CDP* was completed by Summit Environmental in 2006. A follow up assessment was completed in late 2014 by Western Water Associates Ltd.

The proposed development will occupy a significant portion of the project area with 27 ha of roads and right of ways and 77 ha of residential lots in the 149 ha development area. This is considered a low to medium density development with existing development of similar density already present downslope of the project site. There are several key factors to consider in the development of a stormwater management plan.

Firstly, direct discharge of stormwater to Smith Creek should be avoided. It has been established that under current conditions, stormwater infrastructure on Smith Creek is not adequate to accommodate current storm flows, as a result of both urbanization in the town core and residential development upstream of the highway (stormwater from which is often collected and directly discharged from the Creek). In light of this, conventional collection and discharge of stormwater from Smith Creek directly to the creek would only exacerbate the problem.

Secondly, the Smith Creek area appears to have some potential to incorporate in-ground stormwater management techniques to manage stormwater from minor-scale runoff events. In areas where soils and slopes are suitable, infiltration of stormwater via perforated piping, drywells and swales will help mimic pre-development conditions and distribute recharge across the site. Areas of the site have been identified where infiltration of stormwater will not be possible (e.g. areas of bedrock exposure or shallow bedrock) and stormwater from these areas will have to be collected and re-routed to areas where infiltration is feasible or detained to pre-development run off rates.

Soils at the site are not generally conducive to large-scale infiltration of stormwater through centralized facilities such as rapid infiltration basins. The fact that there is existing residential development downslope also needs to be considered, and together these factors point towards engineered collection and detention of stormwater resulting from major storm events. Where topographically possible, outflow from these facilities could be discharged to Smith Creek through staged/restricted outlets during the storm, or completely detained and released following the storm.



The only area where large scale infiltration of stormwater would be feasible is the broad, bench deposit above and east of Powers Creek, which follows Powers Creek to the northeast of the project site. Stormwater collected and routed to this area could potentially be infiltrated to ground through infiltration basins, from which stormwater would infiltrate and eventually emerge as discharge to Powers Creek. There is no development present downslope of this area, and surficial deposits in the area are inferred to be 10.2 metres thick. Detailed design of an infiltration facility would need to be supported by a sub-surface investigation (drilling) and informed by the opinion of a geotechnical engineer. The BC Hydro right of way leads from the centre of the project area into this area, and could potentially be utilized as a transmission corridor for stormwater.

Recommendations – Storm Drainage

The following recommendations form key considerations as part of the development of the Smith Creek CDP and the creation of the Development Policy included in Part 4 of this document. The recommendations highlighted below are supplemented by other recommendations made in the appended report and are intended to guide and inform future application processing:

- Direct discharge of stormwater to Smith Creek should be avoided.
- Engineered collection and detention of stormwater resulting from major storm events will likely be required.

Detailed recommendations can be found in the Western Water Associates Ltd Groundwater and Surface Water Hydrology report forming Appendix B.

2.9.3 Sanitary Sewer

Similar to water and storm drainage servicing, there is no formal sanitary sewer service within the CDP area. There are sanitary sewer connections presently at the boundary of the plan area at Smith Creek Road, Doucette Drive and Iron Ridge Drive.

The West Kelowna area is serviced by 3 main trunk systems; East side trunk, the Glenrosa trunk and the Westbank trunk. The Westbank trunk services the town centre into which the Shannon Lake trunk discharges.

Based on the initial review of the collection system there are two sections of the 250mm main that may require improvements in the future. These sections are on Reece Road and Broadview Road where the grades are 0.42% and 0.63%. The grades on the balance of the trunk main leading to Old Okanagan Highway are such that they provide the flow capacity for the project build out.

Main capacities will be identified during rezoning and detailed design will occur at time of subdivision.



2.9.4 Road Network

The westerly half of the Smith Creek plan area is bisected by Smith Creek Road which is in part a Section 42 road through the East ½ of DL 3478 and is a 30m dedicated right-of-way through the West ½ of DL 3478 as a requirement of the Major Road Network Plan.

As development proceeds in the Shannon Lake West Plan, Tallus Ridge Drive will be extended to the west, ultimately tying into Smith Creek Road at the point where Smith Creek Road turns from travelling north to west.

The timing of the connection to Tallus Ridge Drive through the CDP area will be reviewed through subsequent rezoning applications and public consultation. Based on NFPA standards, the construction of this road connection has been identified as being necessary at 600 units in order to meet the NFPA standards. However, as highlighted in S.1.3, the need for enhanced transportation connectivity in the area is a key concern and the timing of this connection may advanced as necessary and at the discretion of the City. As part of advancing this road connection, the following should be considered:

- There is a significant cost associated with creating a connection to Tallus Ridge Drive;
- A portion of the dedicated ROW (fronting Rem N ½ of W ½ of DL 3485) would need to be improved;
- Tallus Ridge Drive would need to complete its Westerly connection; and Road ROW would need to be secured to create a connection to Asquith Road



Smith Creek Road presently acts as a Minor Collector which ties into Elliott Road providing direct access to the business area of the City of West Kelowna. There are a number of side roads such as Reece, Butt and Bering that provide cross access to the major commercial area of IR#9. The City of West Kelowna has identified Smith Creek Road as an Arterial Road; significant upgrades have been identified and reflected in the City's DCC plan. The advancement of this project would be subject to input from the

City of West Kelowna and Council priorities. The timing may be advanced at the discretion of the City and may impact the zoning approval of additional phases of development within the CDP area. The CDP outlines the opportunities available for the City of West Kelowna to require the advancement of this project as a DCC creditable project in S.3.5 and S.4.5 of the CDP.

Another minor point of access is Doucette Dr. which connects to Salish Road and Harold Road, thru to Elliott or Shetler to Elliott. Elliott also accesses Glencoe which in turn ties into Lower Glenrosa Road to Westbank Centre.

The newly constructed Asquith Road will also provide ties from Wildhorse Drive and Tallus Ridge Drive to Shannon Lake Road which will provide access south to Town Centre area or East to the Stevens Road Industrial Area or Hwy 97. As Smith Creek Road is proposed to connect directly to Tallus Ridge Drive, the City will consider the Asquith Road connection as part of the update to

the Master Transportation Plan. The Asquith Road connection has been identified as a priority connection for the development of the CDP lands.

Recommendations – Road Network

The following recommendations form key considerations as part of the development of the Smith Creek CDP and the creation of the Development Policy included in Part 4 of this document. The recommendations highlighted below are supplemented by other recommendations made in the appended report and are intended to guide and inform future application processing:

- CDP area will require a third access point before the number of units developed exceeds 600 in accordance with the NFPA emergency access requirements.
- An exclusive westbound right turn lane for Smith Creek Road (NS) at Elliot Road (EW) is required to achieve acceptable line of sight.
- Provision of Stop sign control for all project roads approaching Smith Creek Road
- Sight distance at the project access roads to Smith Creek Road and internal intersections should be reviewed with respect to City standards

Further detailed traffic information can be reviewed in the Smith Creek Transportation Impact Assessment found in Appendix I. Proposed Road Network and Classification are on Figure 9.

2.9.5 Existing Utility Corridors & Utility Rights of Ways

With the exception of the BC Hydro right-of-way, there are no known existing utility and utility rights of ways. However, as land development progresses, typical utilities, including hydro, telephone, cable, and fiber optic systems will service the site through underground systems.

It should be noted that BC Hydro has identified a portion of the CDP area as part of their study corridor. While a specific route for a new hydro line has not been determined it is important to recognize that these development lands are within their study area and could see impacts if a future line was determined there.

It is also anticipated that natural gas will be distributed throughout the CDP area.



Part 3 – Concept Plan

The City of West Kelowna Official Community Plan (OCP) identifies the Smith Creek CDP lands as an area for further investigation related to future development. With a predominant future land use of residential it is anticipated the area would be suitable for approximately 683 single/two family units and 222 units of clustered and/or townhomes.

The Official Community Plan Bylaw 0100 identifies project future requirements and objectives and policies for those activities that may affect neighborhood environments. Recognizing the unique qualities of Smith Creek, the goal is to create a high quality, comprehensive and well-designed neighborhood that is first and foremost, complementary to its natural setting.

The *Smith Creek Concept Development Plan* represents an opportunity to establish a framework to guide development that integrates with the long term social and environmental condition of the site. The vision for this neighborhood is founded on two fundamental principles; 1) the historical and background information outlined in Part 2.0 of this study and 2) the broader goals and objectives found in the City of West Kelowna formal policy documents.

Guiding Principles

- Recognize the importance of the City's goal of maintaining and enhancing the character and livability of neighborhoods
- Recognize the City's objective to protect, restore and integrate environmental features within neighborhoods, including, but not limited to the historic flume trail
- Encourage unique architectural forms that respect to the topography, view corridors and surrounding neighborhoods
- Ensure connectivity throughout the *Smith Creek* plan area to existing neighborhoods, for both vehicles and pedestrians
- Ensure future management and access to Crown Land

These principles will promote neighborhood design which integrates natural features and is respectful of the natural hillsides. The neighborhood includes single and two family housing forms in response to the City's area policies. The public areas are designed as interconnected parks, walkways, viewpoints, trails and pathways.

This plan respects the land in its raw state and will take advantage of eco-friendly design approaches wherever possible.

The development concept outlined below is intended to provide an overview of the development potential for the CDP area and highlight key recommendations that have been developed based on the appended reporting as well as direct input from City staff.

At completion, the *Smith Creek* area should have approximately 905 units (2114 residents at 2.3/unit) enjoying this Okanagan Valley gem. There will also be a small node identified as Mixed Use to provide for a future small scale commercial opportunity should it be warranted.



3.1 Single Family and Clustered Housing

The City of West Kelowna Official Community Plan envisions the dominant housing form being single family detached residential. The CDP identifies that a majority of the housing will be detached single family with opportunities for single family cluster housing which allows for smaller homes/compact housing on smaller lots allowing for a range of types and affordability on the site. While the site is planned for predominately single family housing, in some areas capable of development, clustering the housing will allow for preservation of steeper slopes.

As a result of increasing land and development costs (which puts home ownership out of reach of many young families) and changing housing preferences with higher priorities placed on leisure activities the development will provide cluster housing choices. Hillside development clusters can be easily incorporated into the hillside condition with less impact upon the natural environment than conventional fee simple lots, yet at densities comparable and compatible with single family detached housing. The ability to integrate these housing forms is yet another attribute of the comprehensive development approach toward land use regulation in *Smith Creek CDP area*

As identified above, cluster housing can be defined as smaller detached homes that each have their own parking areas and private outdoor areas but share a common entry space such as a courtyard or terrace but still considered single family.

Typically houses are developed on smaller lots which allow for larger areas of land to be protected for environmental reasons, attempts to maintain rural character and preservation of farmland. Total number of homes, or density on a given acreage do not increase, the same number of homes would be clustered on a small portion of the available land.

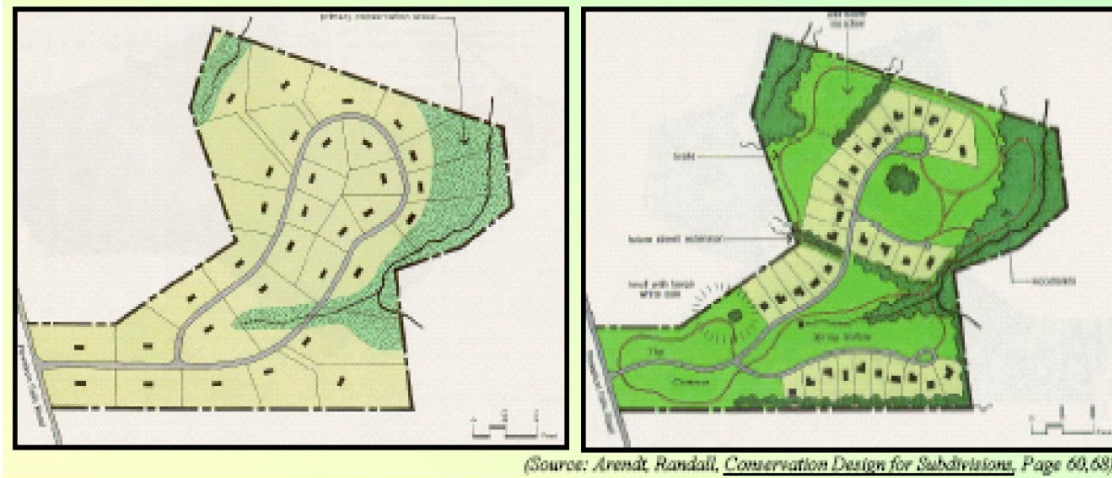
Given that a specific zone for *Cluster Housing* does not currently exist in the zoning bylaw, the landowners will work with the City of West Kelowna at the time of rezoning to adopt a new zone to address this housing form

Proposed Land Use Plan Figure 6 demonstrates the proposed residential development areas consisting of approximately 103 ha (262 acres). Approximately 42.5 ha (105 acres) are shown as conservation, including the BC Hydro right of way. BC Hydro continues to study a second transmission line location and at time of writing no location has been decided however, the CDP area does fall within their study area.



Conventional Model

Conservation (or Cluster Model)

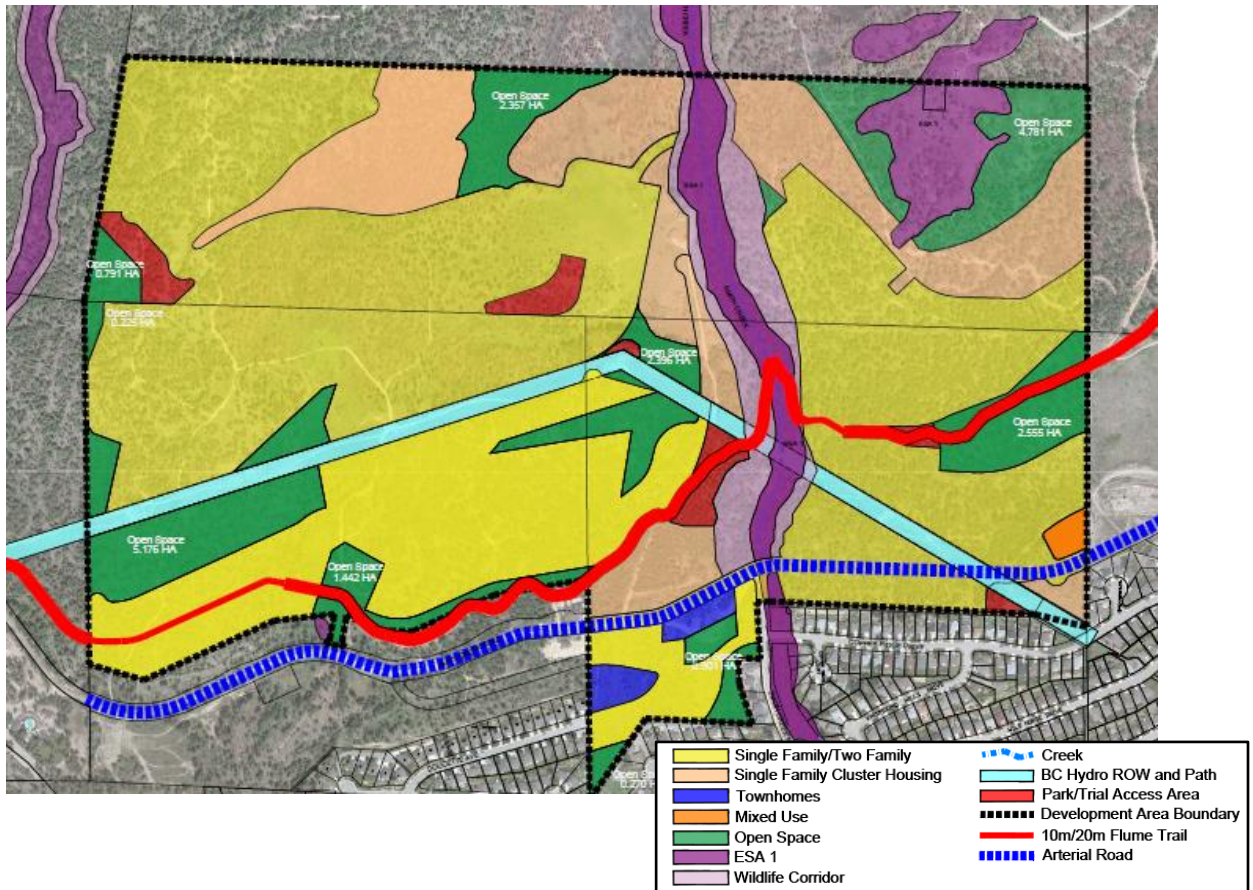


3.1.1. Potential Unit Count

Initial calculations based solely on removal of ESA 1 areas and areas with topography over 30% indicate that approximately 683 single family units and 222 single family cluster housing units could be achieved. These areas and calculations include DL 3977, assuming this land will be developed in the future. Without DL 3977 lands, the west and east ½ of DL 3478 area is 85.1 ha (210 Ac) there is an approximate potential of 454 single family and 124 comprehensive units. This number translates into a total overall density of approximately 6.8 units per ha. (2.7 units per acre). As noted in Part 1 of this CDP these are approximate figures and will be further refined as subsequent application process are evaluated.

The Smith Creek Comprehensive Development Area included DL 3977 within the plan boundary for a total area of 148.76 ha. Development will be focused on the west and east ½ of DL 3478 as it is not anticipated that DL 3977 will be developed in the foreseeable future.

Lot	DL 3977	W ½ of DL 3478	E ½ of DL 3478	Total Area
Size (ha)	63.63	42.01	43.12	148.76
Area under 30% Slopes	48.83	34.45	33.68	116.96
Area over 30% Slopes	14.80	7.56	9.44	31.80
BC Hydro Area	0	2.59	2.84	5.43
Flume Trail Area	0	0.86	2.18	3.04
Single Family Area	28.78	31.96	22.22	82.96
Comprehensive Area	16.87	0	3.59	20.46
Townhomes	0	0	1.10	1.10
Mixed Use	0	0	0.39	0.39
Park/Trail Access	1.33	0	1.01	2.34
Open Space	8.09	7.00	5.74	20.83
Riparian Area	8.39	0	3.82	12.21
Total Units				
SF Unit Count	229	277	177	683
Clustered/Townhomes	128	0	94	222



Proposed Land Use Plan Figure 6.

3.2 Mixed Use

As discussed in Section 3.3.2 of the Official Community Plan, a small area in the southeast corner of the E ½ pf DL 3478, on the future extension of Tallus Ridge Drive will be designated as Mixed Use. The area will provide an opportunity for a mixed use, small scale neighborhood commercial development with a residential component should densities warrant in future.

Ground floor commercial which could include, retail, office space and personal services would be combined with residential in this location. This will help to meet the needs of residents for basic shopping needs. This or any identified area would require surrounding densities to be at a level that a commercial component could be sustained.

During review with the City, it has been identified that should another more appropriate site be secured in the future, the City would be open to an amendment of the designation of this site.

3.3 Natural Environment

A large portion of the Neighborhood plan site is planned for Open Space. Approximately 42.5 ha (105 acres) is designated as open/green space. These areas were designated accordingly based on a number of factors including topography.

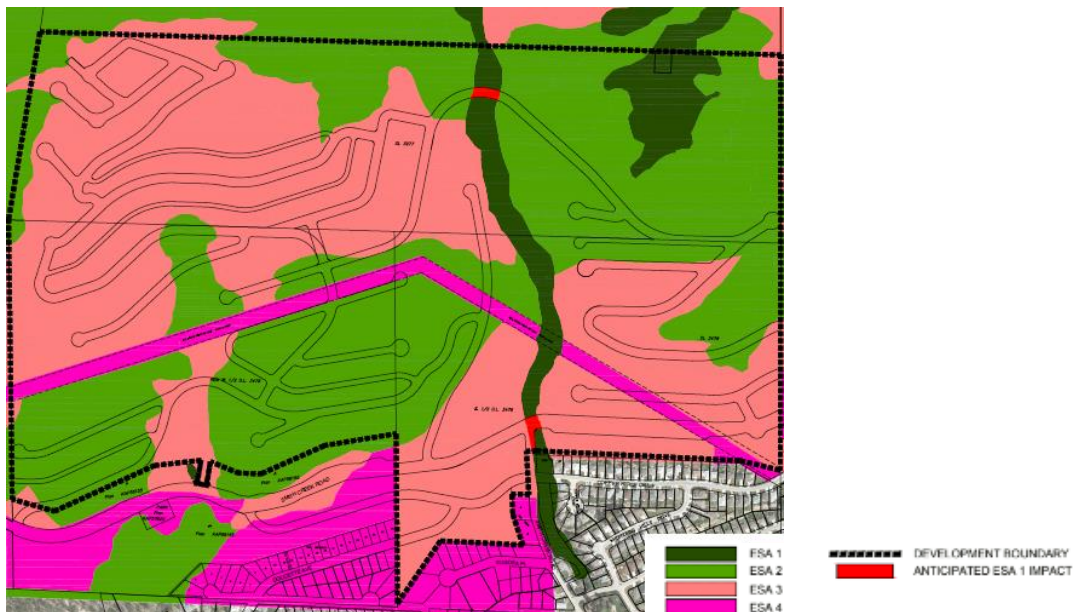
While there are pockets of flat and mildly sloping lands within the open space areas, they are predominately over 10% and upwards of 30% making residential and road development difficult. In addition, a portion of the open space areas are restricted from development as a result of the Environmental Assessment that was undertaken on the study area and designated such areas as ESA 1.

It is anticipated that these areas will provide greenbelts free from development but offer walking and hiking opportunities into, through and out of the development in order for residents and neighbors to enjoy the sweeping vistas and natural terrain.

3.3.1 No-Disturb Areas

Impacts on the *Smith Creek* CDP area will be significantly decreased through preservation and protection of environmentally sensitive areas and parks and open space and avoiding fragmentation. See Figures 5, 7 & 8.

These figures show the ESA's as well as the conceptual lot layout. While it may appear that the lots impact the vast majority of the subject lands, in fact, this is not so. The actual building envelope on the lots will be relatively small. Any and all site development will be regulated to ensure impacts with the sensitive areas are avoided or mitigated. Areas of high sensitivity will be protected with "no-disturb" covenants.



Open space areas and parkland may be dedicated to the City of West Kelowna, however, only those lands that qualify under s.10 of the *Local Government Act* will be considered as part of the 5% parkland dedication.

Additional information regarding the dedication of open space areas is included in the Remnant Lands section of this document.



3.4 Parks and Open Space

In consultation with staff, (the regulatory authority at the time), it was determined that the need for athletic and community park facilities were of low importance in the plan area due to the close proximity of the Smith Creek Wildhorse joint school and park site, the Kinsmen Athletic Park and the potential for the current landfill site to be decommissioned and developed as park. This continues to be the case in the 2010 Parks and Recreation Master Plan.

Figure 16 Parks and Trails Masterplan identifies two linear trail connections from the Shannon Lake Regional Park traversing through the site to an upper linear trail that runs southwest and northeast, connecting to the Shannon Woods neighborhood and *Smith Creek* neighborhood.

The City of West Kelowna Parks & Recreation Master Plan discusses the Smith Creek area and recognizes that there are 14 existing parks. Trail networks are well developed and there are several small neighborhood parks that have playgrounds and community amenities. Responses to the parks study showed that Smith Creek residents value their connections to Crown Land.

The development's intent is to allow large pockets of the native hillside to be retained for both recreation and a sense of place with some additions to enhance the communities experience through this native vegetation.

Figure 7 – Open Space, Parks & Schools

Figure 8 – Proposed Trails

Figure 16 – Parks and Trails Masterplan



3.4.1 Neighborhood Parks

The West Kelowna Parks and Recreation Master Plan 2010 discusses acquiring Neighborhood Parks in Recommendation 25 of the document. The goal of a parks system is to provide adequate recreation resources that meet the unique needs of a community. The objective of the recommendation is to *increase the City of West Kelowna's park base through parkland dedication at the time of subdivision.*

Three larger neighborhood park areas have been identified within the CDP area. The first area is located along the future Dixie Road at the crossing with the flume trail (see Fig.7). The 0.50 ha location is adjacent to the historic Smith Creek flume trail and provides a centralized, convenient access point to Smith Creek and many other trails in the area. Dedication of this neighborhood park would naturally best occur in Phase 2 or 3 of the Smith Creek CDP development. There are two other larger park areas identified in future phases which can be seen on Fig. 14 Phasing Plan.

The Smith Creek area also already has several community parks, specifically Aspen Park, a Natural Area and Wild Horse Community Park which is a Community Park that represents a future opportunity for athletic facilities. This new neighborhood park will provide a large contribution towards this development's requirement of meeting the parkland area dedication obligation. Details surrounding the parks will be furthered during the zoning process and park areas will be dedicated at the time of subdivision per the *Local Government Act.*



3.4.2 Linear Trails

In addition to the existing natural trails, approximately 7.1 ha (17.6 acres) has been shown as a trail system leading from the west boundary of Shannon Lake West neighborhood west through this plan area to the south. Efforts will be made to link trails to the Trail Society trail network. These trails will be dedicated to the City of West Kelowna. See Parks and Trails Masterplan -- Figure 16.

Currently, a number of natural trails weave their way from the northeastern corner of the plan area diagonally through to the southwest corner. This natural trail linkage provides an



important link from the Shannon Woods development down to the Smith Creek Ranch area. It is planned that these trails will remain in their natural form and allow for the continued enjoyment of those who currently use them.

Fine tuning of the trail locations and widths will be completed at the time of zoning and subdivision when final lot layouts are determined, however, area and location will remain in general accordance with the layouts shown in this plan document.

The Dobbin Flume was built during the period of 1922-1945 along with several new dams to meet the demand for water in the Westbank area and has become an integral part of West Kelowna's irrigation history.

The flume trail will be a minimum of 20m in width, the natural open space area trails 10m in width and 7.6m wide in residential areas. Crossings of the Flume trail will be limited. Trail difficulty is identified in Figure 16 as well and utilizes the ski terrain difficulty color scheme, with Green Circle being the easiest, Blue Square more difficult and Black Diamond the most difficult.

In Recommendation #25 (CR #25) of the West Kelowna Parks and Recreation Master Plan 2010, Smith Creek recommendations are specifically referenced as follows:

- Linear trail connections to other neighborhoods, notably Westbank Centre and Shannon Lake
- Develop trailheads that provide access to Crown Lands
- The Dobbin Flume Trail
- A trail link through the neighborhood that allows equestrian access to the Crown Lands.
- Three staging areas have been identified along the flume trail to allow for access to the trail and to carry on hiking on the trail or to Crown Lands. The staging areas are strategically placed and sized to allow for vehicular parking. There are 4 additional staging areas in various locations throughout the development as well. These areas are shown on the drawing entitled; Smith Creek Master Plan.



3.4.3 Open Space

In addition to the park space, considerable areas within the study boundary will remain as Open Space. Lands where slopes are in excess of 30% or there are significant wildfire hazards or rock outcroppings will be left as open space. Open space in the plan area results in approximately 21 ha (51.9 acres) which equates to 14% of the total plan area. Open space may become City land but not included in parkland dedication calculations.

Open space areas will be linked physically by either natural trails or pedestrian sidewalks to meet recreational hiking demands. These open spaces will be left in their natural state, subject to the provisions of the wildfire hazard assessment and the environmental recommendations.

Access to Crown Land which abuts the study area will be specifically addressed at the time of development through the *Land Title Act* requirement of Access to Lands Beyond.



As in most large concept area plans, once specific parks areas have been determined, there are left remnant lands which are comprised primarily of environmentally sensitive areas, undevelopable lands due to steep slopes, wildlife corridors and environmental buffers. These remnant land areas will be further reviewed and discussed during rezoning in order to determine how they will be protected, be it dedication, covenant or other mechanism.

3.5 Transportation Network

The following are objectives of the transportation plan:

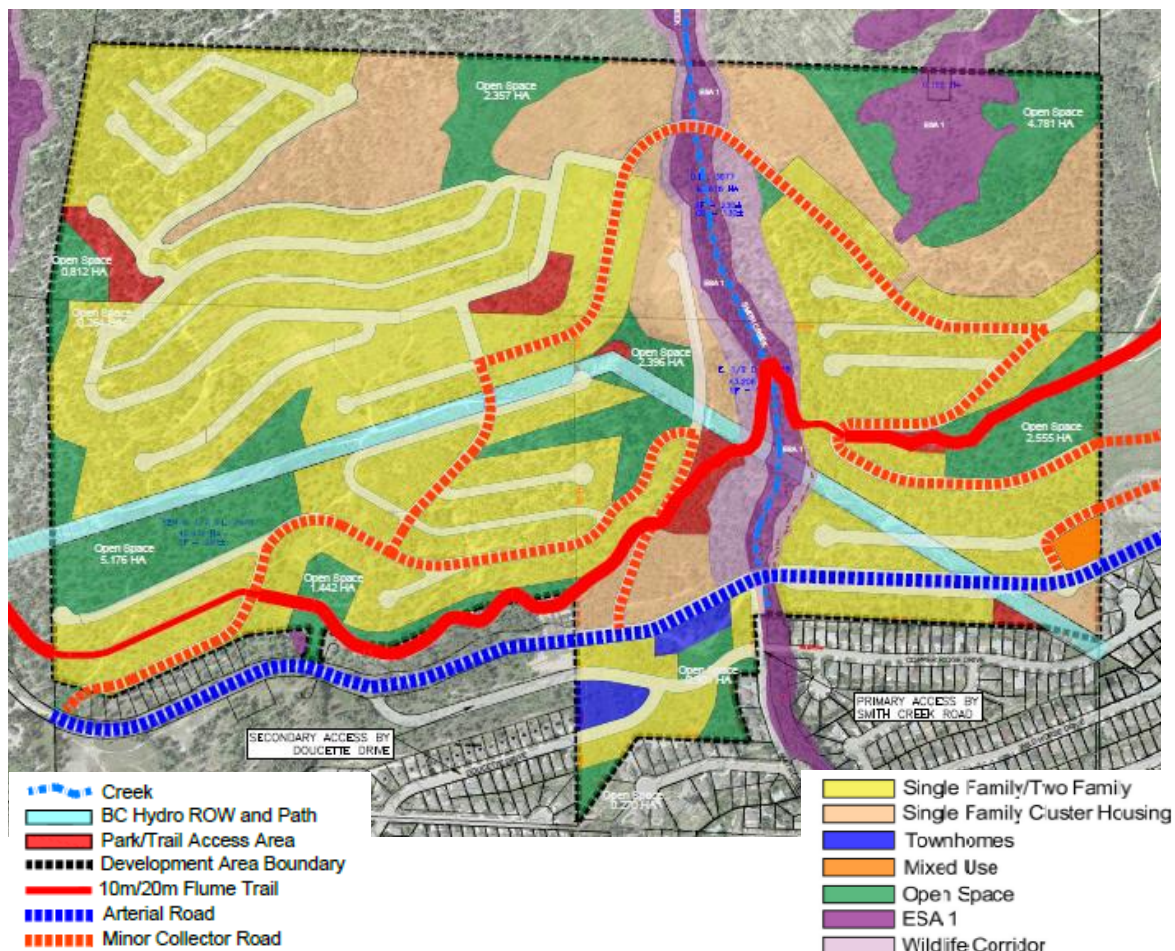
- Develop entry and connecting Smith Creek Road from adjacent neighborhoods
- Develop roadways that are pedestrian oriented
- Alternative modes of transportation be promoted and accommodated in support of West Kelowna's Transportation Master Plan
- Way finding signage identifying pathways and linkages
- Internal road network designed to accommodate interconnecting pedestrian systems within the residential neighborhood



- Internal road network should consider future transit stops and routes
- Roadway circulation should create opportunities for transit friendly development
- Connection to neighboring roads to provide principle route choices to destination points outside Smith Creek
- Ensure that the transportation objectives of the City of West Kelowna and input from residents are incorporated into the timing and design of road connections; and
- Mitigate any adverse road conditions created through additional development of the CDP lands through off-site improvements (e.g., interim road improvements, construction of the DCC portion Smith Creek Road, etc.) or the advancement of other road connections

Further specific intersection analysis and impacts will be done at the time of rezoning when plans are more finite and defined. Intersections that will require further review outside the current Traffic Impact Analysis will be determined in consultation with the City's traffic consultant.

As required by the *Land Title Act Sec 75(1)(b)* Access to Lands Beyond has been provided to all applicable adjoining parcels. Proposed Road Network and Classification Figure 9.



3.5.1 Traffic Impact Assessment

A Traffic Impact Assessment was undertaken to identify the potential impacts the proposed development will have on off-site roadways, as well as identification of necessary mitigation measures required to support development and to address any of the CWK's transportation related concerns. The study area identified by the City of West Kelowna as:

- Smith Creek Road (NS) at Wildhorse Drive (EW)
- Smith Creek Road (NS) at Elliot Road (EW)
- Elliot Road (NS) at Reece Road (EW)
- Shannon Lake Road (NS) at Asquith Road (EW)
- Tallus Ridge Drive (NS) at Asquith Road (EW)

Only one required improvement in the study area has been identified to achieve acceptable traffic operations; construction of a westbound turn lane for Smith Creek Road (NS) at Elliot Road (EW). Further discussion with City staff will be required to determine methods of financing this improvement on a fair share basis or through DCCs.

The TIA also concluded that the development area should have a third access point before the development reaches 600 units. It is important to note that the study concludes that the construction of the Tallus Ridge Drive extension will serve as an excellent parallel route which will assist in alleviating the projected eastbound capacity deficiencies along Asquith Road. There are no other major requirements for this development from a traffic perspective.

The detailed Traffic Impact Assessment, including all appendices can be found in Appendix I.

3.5.2 Pedestrians & Transit

This plan recognizes the importance of pedestrian connections to and from the development area. Such areas connect adjacent neighborhoods, parkland and Crown land. There are a variety of ways to ensure pedestrian connections are accommodated in developments. The Smith Creek Neighborhood plan aims to provide such connectivity both through open space trail opportunities and via constructed sidewalks through the development. A system of walking trails, walkways and sidewalks will provide access to the various nodes within the plan area as well as to the local parks and schools. A green belt corridor under the B.C. Hydro transmission line that traverses the site will provide an interconnecting corridor as well as a wildlife corridor. In keeping with the Shannon Lake West Plan the existing old flume alignment has also been identified as a trail corridor which is identified in the plan to extend through the site to the Crown lands in the west.

Currently transit exists in the lower Smith Creek area which serves the existing area neighborhoods with potential to expand into the more northerly proposed Smith Creek neighborhood. Roads within the Smith Creek plan area will be designed to accommodate transit if and when deemed necessary.



3.6 Infrastructure and Servicing

The CDP area is not serviced with any existing municipal water, wastewater or stormwater infrastructure. As new infrastructure will be required to connect and service the area by extending sewer trunk mains, water trunk mains and road networks, Protech Consulting (2012) has reviewed and evaluated the preliminary servicing needs to provide the *Smith Creek CDP* area with potable water, stormwater management and sanitary sewer servicing. Engineering review as well as environmental and geotechnical studies have determined that infrastructure servicing methods proposed are feasible.

As described in more detail in the Functional Servicing Report (FSR) appended to this document, detailed engineering review of the sanitary and storm systems, water distribution and transportation networks has occurred and confirms that with the improvements itemized in the report, the existing infrastructure can accommodate this development while meeting the standards of the City of West Kelowna Works and Service Bylaw 0249.

Details of the infrastructure needs are discussed in more detail in the Functional Servicing Report found in Appendix H

3.6.1 Water Supply

A portion of the plan area is presently within the servicing area of the City of West Kelowna as per the boundaries of the original water purveyor, Westbank Irrigation District. The area outside these boundaries was identified as future development lands.

To identify the servicing issues, Agua Consulting undertook a Water Servicing Study for the Smith Creek Development Area and the following is a summary of their findings.

Presently the Smith Creek Area is serviced by the Smith Creek Reservoir located on the boundary of the plan area on Smith Creek Road with a high water level of 630.5m as shown on Figure 11. The service area elevations range from 550 meters at the Lateral 1 pump station to elevations of 590 meters at the northern boundary of the service area.

The Smith Creek Plan Area rises to an elevation of 800m in the northwest quadrant, which will require 4 additional pressure zones. These pressure zones will be serviced via two Booster Pump Stations. The first is at the Smith Creek Reservoir (Elev. 630m) up to a new reservoir at the 735m elevation, which will service P2, 674m and 735m. The second Booster Station will be located at the 735 reservoir pumping to a future reservoir at the 835m elevation. These reservoirs will be sized to provide storage for domestic, fire flows plus 25% emergency storage. The Booster Station referred to as Lateral 1 (Shetler Drive) does not have the capacity to service the entire plan area. As water demands approach 75 L/s upgrades to the Lateral 1 booster station will be required, or this booster station will need to be decommissioned and a new booster station constructed at the corner of Harold Road and Elliot Road.



The internal Water Distribution System will be designed in accordance with the City of West Kelowna Works and Servicing Bylaw No., 0120.

Water – Future Infrastructure Works Figure 11.

3.6.2 Sanitary System

The lower Smith Creek area is fully serviced by gravity sewer and provides various connection points for the Smith Creek properties, which includes Smith Creek Road, Doucette Avenue and Ironridge Drive. These connection locations all flow to a 250mm dia. trunk main through rights of way to Broadview Road, Reece Road, then to the trunk main on Old Okanagan Highway (1st Ave N) and down to the treatment plant.

Based on the initial analysis of the existing collection system, there are two sections of the 250mm dia. main that may require improvements in the future. These sections are on Reece Road and Broadview Road, where the pipe grades are only 0.42% and 0.63%.

The collection system was modeled to reflect the projected flows from both the existing Smith Creek Area and future flows based on the estimated future number of units within the Smith Creek Plan Area, which identified the possible upsizing requirement

Sanitary Trunk Mains – Future Upgrades Figure 10.

3.6.3 Stormwater Management

In accordance with the Ministry of Environment's Best Management Practices (BMP) and City of West Kelowna's Stormwater Management General Conditions, Western Water Associates Ltd., consultants in Hydrology and Environmental Science were retained to update the preliminary report on groundwater and surface hydrology to assist in the development of an integrated Stormwater Management Plan (SMP).

The Western Water Report provides base line information on ground water and surface water hydrology and surface conditions within the Smith Creek Plan Area. The Study provides the basis for planning of the Smith Creek Neighbourhood and provides qualitative and quantitative data to aid in the development of the Stormwater Management Plan (SMP).

In high permeability areas the public road will provide for ground water recharge through a series of perforated piping and drywells. Infiltration systems can be installed in these high permeability areas to store and infiltrate the major storm events in order to achieve the stormwater management objectives.

The areas identified as low permeability will be piped to areas of moderate and high infiltration potential. The Western Water Report provides a table that summarizes percolation and infiltration rates for various areas within the Smith Creek Plan.

At the time of subdivision, Stormwater Management Plans will be developed utilizing the hydrology information from the Western Water Report or updated reporting as deemed necessary. In accordance with the recommendations in the appended documents, during



rezoning, information will be provided to determine the necessity of stormwater improvement. In addition, the report also provides an estimate of post-development peak discharge and runoff volumes associated with 5 and 100 year return period rainstorms of various durations.

With the hydrophobic conditions left by the burn area of the wildfire that occurred in 2014 an interim increase in runoff was created, however, this will not be used to overstate the pre-development conditions for design of storm infrastructure. Since the fire 5 years ago, the area has naturally revegetated itself and the hydrophobic conditions are no longer as significant.

The approach to stormwater management for the area under review is to maintain post development drainage courses in their natural locations prior to development. With this in mind, the table below identifies the ultimate discharge locations of the main sub-basins identified on Figure 15.

Subbasin	Ultimate Discharge Location	Discharge Via
A	Powers Creek	Direct Over Crown Land
B1	Powers Creek	Black Canyon Park
B2	Smith Creek	Storm Sewer at Summerview Court
C	Smith Creek	Storm Sewer at Doucette Drive
D1	Smith Creek	Direct Overland
D2	Smith Creek	Direct Overland
E	Smith Creek	Storm Sewer at Copper Ridge Drive

Stormwater Management Plan Figure 15.

3.6.4 Shallow Utilities

3.6.4.1 Natural Gas

Natural Gas in the proposed development area is serviced by Fortis Gas.

3.6.4.2 Hydro

Electricity in the *Smith Creek Concept Development Plan* area is supplied by B.C. Hydro.

3.6.4.3 Telephone

Both Telus and Shaw provide phone service in this area. Both are available and will be determined by the individual residential owners.

3.6.4.4 Cable/Internet

Currently this area is serviced by Shaw, however it is anticipated that in the near future Telus will have fibre optic television services available. As with telephone service, the provider will be determined by the individual property owner.



3.7 Wildfire Mitigation and Fire Protection

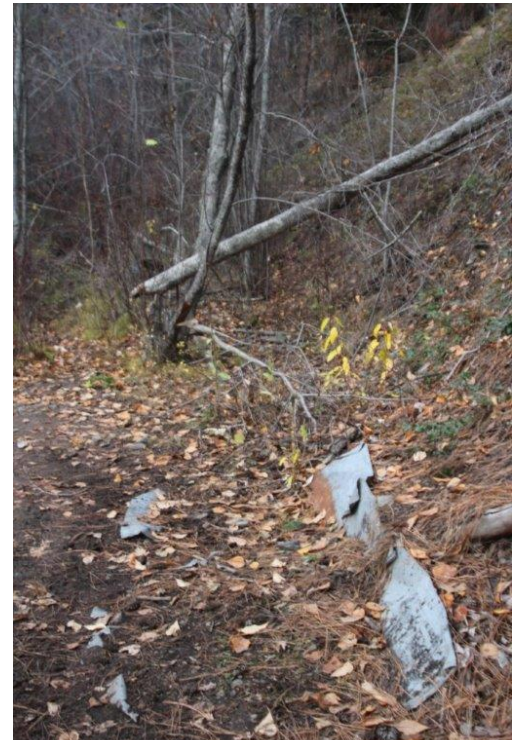
Under existing conditions, the risk of wildfire to the Smith Creek Property is considered high. Should a wildfire originate on, or immediately adjacent to the property in undeveloped forested land, there is a high probability that under the right conditions (dry, hot and windy) it could quickly grow in intensity and rate of spread.

As the property is proposed for residential development, the inherent risk of wildfire will be lowered by introducing roads, removing fuels, and adding landscaping. However, there will still be a risk to residences from adjacent lands and undeveloped portions of the property that remain forested.

Mitigative works focusing on fuel modification in remaining forested areas within and adjacent to proposed development on the property will lower the risk of wildfire moving from the forested landscape to adjacent residences. These works are not intended to remove all vegetation, but to focus on addressing the risk where it is the greatest, namely by reducing the density of the stand (the number of stems) where required and removing the ladder fuels. These works can be completed in a manner that leaves the treated areas in an aesthetically pleasing, and natural-looking condition while lowering the inherent risk of wildfire.

Due to the fact that the land owner(s) has little, if any, influence on how adjacent land owners address wildfire risk, the risk of wildfire to the property from adjacent properties can best be addressed by ensuring mitigation works are completed around new residences and infrastructure within the property.

Safe access/egress and a buffering will be dealt with specifically at the time of development. This can be achieved through good subdivision design and park placement and controlled by restrictive covenant.



Part 4 Development Policy

The natural extension of the existing valley and mountain setting of the area carries on through the *Smith Creek* plan area and allows for an easily identifiable natural setting only a few minutes from downtown Westbank Centre. The following general planning principles should be observed in the development of this area as per the City of West Kelowna Comprehensive Development Areas Objectives/Policies:

- Development of this area should be in strict conformance with hillside development standards to develop the lands in a safe manner, while minimizing visual impacts to the surrounding community.
- Development proposals must include safe emergency access/egress.
- Potential development must address potential servicing requirements including location of water storage, connectivity and access considerations.
- Development proposals should protect and enhance the historic flume trail located within the area.
- Network road connections to adjacent neighbouring parcels must be secured.
- Future management and access to Crown land should be addressed.
- Should zoning amendments be contemplated for the CD Area, density transfer and bonusing concepts may be explored where it is in City's interest to achieve community goals through such things as the protection of environmentally sensitive areas and the provision of community amenities.

4.1 Land Use Policies

The overall objective of the Smith Creek CDP is to implement and adhere to the policies of the West Kelowna Official Community Plan. The overall goals and objectives of a Neighborhood Plan are to ensure for the orderly and timely provision of services and amenities to complement the evolution of a neighborhood that respects professional planning, landscape and engineering principles as well as City of West Kelowna policies as primarily expressed through the Official Community Plan, in this instance Bylaw 0100.

- Maintain and enhance the character and livability of existing neighbourhoods.
- Increase housing choice and neighbourhood amenities in a manner that complements existing neighbourhood character.
- Ensure parks and open space form an integral component of the land base in neighbourhoods.
- Single family housing will be built in siting clusters where appropriate to allow for protection of environmentally sensitive features, steep slopes and other hazard lands, and provide for natural open spaces within Neighbourhoods.
- Consider locating Neighborhood Centres along an arterial or collector road served by transit.
- Encourage development within Neighborhood Centres to utilize innovative, high quality design that integrates with and enhances the existing neighborhood character.



- The size of the proposed mixed-use component may be limited due to servicing constraints
- The identified archaeological site of significance (D1Qv79) will not be disturbed or impacted.

4.2 Environment Policies

While the environmental assessment identifies sensitive features and protection of some, the development is still carefully designed to minimize disruption of the land as a whole.

- Environmentally Sensitive Areas as identified will be protected in accordance with the recommendations included within the appended documents and any disturbance will be evaluated under the guidance of a Qualified Environmental Professional
- All ESA 1 areas shall remain free of development unless otherwise approved by a Qualified Environmental Professional and the City of West Kelowna. Specific consideration will be made for crossings associated with collector road alignments.
- Disturbed ESA areas shall be remediated per recommendations in the Environmental report and the City of West Kelowna
- Road crossings of Smith Creek will need to be assessed on an individual basis and restricted within this plan area to;
 - a maximum of two crossings; and
 - be designed to not impact hydrological functions and wildlife movement
- Smith Creek will be incorporated into a minimum 100 meter corridor
- Additional field surveys for proposed development areas during the appropriate field season will be required to determine the potential impact (probability of impact) of the development on the listed species at risk that may occur on site.

4.3 Parks, Trails and Open Space Policies

The open space system in the *Smith Creek CDP* area will enhance the existing trail network in the area and provide opportunities where not currently existing to adjacent neighborhoods beyond the CDP boundary. The development allocates approximately 21 ha (51.9 acres) of open space and dedicates approximately 5.4 ha (13.3 acres) of new park area.

- Respect the Goals of the Parks Master Plan 2010, specifically, protection of the environment, connecting the community and leaving a legacy for the future.
- Protect steep slopes where feasible.
- Actively promote walking trails to interconnect neighborhoods, thus lessening demands for street sidewalks on all but collector roadways.
- Minimize building footprints, driveways and extensive landscaping in order to creatively integrate hillside single family housing on sloped conditions.
- Best practices to mitigate the visual impact of the development will be incorporated into subdivision design.



- Maximize the amount of open space as a passive and visual amenity to contrast the built environment.
- Include geotechnical review for proposed trails at rezoning
- BC Hydro right of way will not be considered as parkland for the purposed of achieving 5% parkland dedication.
- Flume Trail crossings shall be limited to maintain the primary goal of enhancing this historic feature.
- Remnant land will be reviewed at rezoning.
- Consideration for a neighborhood park space may be made as part of the ongoing development of the CDP area.
- Future considerations will be made for potential off-site improvements on the lands directly west of the CDP area for Crown land trails.

4.4 Wildfire Mitigation and Fire Protection Policies

In order to reduce existing fire hazard indices on the areas where trees and forest will be retained, such as non-development clearing areas, the following policies should be adhered to:

- Through recommendations made by a professional arborist and Qualified Environmental Professional reduce the wildfire hazard rating to low with consideration for ongoing maintenance.
- Development will include implementation of Fire Smart principals.
- Construction should utilize fire safe building materials.
- Registration of a s.219 covenant outlining landscape and construction restrictions
- All accesses will be in compliance with the NFPA 1131 requirements.
- Wildfire buffering will be completed at each development phase where required to protect adjacent Crown Lands in accordance with wildfire reviews done at time of writing and future professional reviews completed at rezoning.

4.5 Transportation Policies

- Design the road networks based on the preliminary function of the roads, with local roads used as site access
- Major volume routes shall continue through the intersections so minor road approaches are two-way stop controlled.
- The Asquith Road Connection will be reviewed in conjunction with other arterial road connections and may be considered as part of the broader transportation network influenced by the development of the CDP area.
- Consideration will be made for Arterial Road standard relaxations for Smith Creek Road.
- Directional signage to identify trails and linkages should be installed.
- Cycle paths shall be provided in accordance with the collector road standard.
- The design of internal road network shall accommodate future storm water management facilities.
- Development of appropriate roadway circulation should create opportunities for “transit friendly” development.



- Additional traffic review will be completed at time of rezoning which will include, but not be limited to intersection design, turn warrants, etc. Specific consideration will be made for the Old Okanagan Highway and Reece Road intersection.
- Construction of the Tallus Ridge Drive extension to the east will be triggered once Smith Creek has developed to 600 units unless otherwise warranted based on existing conditions and input from professional reporting. The Tallus Ridge Drive connection will be advanced when and if deemed necessary by Council.
- Accesses will be in accordance with NFPA access standards. This will include two accesses for up to 100 units and three for over 600 units.
- All roads will be designed and constructed in accordance with the City of West Kelowna's Works and Services Bylaw.
- Required infrastructure and other costs related to the impacts of the development of the CDP area will be paid for by development in order to eliminate future costs to the taxpayer.
- The construction of Smith Creek Road as identified as a DCC project may be required to be constructed by the developer as directed by Council.
- Interim road improvements to address specific issues or areas of concern identified through future rezoning processes may be required (e.g., light standards, asphalt apron, etc)
- As part of the ongoing development of the Smith Creek CDP, the current and future transportation objectives of the City of West Kelowna will be incorporated into the transportation works within the CDP area and the broader area influenced by the development of the CDP.

4.6 Servicing and Shallow Utility Policies

- All development will connect to a water distribution system, and a wastewater collection system.
- As part of the expansion of the water distribution system, the Shetler Drive Pump Station and Bridlehill Drive Pump Station will be decommissioned and replacement of a new booster station at Harold Road will be pursued. Cost sharing may be explored once the City better understands the benefits to existing users.
- Sanitary servicing improvements to Broadview Road and Reece Road will be evaluated as the population of the catchment area reaches 3,500 people.
- Required sanitary infrastructure improvements will include replacement of piping, not twinning.
- At time of rezoning, the downstream receiving areas will be reviewed to ensure that existing routes are safe and stable, particularly considering the increased duration of the runoff and impacts from the new development areas.
- Drainage and stormwater management infrastructure shall be designed in accordance with the Works and Services Bylaw and mitigate the downstream impacts to existing infrastructure.
- Stormwater management infrastructure will mitigate water quality impacts to Smith Creek through urban runoff and contaminants.
- Private Statutory Rights of Way required to facilitate proposed stormwater discharge will be secured at rezoning.



- Design of any services and utility corridors should utilize environmentally responsible practices.
- All utilities and services to be installed in compliance with the Works and Services Bylaw.
- Ensure all elements of the servicing design will enable efficient delivery of services to adjacent lands that will be developed in future.
- Required infrastructure and other costs related to the impacts of the development of the CDP area will be paid for by development in order to eliminate future costs to the taxpayer.



Part 5 Implementation

The Smith Creek CDP establishes a framework for land use, parks and open space areas, transportation, infrastructure servicing strategies, environment and ecology. The intent of this plan is to allow landowners, the City and public to build on this process and proceed with the next steps in order for development to occur on this site. These next steps will permit the City of West Kelowna, other government and servicing agencies and the public to provide further input.

5.1 Official Community Plan

The Official Community Plan will require amendment in order to reflect the guidelines and recommendations of this Concept Development Plan. The plan will, along with other policies and bylaws, be important input to any changes to be made to bylaws and any future decisions in the area.

5.2 Rezoning and Development Permits

Applications for rezoning and development permits will be required in order for development to occur. Some areas can be regulated through the use of existing zones in the *City of West Kelowna Zoning Bylaw No. 0154*, and in other areas it may be more appropriate to use a site-specific comprehensive development zone that will ensure that the proposed development conforms to the policies and guidelines of this document.

While every attempt will be made to zone land in strict accordance with the land uses proposed in this document, legal surveying and site reconnaissance completed at the time of the rezoning application may justify minor refinements to the OCP boundaries presented. At the time of rezoning, staff will determine if the revision is within general accordance and meets the intention of the approved plan and if not, may require an OCP amendment alongside the rezoning application.

The *Local Government Act (LGA)* grants authority to municipalities to designate Development Permit Areas. The City of West Kelowna has included seven Development Permit areas in the Official Community Plan Bylaw 0100.

The *Smith Creek CDP* area has several Development Permit areas identified on the lands shown on Schedules 4 and 5 of the City of West Kelowna Official Community Plan:

- Hillside
- Wildfire Interface
- Sensitive Aquatic and Terrestrial



Accordingly development within the *Smith Creek CDP* will be subject to Development Permits. The development within these lands will be carried out in compliance with the applicable Development Permit guidelines.

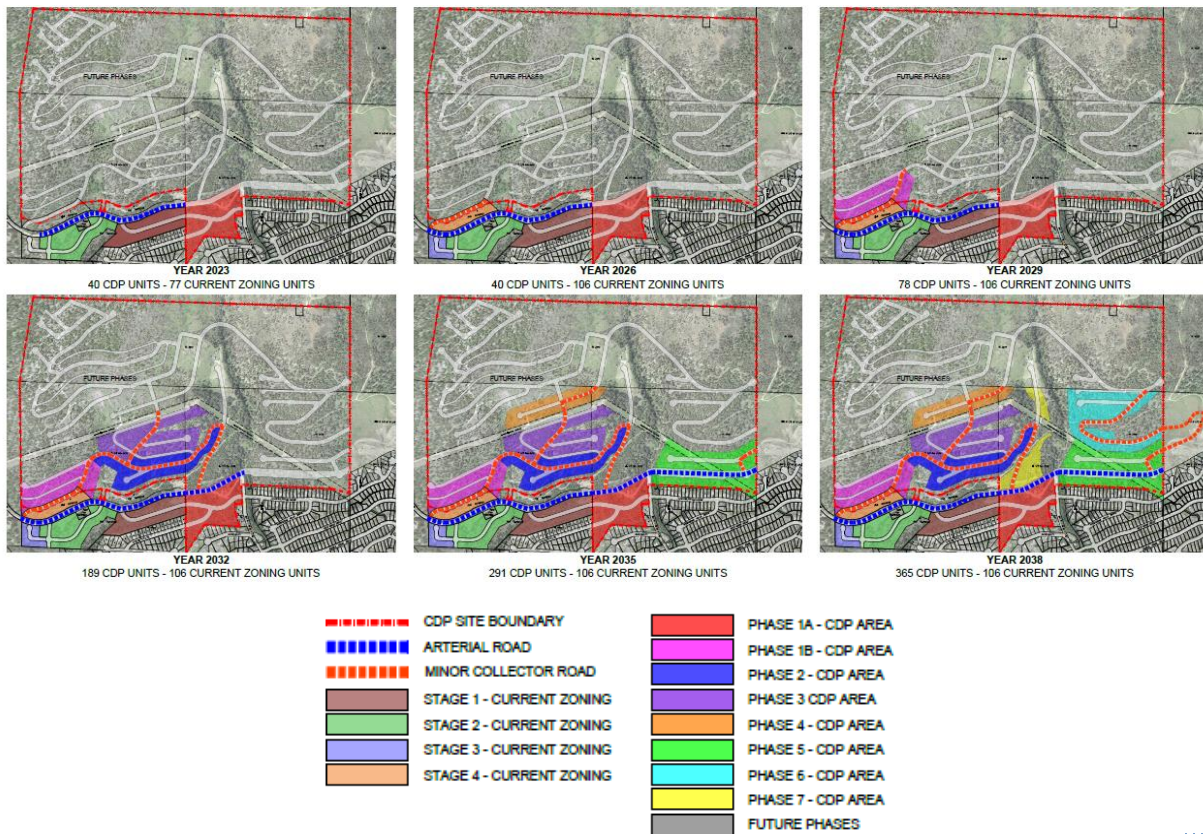


5.3 Subdivision

Subdivision applications will be required as the developers proceed to implement the development plans. The subdivision process will allow the City and other affected agencies the opportunity to review specific technical submissions to ensure they meet applicable requirements related to servicing, access and other considerations.

5.4 Phasing

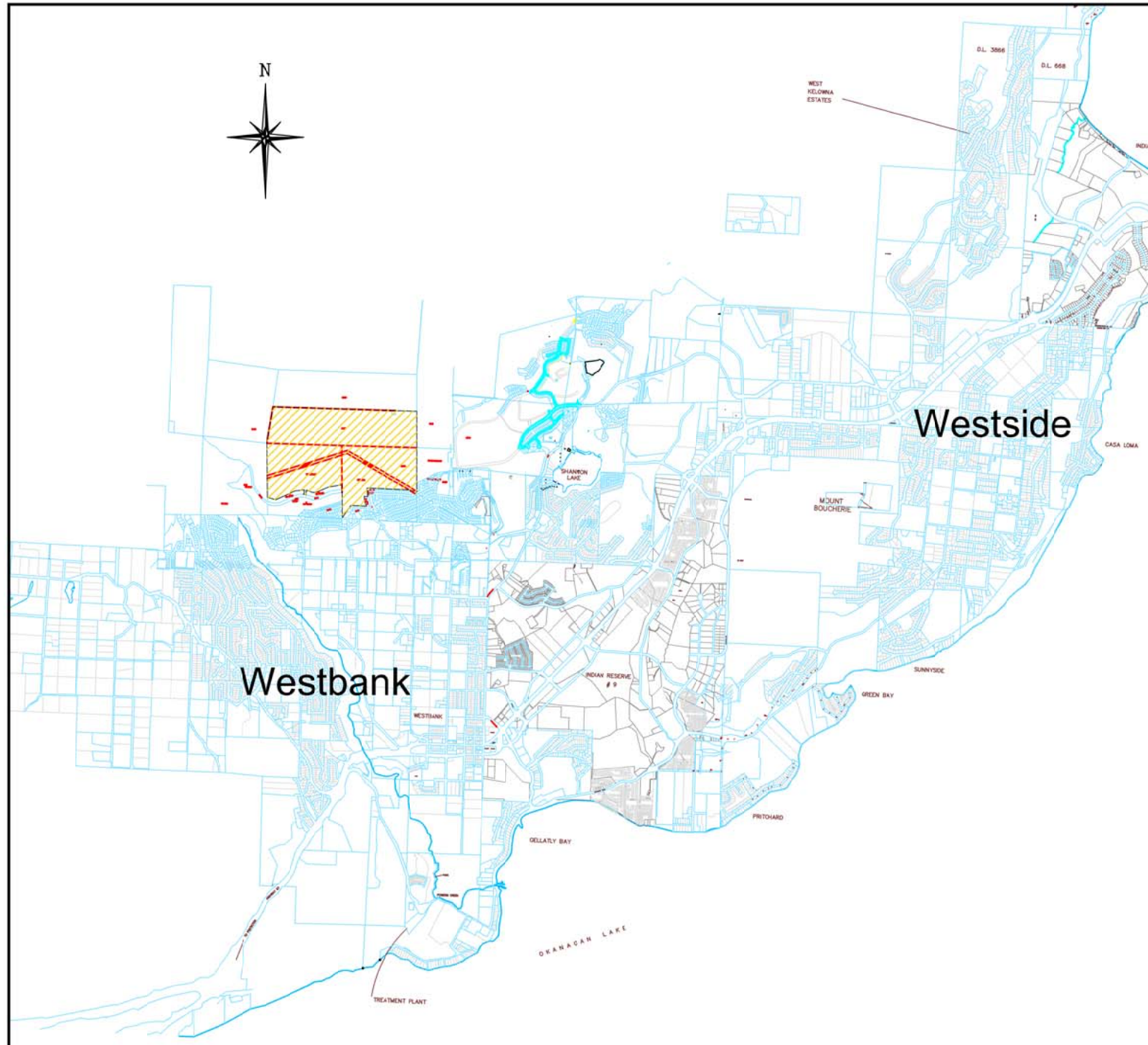
Phase IA is planned in the southern most location of the plan area and consists of 38 units. Phase IB to follow is located in the southwest corner of the plan and also consists of 38 units. A detailed phasing plan can be found in Figure 14 with all remaining phases shown. All phasing has been determined through mindful expansion of servicing and infrastructure.



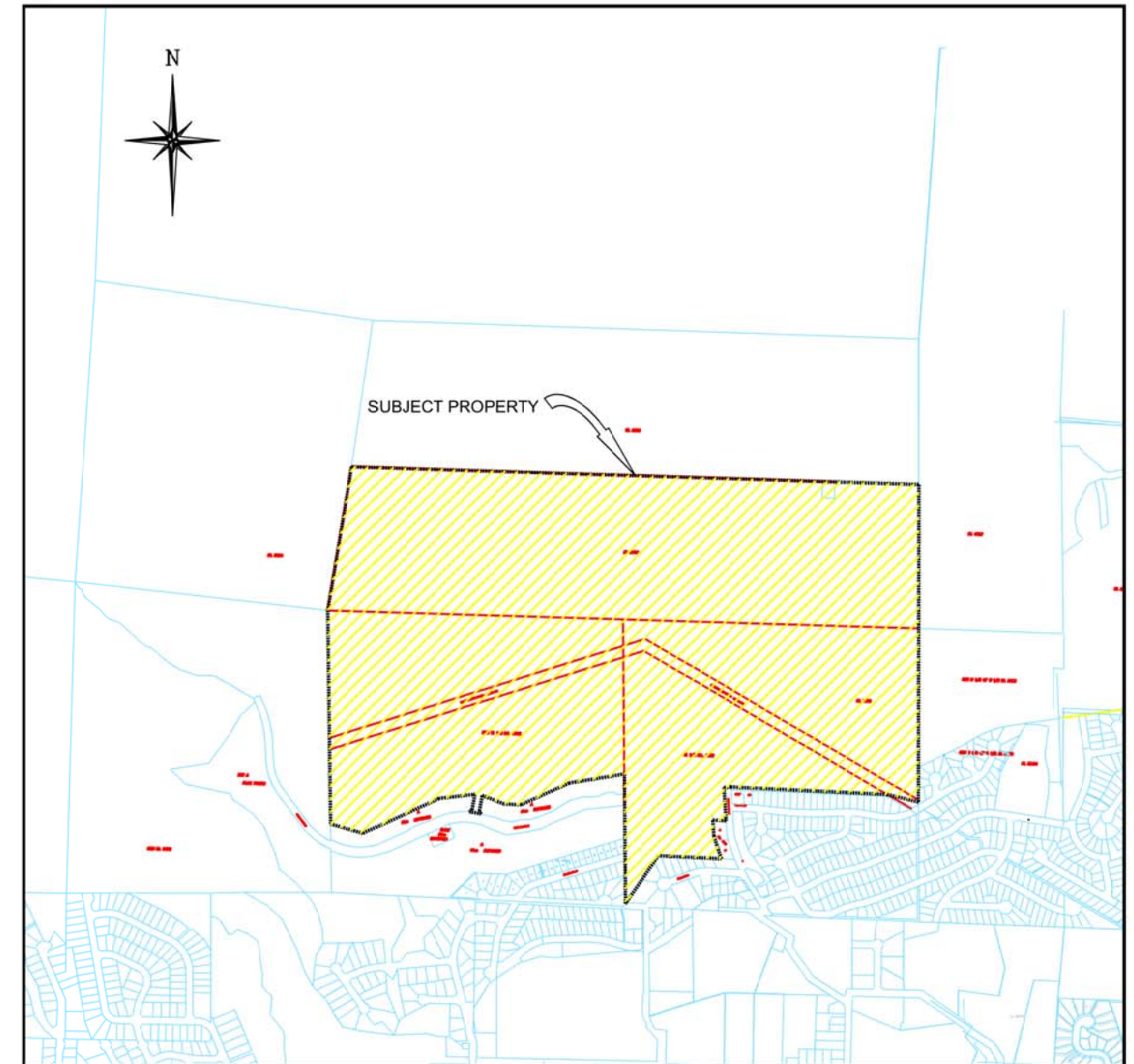
5.5 Construction Management

Preliminary Construction Management plans will be required as the developers proceed with rezoning each phase in efforts to give the public and council opportunity to provide input. Construction Management Plans will show at a minimum planned construction traffic routes, construction access locations, temporary construction works, extents of grading/blasting work for each phase, and impacts to adjacent residents. Where financially and technically possible, efforts will be made by the developer to carry out grading/earthworks for future adjacent phases as to limit the disturbance in the future on each phase being currently developed.





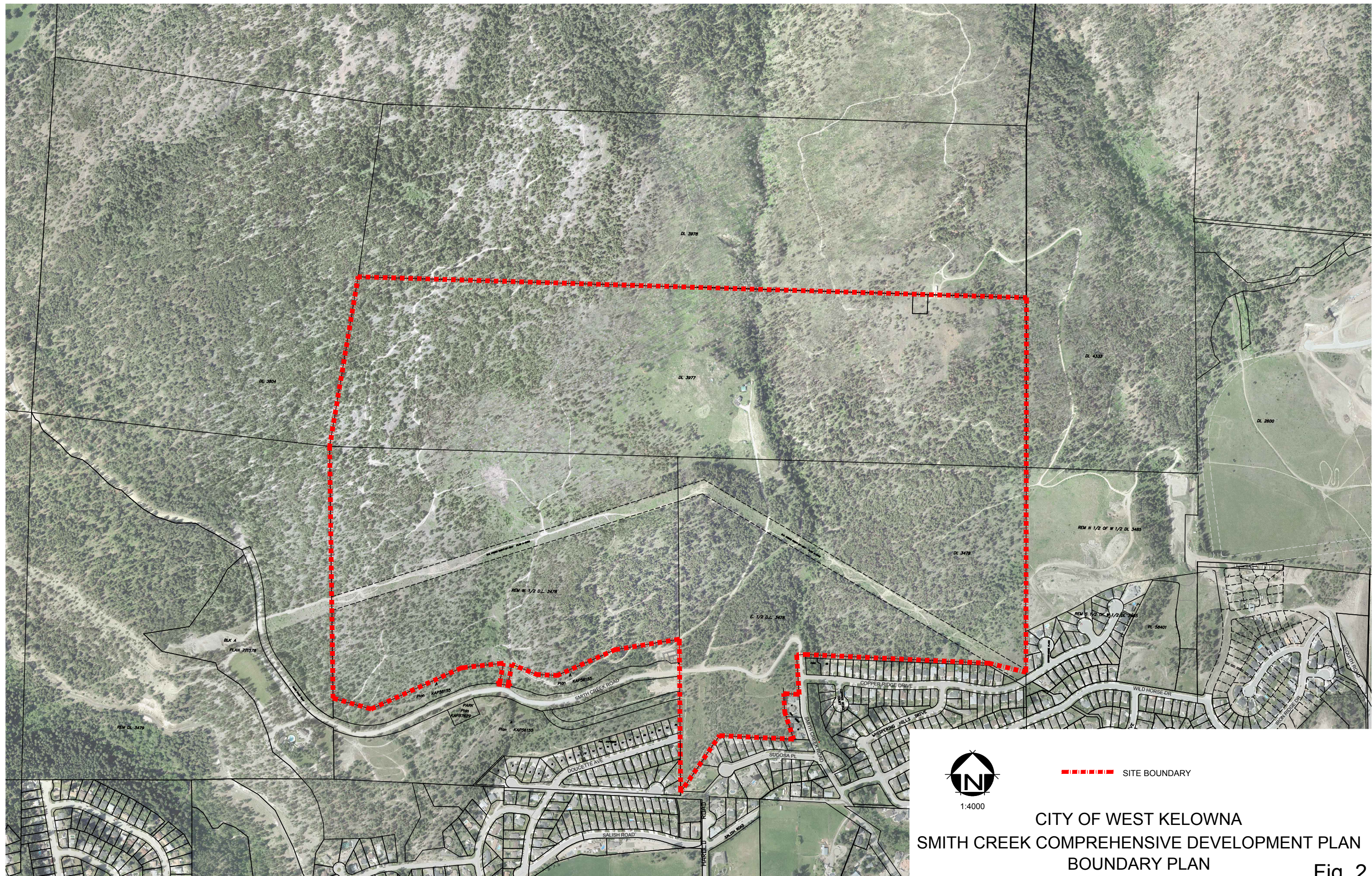
LOCATION PLAN
1:30,000



AREA DETAIL PLAN
nts

CITY OF WEST KELLOWNA
SMITH CREEK COMPREHENSIVE DEVELOPMENT PLAN
LOCATION AND CONTEXT PLAN

Fig. 1

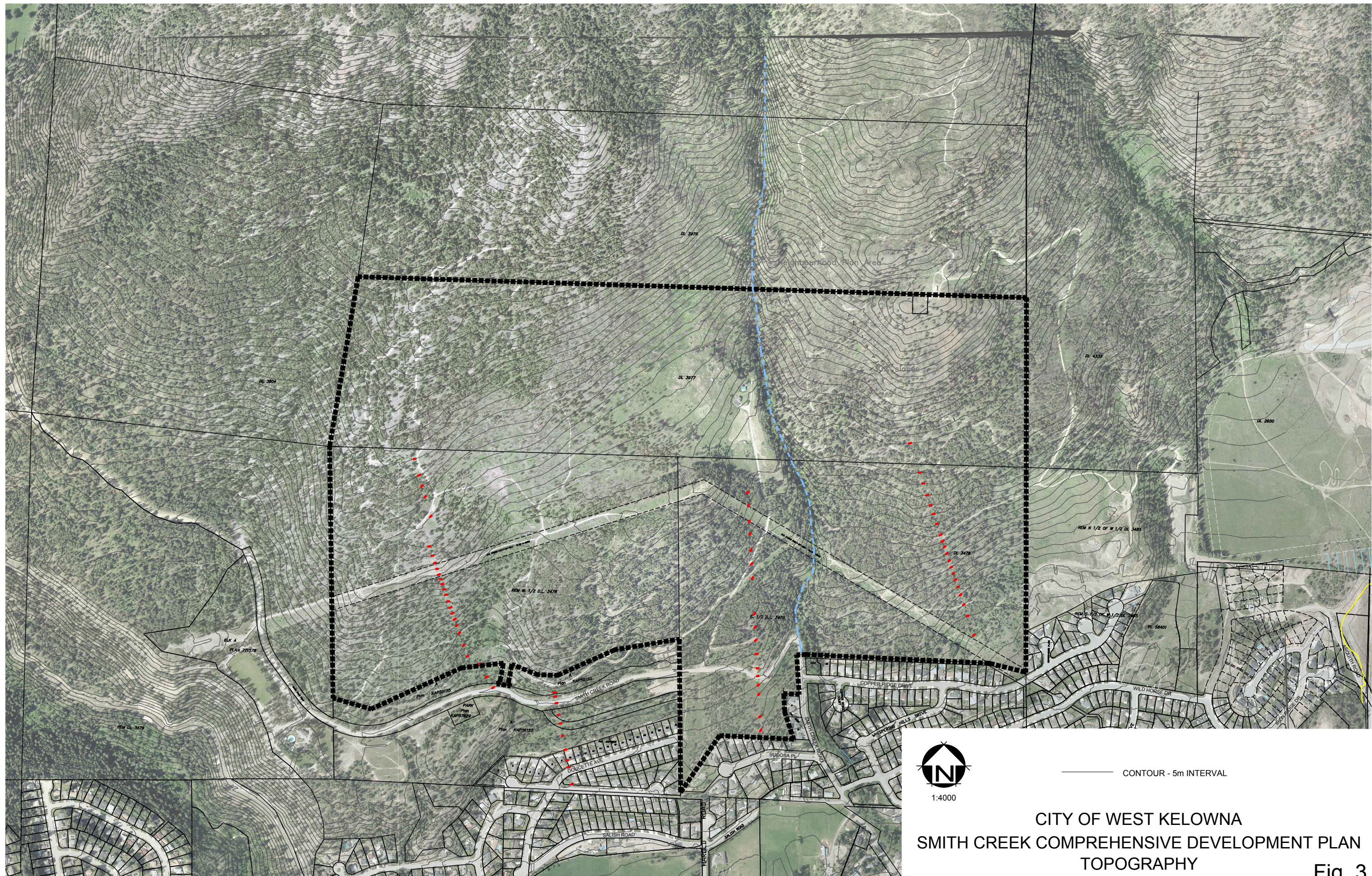


1:4000

■■■■■ SITE BOUNDARY

CITY OF WEST KELOWNA
 SMITH CREEK COMPREHENSIVE DEVELOPMENT PLAN
 BOUNDARY PLAN

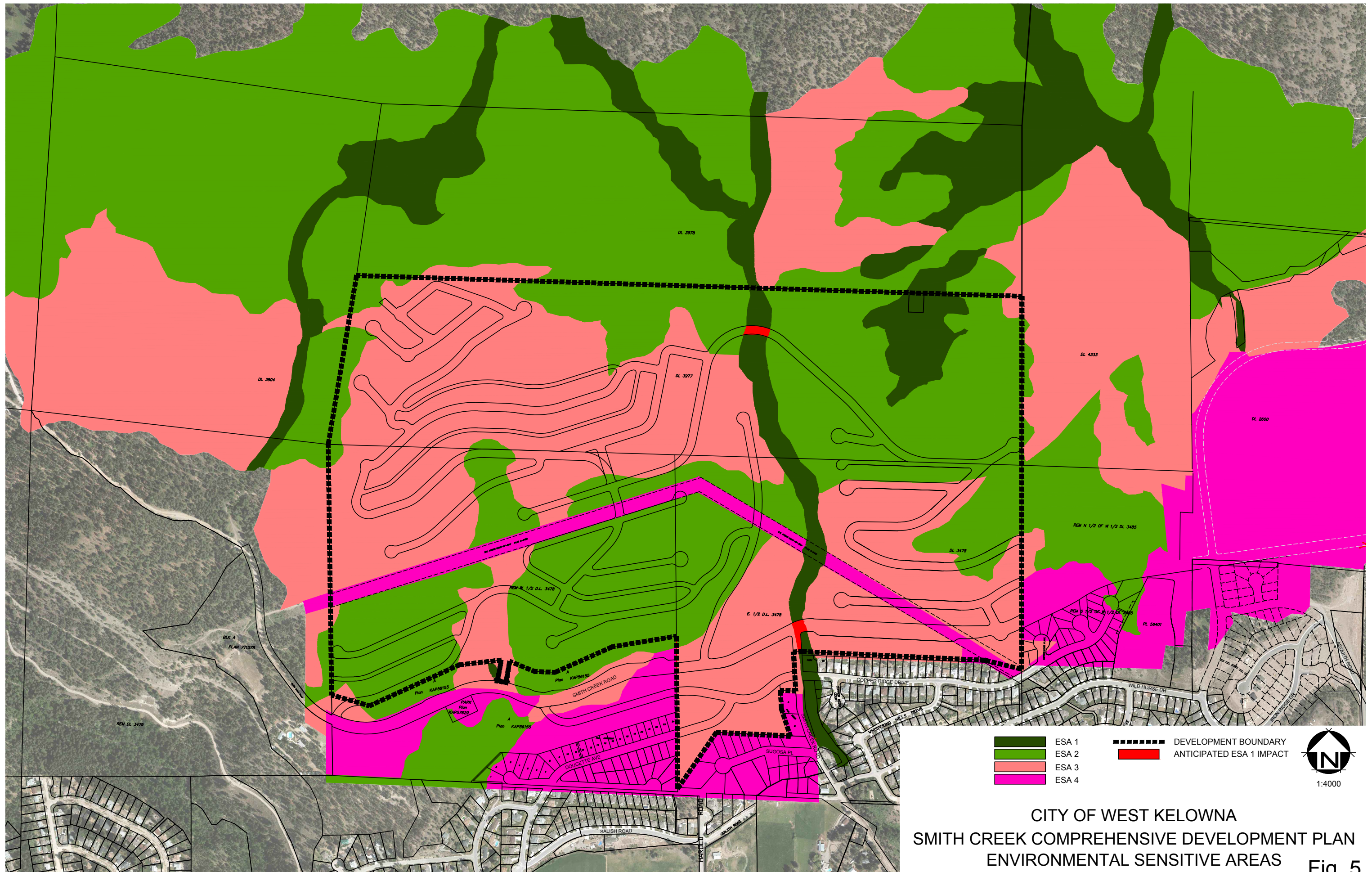
Fig. 2



CONTOUR - 5m INTERVAL

CITY OF WEST KELOWNA
 SMITH CREEK COMPREHENSIVE DEVELOPMENT PLAN
 TOPOGRAPHY

Fig. 3



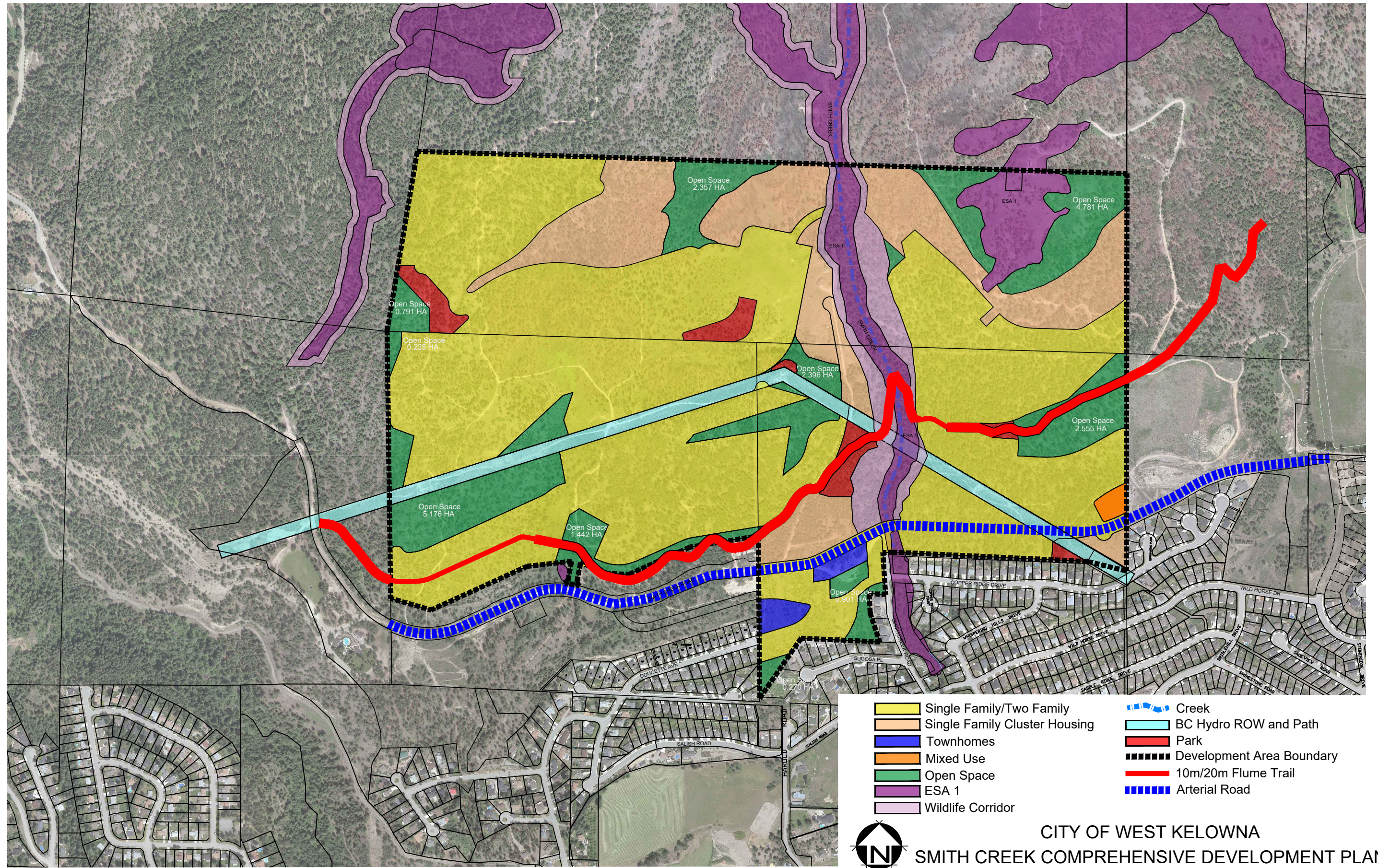
- ESA 1
- ESA 2
- ESA 3
- ESA 4
- DEVELOPMENT BOUNDARY
- ANTICIPATED ESA 1 IMPACT



1:4000

CITY OF WEST KELOWNA
 SMITH CREEK COMPREHENSIVE DEVELOPMENT PLAN
 ENVIRONMENTAL SENSITIVE AREAS

Fig. 5



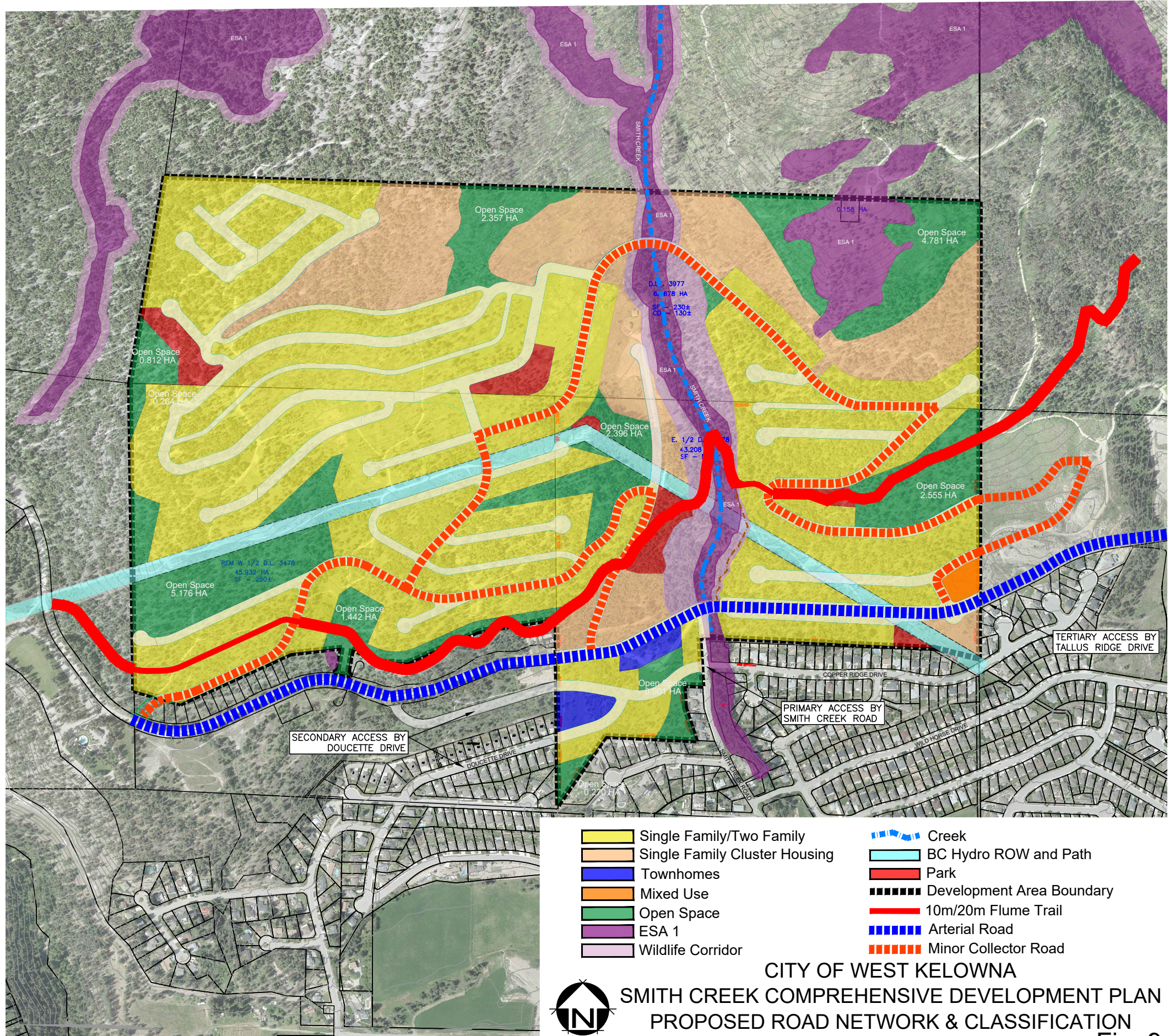
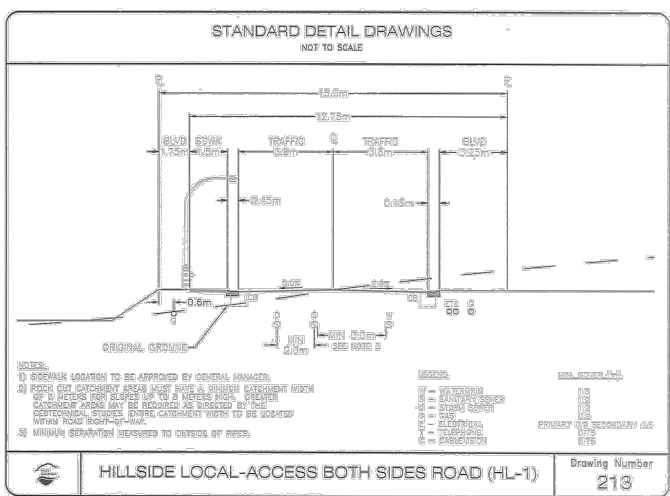
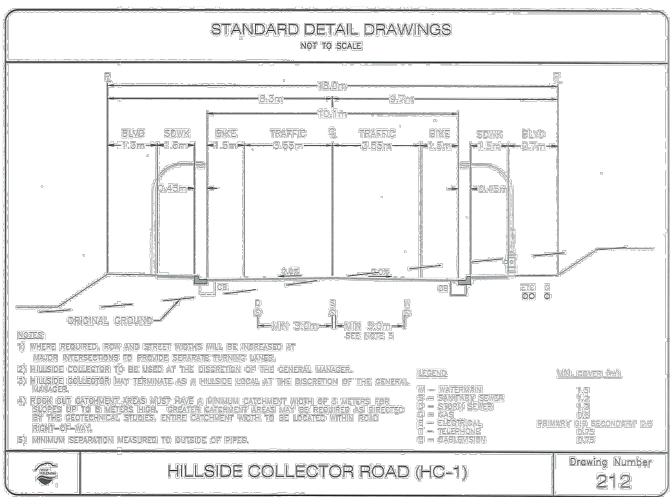
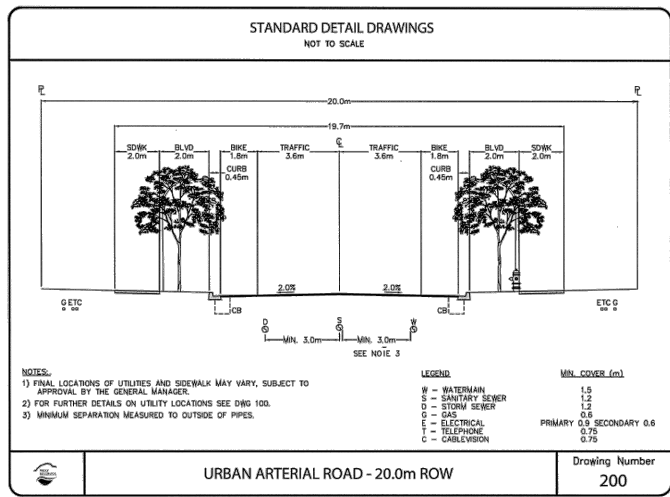
- | | |
|-------------------------------|---------------------------|
| Single Family/Two Family | Creek |
| Single Family Cluster Housing | BC Hydro ROW and Path |
| Townhomes | Park |
| Mixed Use | Development Area Boundary |
| Open Space | 10m/20m Flume Trail |
| ESA 1 | Arterial Road |
| Wildlife Corridor | |



1:4000

CITY OF WEST KELOWNA
 SMITH CREEK COMPREHENSIVE DEVELOPMENT PLAN
 PROPOSED LAND USE PLAN

Fig. 6

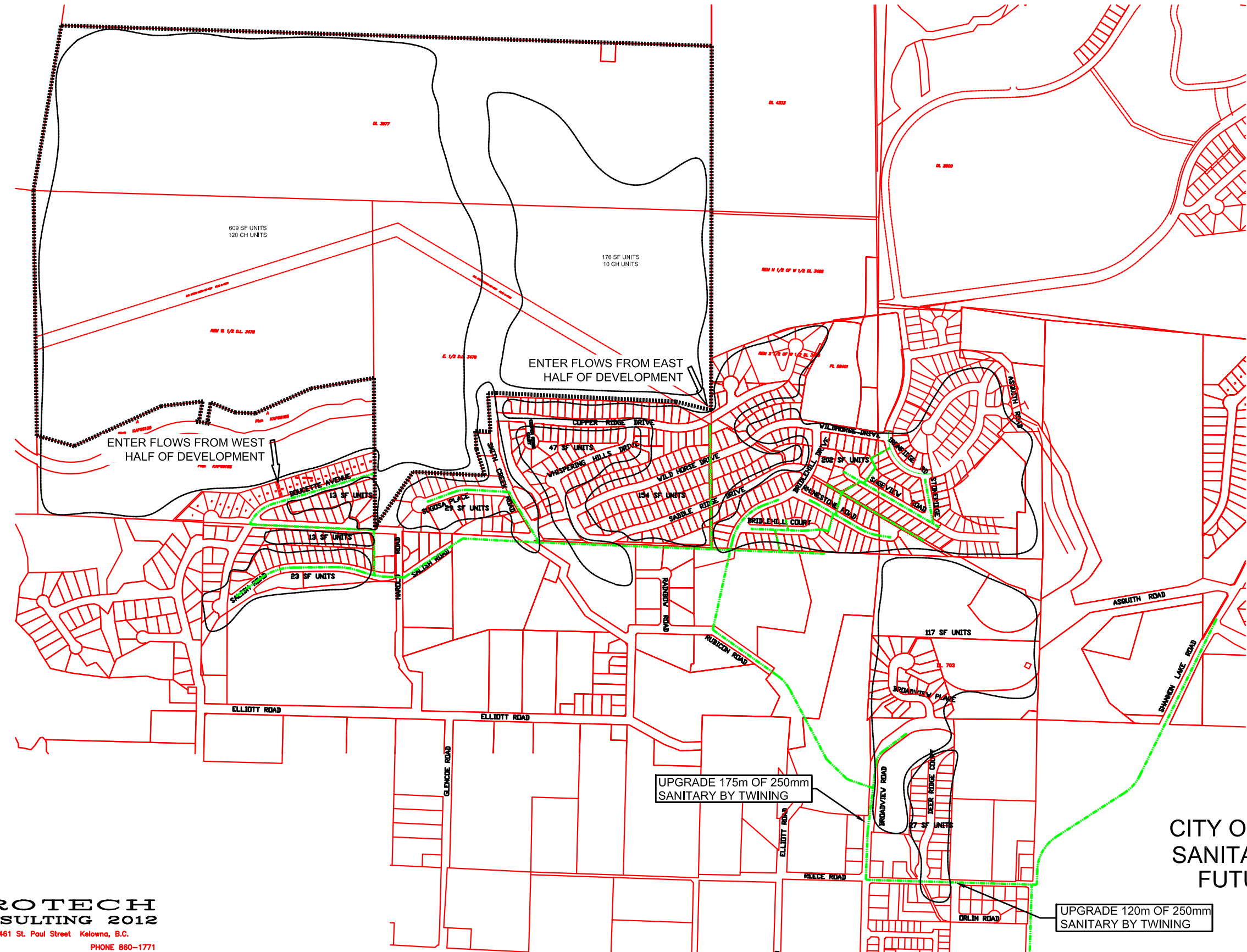


P:\PROJECTS\06X\06X SMITH CREEK\KIM'S MAPS\06X-0685-RDS.DWG





1:10,000



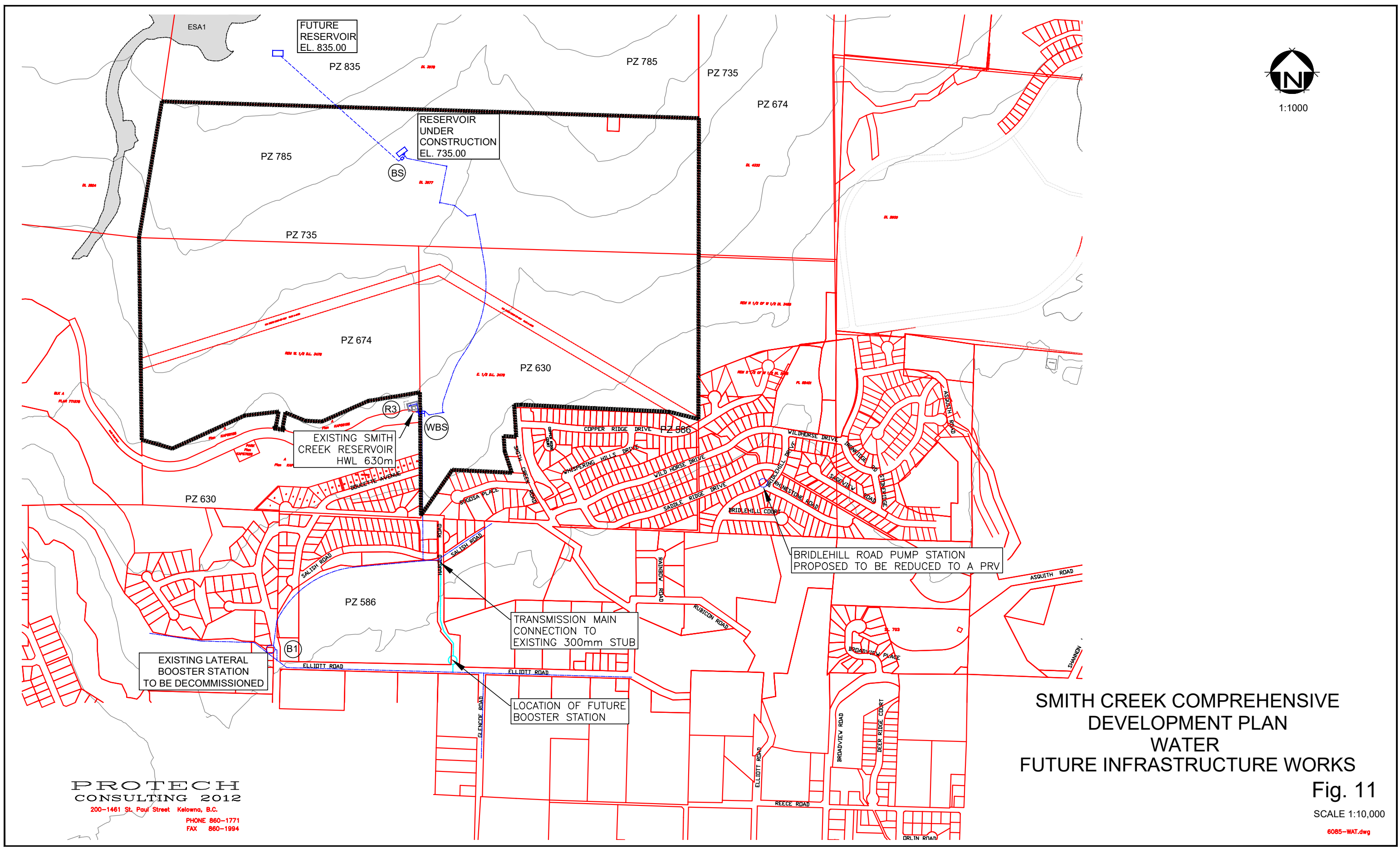
PROTECH CONSULTING 2012
 200-1461 St. Paul Street Kelowna, B.C.
 PHONE 860-1771
 FAX 860-1994

**CITY OF WEST KELOWNA
 SANITARY TRUNK MAINS
 FUTURE UPGRADES**

Fig. 10
 SCALE 1:10,000
 6085-SAN.dwg



1:1000



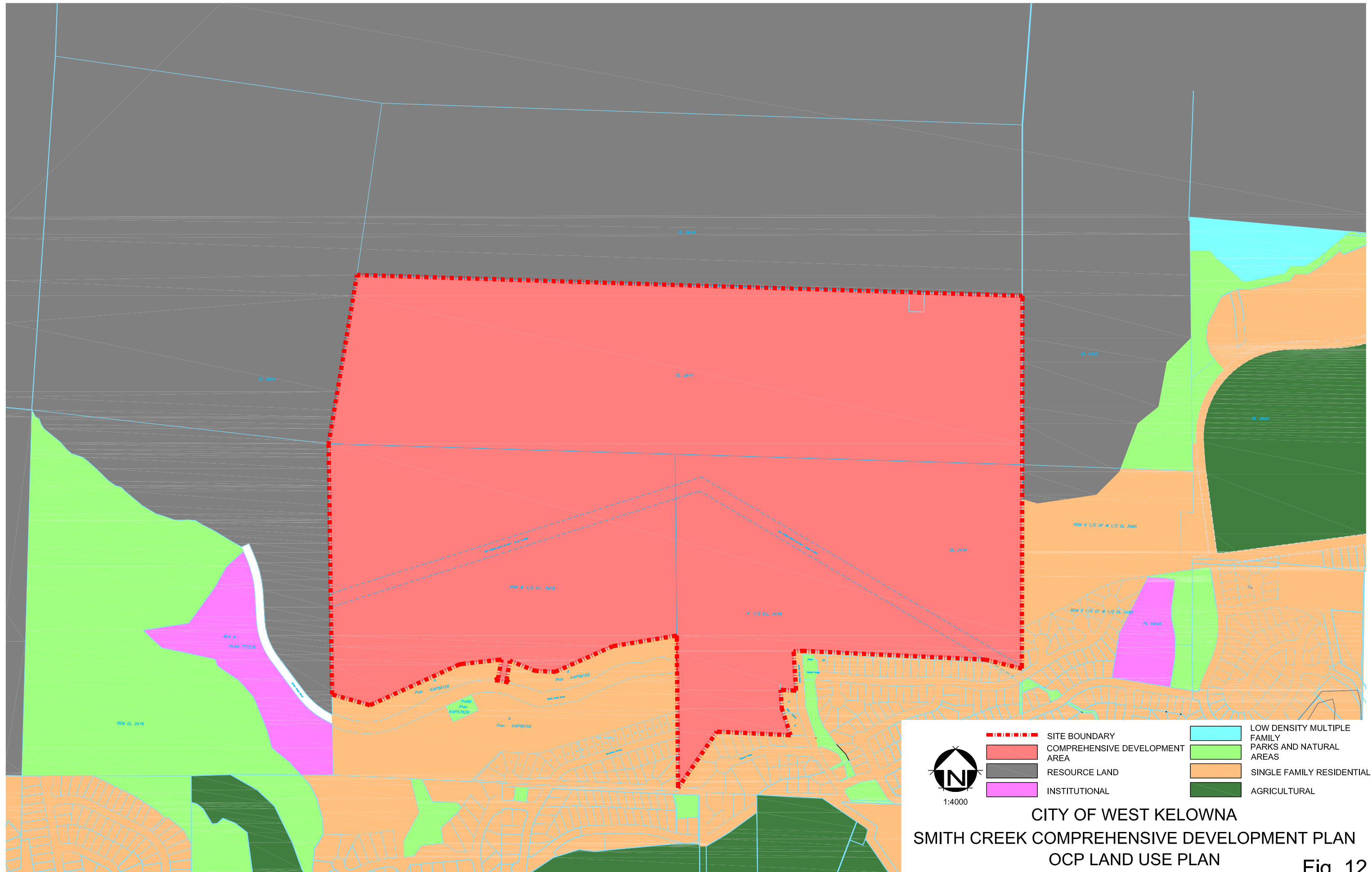
SMITH CREEK COMPREHENSIVE
DEVELOPMENT PLAN
WATER
FUTURE INFRASTRUCTURE WORKS

Fig. 11

SCALE 1:10,000

6085-WAT.dwg

PROTECH
CONSULTING 2012
200-1481 St. Paul Street Kelowna, B.C.
PHONE 860-1771
FAX 860-1994



- | | | | | |
|--|--|--------------------------------|--|---|
| | | SITE BOUNDARY | | LOW DENSITY MULTIPLE FAMILY PARKS AND NATURAL AREAS |
| | | COMPREHENSIVE DEVELOPMENT AREA | | PARKS AND NATURAL AREAS |
| | | RESOURCE LAND | | SINGLE FAMILY RESIDENTIAL |
| | | INSTITUTIONAL | | AGRICULTURAL |

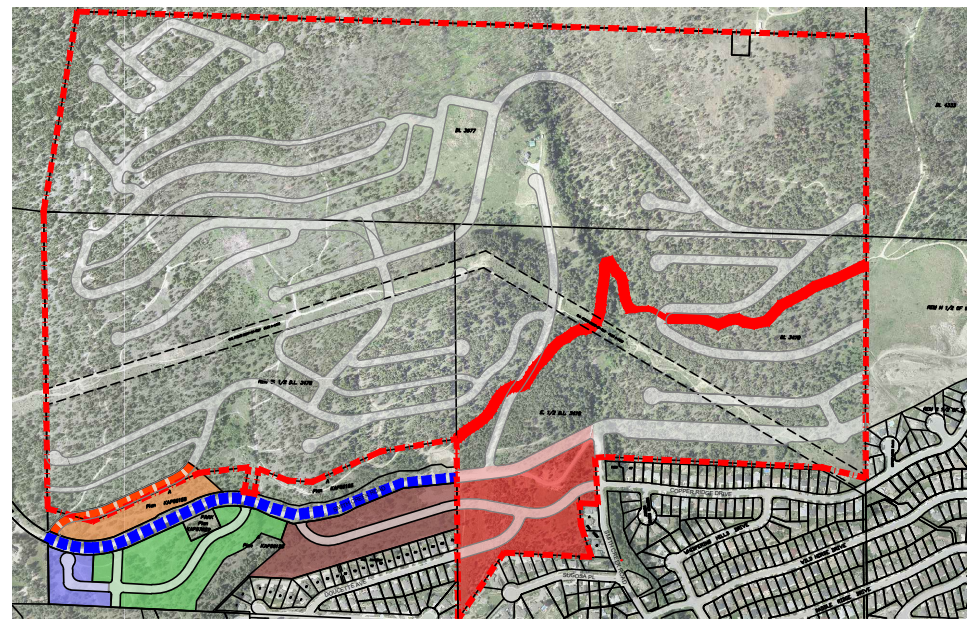
1:4000

CITY OF WEST KELOWNA
SMITH CREEK COMPREHENSIVE DEVELOPMENT PLAN
OCP LAND USE PLAN

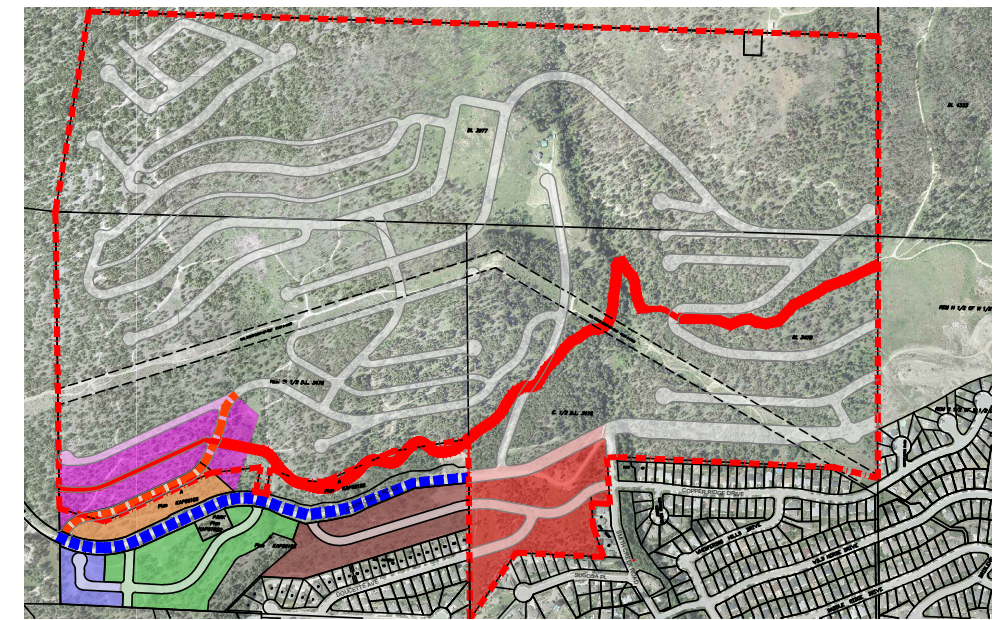
Fig. 12



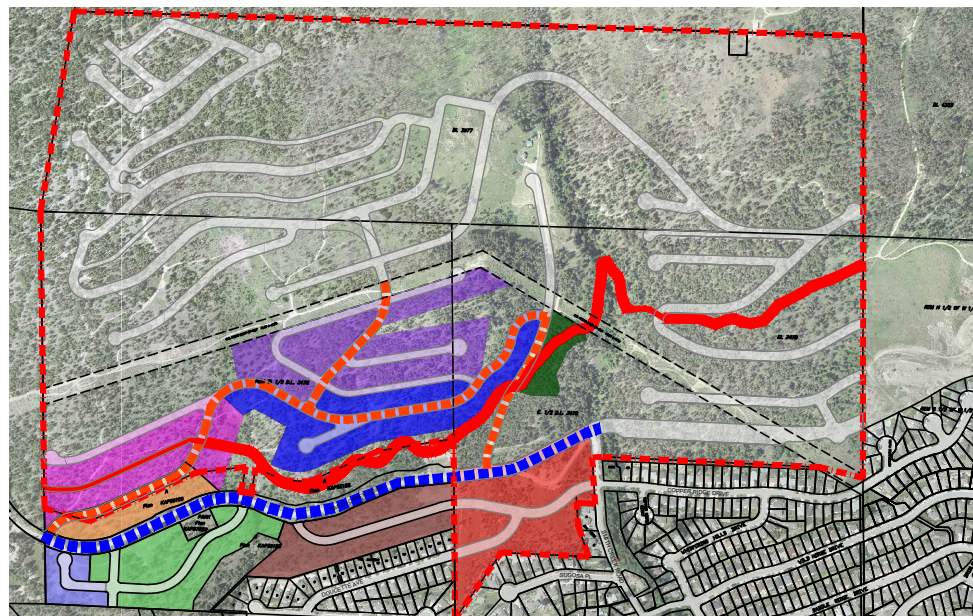
YEAR 2023
40 CDP UNITS - 77 CURRENT ZONING UNITS



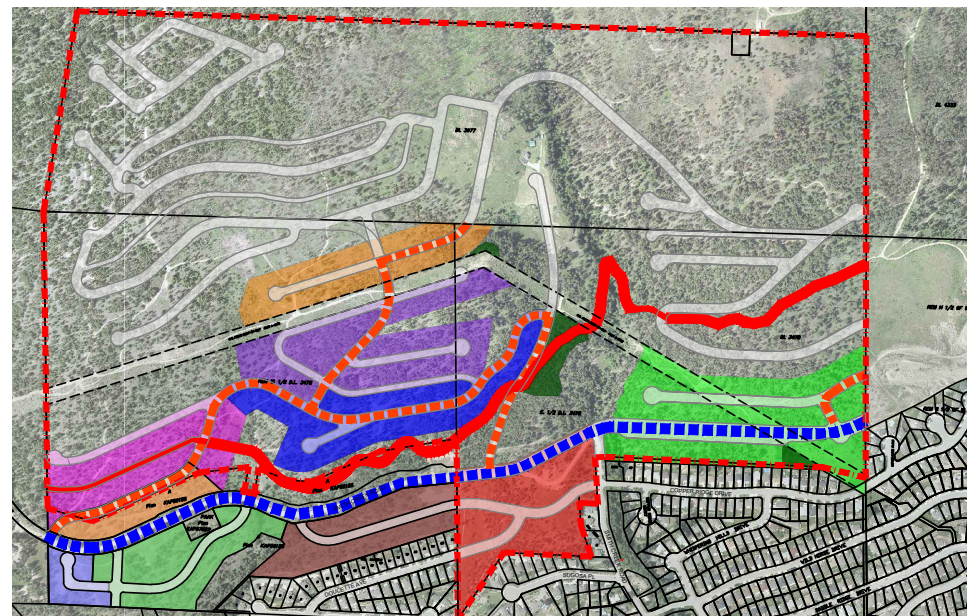
YEAR 2026
40 CDP UNITS - 106 CURRENT ZONING UNITS



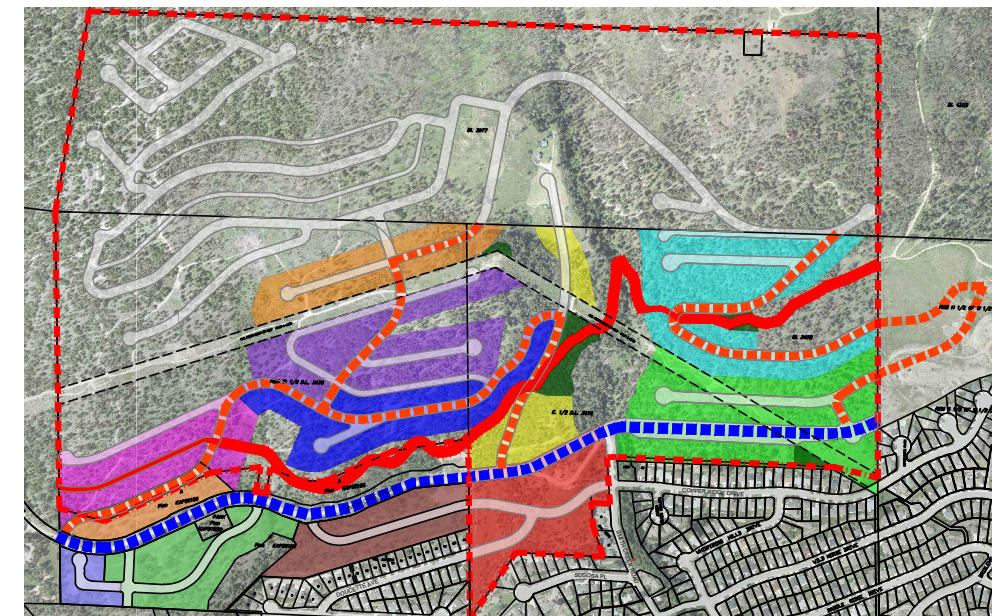
YEAR 2029
78 CDP UNITS - 106 CURRENT ZONING UNITS



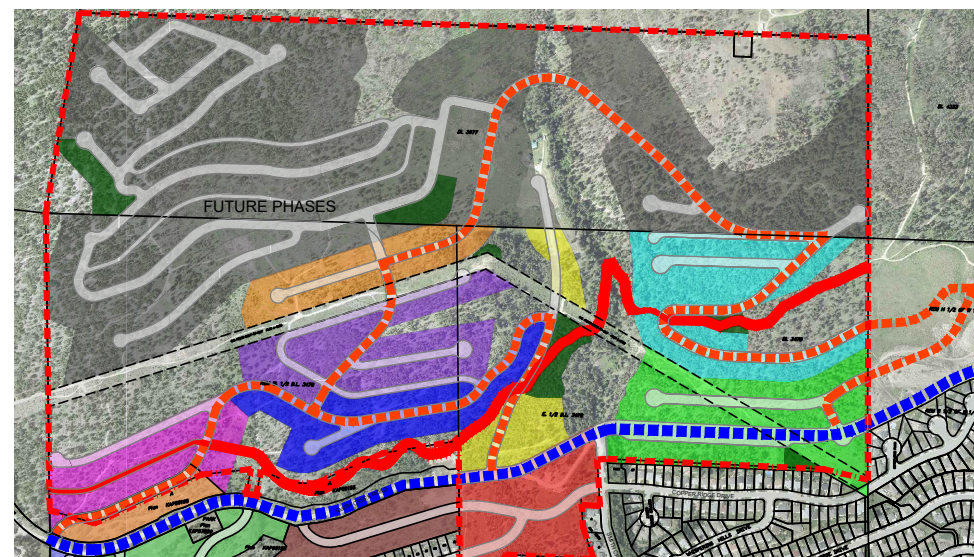
YEAR 2032
189 CDP UNITS - 106 CURRENT ZONING UNITS



YEAR 2035
291 CDP UNITS - 106 CURRENT ZONING UNITS



YEAR 2038
365 CDP UNITS - 106 CURRENT ZONING UNITS



YEAR 2040 +
905 CDP UNITS - 106 CURRENT ZONING UNITS

- CDP SITE BOUNDARY
- ARTERIAL ROAD
- MINOR COLLECTOR ROAD
- 10m/20m FLUME TRAIL*
- STAGE 1 - CURRENT ZONING
- STAGE 2 - CURRENT ZONING
- STAGE 3 - CURRENT ZONING
- STAGE 4 - CURRENT ZONING
- PARK
- PHASE 1A - CDP AREA
- PHASE 1B - CDP AREA
- PHASE 2 - CDP AREA
- PHASE 3 - CDP AREA
- PHASE 4 - CDP AREA
- PHASE 5 - CDP AREA
- PHASE 6 - CDP AREA
- PHASE 7 - CDP AREA
- FUTURE PHASES

* SPECIFIC TIMING FOR THE DEDICATION OF THE FLUME TRAIL WILL BE REFINED AND DETERMINED THROUGH FUTURE REZONING APPLICATIONS

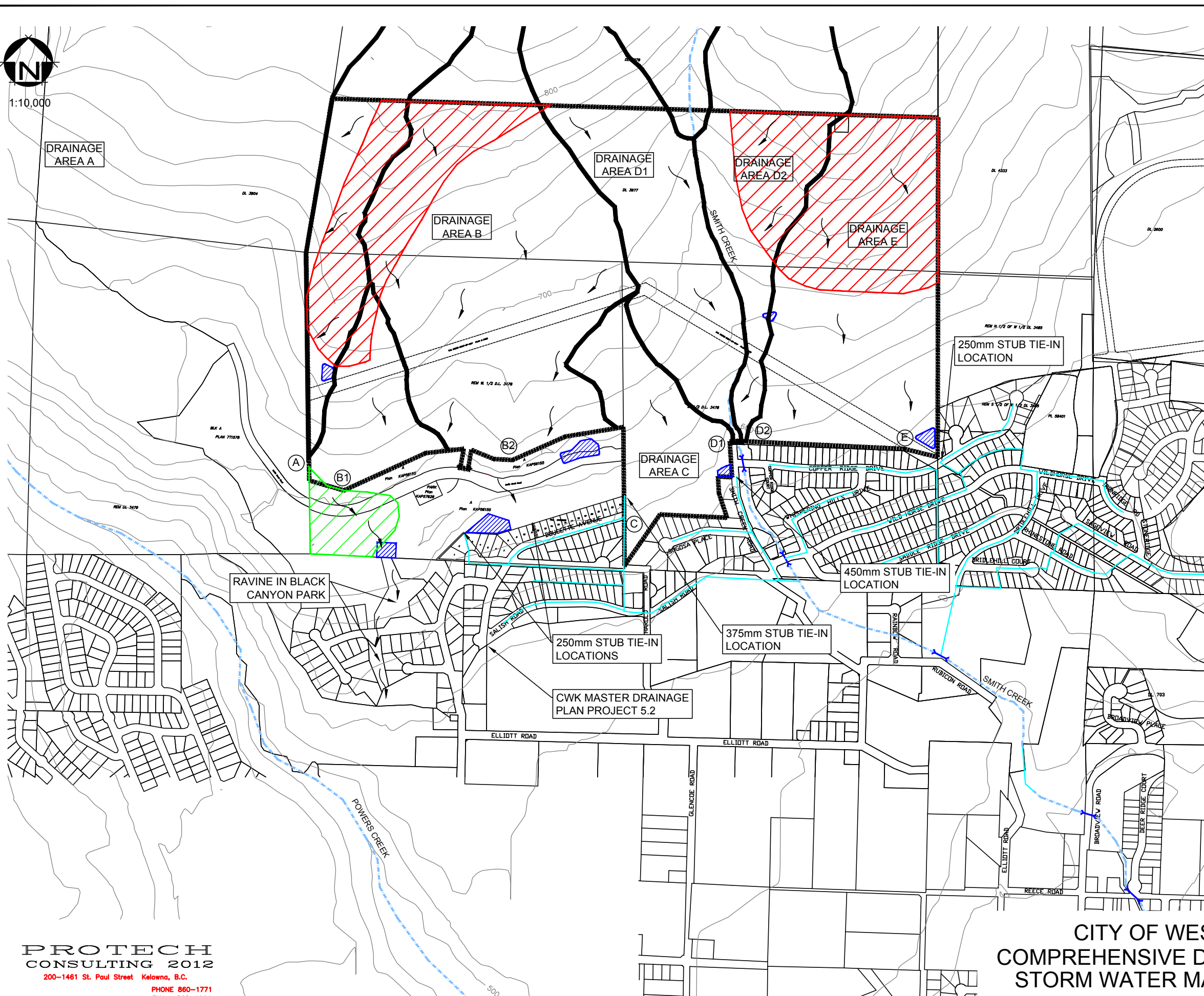


1:7500

CITY OF WEST KELOWNA
SMITH CREEK COMPREHENSIVE DEVELOPMENT PLAN
PHASING PLAN



1:10,000



STORM WATER MANAGEMENT NOTES

- DRAINAGE AREAS ARE SLIGHTLY ADJUSTED FROM BASINS SHOWN IN HYDROLOGY REPORT PREPARED BY WESTERN WATER ASSOCIATES LTD.
- STORM WATER TO BE MANAGED WITH THE USE OF SMALL SCALE INFILTRATION AND/OR DETENTION ON SITE WHERE APPROPRIATE
- CONTROLLED DISCHARGE OF DETAINED STORM WATER TO EXISTING INFRASTRUCTURE WITH ULTIMATE RELEASE TO SURROUNDING CREEKS IN COORDINATION WITH CWK WORKS AND SERVICES BYLAW NO. 0249
- RELEASE RATES TO CREEKS WILL BE SET TO REFLECT THE PEAK OF EXISTING CREEK FLOWS AS TO NOT IMPACT ANY DOWNSTREAM INFRASTRUCTURE. EACH PHASE OF DEVELOPMENT TO PROVIDE STORM DETENTION AND CONTROLLED RELEASE RELATIVE TO THE UNIT RUNOFF RATE (URR) APPLICABLE TO SUBBASIN WHERE THE PHASE IS LOCATED.
- DIRECT DISCHARGE TO SMITH CREEK SHOULD NOT RECEIVE ANY INCREASE IN PEAK FLOW THAN THAT WHICH IS CONTRIBUTED BY DRAINAGE AREAS D1 & D2.
- DRAINAGE OUTLET A TO INFILTRATE WITH ULTIMATE RELEASE TO POWERS CREEK
- DRAINAGE OUTLET B1 TO INFILTRATION AREA SOUTH OF SMITH CREEK ROAD WITHIN FUTURE DEVELOPMENT WITH ULTIMATE DISCHARGE TO BLACK CANYON PARK AND POWERS CREEK
- DRAINAGE OUTLET B2 TO CONTRIBUTE PARTIALLY TO B1 INFILTRATION AREA AND/OR PARTIALLY TO EXISTING INFRASTRUCTURE ON DOUCETTE DR OR SUMMERVIEW CT WITH ULTIMATE DISCHARGE TO SMITH CREEK
- DRAINAGE OUTLET C TO EXISTING INFRASTRUCTURE ON DOUCETTE DR, HAROLD RD OR SMITH CREEK ROAD WITH ULTIMATE DISCHARGE TO SMITH CREEK
- DRAINAGE OUTLET D1 TO EXISTING INFRASTRUCTURE ON SMITH CREEK ROAD WITH ULTIMATE RELEASE TO SMITH CREEK
- DRAINAGE OUTLET D2 TO EXISTING INFRASTRUCTURE ON SMITH CREEK ROAD WITH ULTIMATE RELEASE TO SMITH CREEK
- DRAINAGE OUTLET E TO EXISTING INFRASTRUCTURE ON COPPER RIDGE DRIVE WITH ULTIMATE RELEASE TO SMITH CREEK
- ANY DIRECT STORM DISCHARGE TO SMITH CREEK WILL BE TREATED TO THE STANDARDS SPECIFIED IN CITY OF WEST KELOWNA'S WORKS AND SERVICES BYLAW 0249
- OFFSITE UPGRADES ARE REQUIRED AS REPORTED IN THE CWK MASTER DRAINAGE PLAN. ISSUES WITH THE DOWNSTREAM INFRASTRUCTURE ARE EXISTING AND SHOULD BE REPAIRED BY THE CITY.

- ■ ■ ■ ■ SITE BOUNDARY
- ▬▬▬▬▬▬▬ EXISTING CREEK
- ▬▬▬▬▬▬▬ STORM CATCHMENT BOUNDARY
- ▬▬▬▬▬▬▬ EXISTING STORM PIPE
- ▬▬▬▬▬▬▬ EXISTING CULVERT
- ⊙ (A) DRAINAGE AREA OUTLET
- ▬▬▬▬▬▬▬ OVERLAND AND DITCH FLOW
- ▬▬▬▬▬▬▬ POTENTIAL STORM DETENTION FACILITY LOCATION
- ▬▬▬▬▬▬▬ AVOID INFILTRATION
- ▬▬▬▬▬▬▬ HIGH INFILTRATION POTENTIAL

PROTECH
CONSULTING 2012
200-1461 St. Paul Street Kelowna, B.C.
PHONE 860-1771
FAX 860-1994

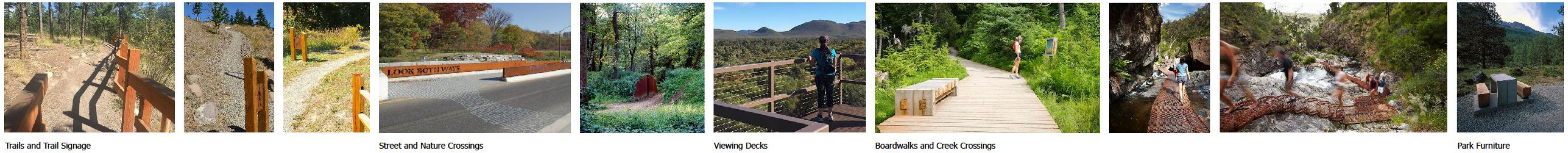
CITY OF WEST KELOWNA
COMPREHENSIVE DEVELOPMENT PLAN
STORM WATER MANAGEMENT PLAN

Fig. 15
SCALE 1:10,000

6085-SWM.dwg

SMITH CREEK MASTERPLAN

Fig. 16



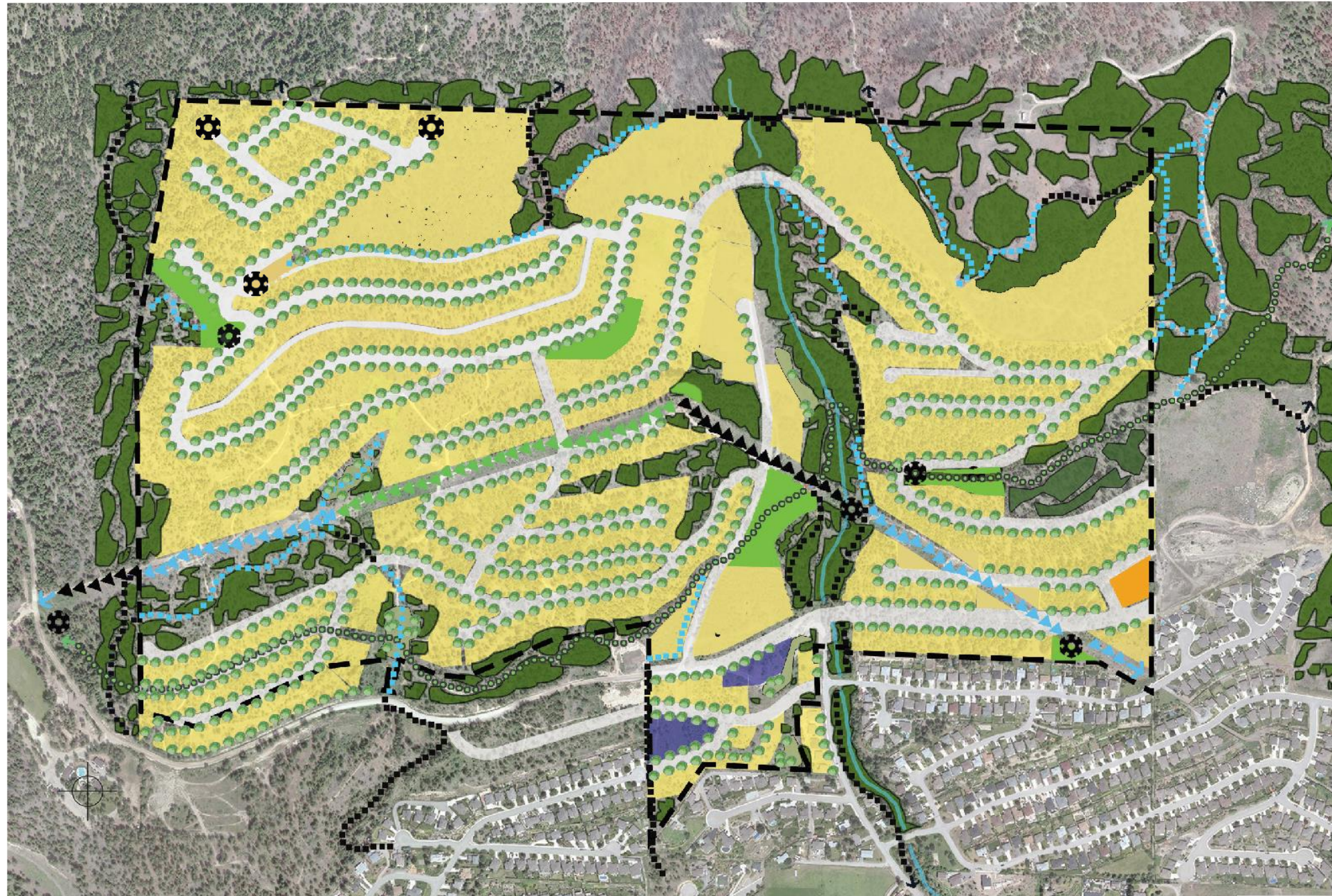
Trails and Trail Signage

Street and Nature Crossings

Viewing Decks

Boardwalks and Creek Crossings

Park Furniture



LEGEND

- Flume Trail:** 10m - 20m
Difficulty: Easy - Green, Moderate - Blue, Difficult - Black
- BC Hydro ROW and Path:**
Difficulty: Easy - Green, Moderate - Blue, Difficult - Black
- Nature Trail / Footpaths:** 0.5m - 1.5m
Difficulty: Easy - Green, Moderate - Blue, Difficult - Black
- Parks**
- Trail Access Area**
- Streetscape**
- Natural Hillside / Greenbelt**
- Single Family Residential**
- Townhome Residential**
- Residential / Commercial**
- Property Boundary**
- BC Hydro ROW**

Landscape Character:

The site is an established native hillside, with Ponderosa Pine, Douglas Fir and Bluebunch wheat grass spreading across the undulating topography, providing a stunning backdrop for the proposed development.

The development's intent is to allow large pockets of this native hillside to be retained for both recreation and a sense of place, and then adding to this and enhancing the communities experience through this native vegetation. The connectivity between the existing Smith Creek sub-division and the proposed development is important to create a sense of community, allowing access through to the myriad of trails on the surrounding crown land.

The historic Flume Trail is a significant landmark which will be embraced and highlighted with interpretive signage and many connections to the existing and future trail network. Access along tree lined streets will allow homeowners to cross the development and have access to this fantastic amenity, along with the multi-use path running east to west through the dedicated BC Hydro ROW.

This trail and streetscape will provide access to the many parks dedicated to the proposed development, encouraging active and passive zones for both children and adults. These will create a holistic environment of both natural and manicured amenities, establishing a sense of community.

The landscape character will further enhance the mixed housing typology, with landscaped streets, street lighting and street furniture throughout the development. The re-instatement of native vegetation into areas connecting to the natural hillside will be encouraged, with planting adapted to the Okanagan climate being used throughout the development.

Flume Trail:

This trail system is historic and varies along the route, but in general is moderately wide 10 - 20m and is compacted native soils and gravel, providing a stable surface. It is a multi-use path system used by walkers, hikers, mountain bikers, horse riders meandering through the native Ponderosa Pine forest and grasslands, which show of the Okanagan's wildflowers in spring. The trail rating is of easy, as it follows contours through ravines and hillside.

BC Hydro ROW and Path:

This trail is to remain as a multi-use pathway system, running along the ROW route. It is an exposed park with no trees, but has wonderful native grasses and shrubs stretching throughout the area. The trail rating is easy to difficult as it runs along the hillside, and can be used by walkers, strollers, scooters, cyclists and joggers.

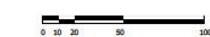
Nature Trail / Footpaths:

These trails vary between 0.3 - 1m in width, of compacted native soils or aggregates and have in many cases been created by hikers or mountain bikers. The trails traverse the hillside and connect with one another through beautiful forested and open tracks of the hillside, allowing one to immerse oneself in the natural environment. These trails would be used by hikers or mountain bikers as they are moderate to difficult.



Fig. 16

December 2019



ecora



Parks

Streetscape and Pathways

Interpretive Signage

Trail Access Areas