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**CITY OF KELOWNA  
MEMORANDUM**

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**Date:** April 17, 2009  
**To:** City Manager  
**From:** Land Use Management Department  
**APPLICATION NO.** DVP08-0259      **APPLICANT:** Shoreline Pile Driving  
**AT:** 3848 Capozzi Rd.              **OWNER(S):** Charles Fipke

**PURPOSE:** TO OBTAIN A DEVELOPMENT VARIANCE PERMIT IN ORDER TO VARY THE DOCK LENGTH FROM 47 METERS TO 93 METERS.

**EXISTING ZONE:** RU1 – LARGE LOT HOUSING ZONE

**REPORT PREPARED BY:** COREY DAVIS

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**1.0 RECOMMENDATION**

THAT Council authorize the issuance of Development Variance Permit No. DVP08-0259, for Lot A, Sec 1, Twp 25, O.D.Y.D., Plan 13822, located on 3848 Capozzi Road, Kelowna, B.C.

AND THAT variances to the following sections of Zoning Bylaw No. 8000 be granted:

**9.9.5 (a) Dock and Boat Lift Regulations – Dock Length**

Vary the maximum dock length requirement from 40 m to 93 m.

**2.0 SUMMARY**

The proposed moorage extension will result in the land owner being able to use their moorage as it was intended because sand accretion has resulted in creation of a beach area, rendering their moorage and boat lift unusable. The subject property is located in an urban residential/commercial area where extensive modifications to the shoreline have occurred, including docks, a public boat launch, marinas and complete removal of riparian vegetation.

In order to support this application the land owner proposes to enhance the riparian area of the foreshore, which includes the addition of a total of 50 native trees and shrubs in an area currently denuded of vegetation. The landscape plan was prepared and approved by a Qualified Environmental Professional. Also, to further protect the foreshore area of the subject property the land owner will register a no build/no disturb covenant under the Land Title Act against the title of the subject property to effectively preserve the riparian management area.

Based upon the Qualified Environmental Consultant's report, the proposed moorage expansion is unlikely to have any significant environmental impacts to aquatic and riparian communities, shoreline access, sediment transport or deposition, local substrate characteristics or habitats critical for fish and wildlife.

### 3.0 ADVISORY PLANNING COMMISSION

Pursuant to *Advisory Planning Commission Bylaw No. 8456* Section 3.4 (c), the requirements for review by the Advisory Planning Commission have been waived by the Director of Land Use Management in this case because the application is minor in nature and confirmation from affected neighbours supporting the variance has been received (see petition in support of this application, which is attached to this report).

### 4.0 BYLAW COMPLIANCE

The proposed development meets the requirements of the Dock and Boat Lift Regulations, except for the length of the dock. The Dock and Boat Lift Regulations specify that docks shall not extend a distance greater than 40.0 m from the natural boundary of the upland parcel. The length of the proposed dock will extend it to approximately 93 meters from the natural boundary of Okanagan Lake.

#### 4.1 Site Context

The subject property is located on Capozzi Road along the foreshore of Okanagan Lake. The surrounding area has been developed primarily as a single- and two-family neighbourhood. More specifically, the surrounding uses are as follows:

North-	RU1 – Large Lot Housing Zone
East	C9 – Tourist Commercial Zone
South	RU1 – Large Lot Housing Zone
South	RU6 – Two Dwelling Housing Zone
West	Okanagan Lake

### 5.0 TECHNICAL COMMENTS

(See attached)

### 6.0 LAND USE MANAGEMENT DEPARTMENT COMMENTS

#### History

The existing private moorage and boat lift along the subject property has not been operational for three years due to the accretion of sand along the foreshore north of the mouth of Mission Creek.

#### Variances:

With regard to the requested variance for dock length, Staff has no concerns, given that the land owner proposes to enhance the riparian area of the foreshore, which includes the addition of a total of 50 native trees and shrubs in an area currently denuded of vegetation. Also, to further protect the foreshore area of the subject property the land owner will register a no build/no disturb covenant under the Land Title Act against the title of the subject property to effectively preserve the riparian management area.

Based upon the Qualified Environmental Consultant's report, the proposed moorage expansion is unlikely to have any significant environmental impacts to aquatic and

riparian communities, shoreline access, sediment transport or deposition, local substrate characteristics or habitats critical for fish and wildlife.

Provided that there is no conflict with Provincial regulations, Staff has no concerns with this requested variance.



Todd Cashin  
Manager, Environment & Land Use

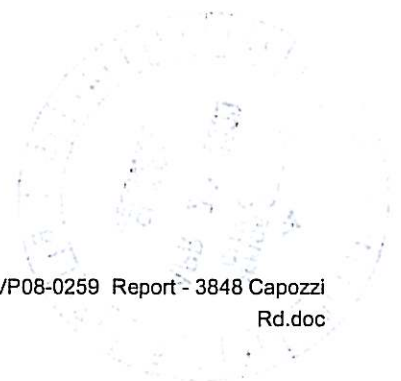
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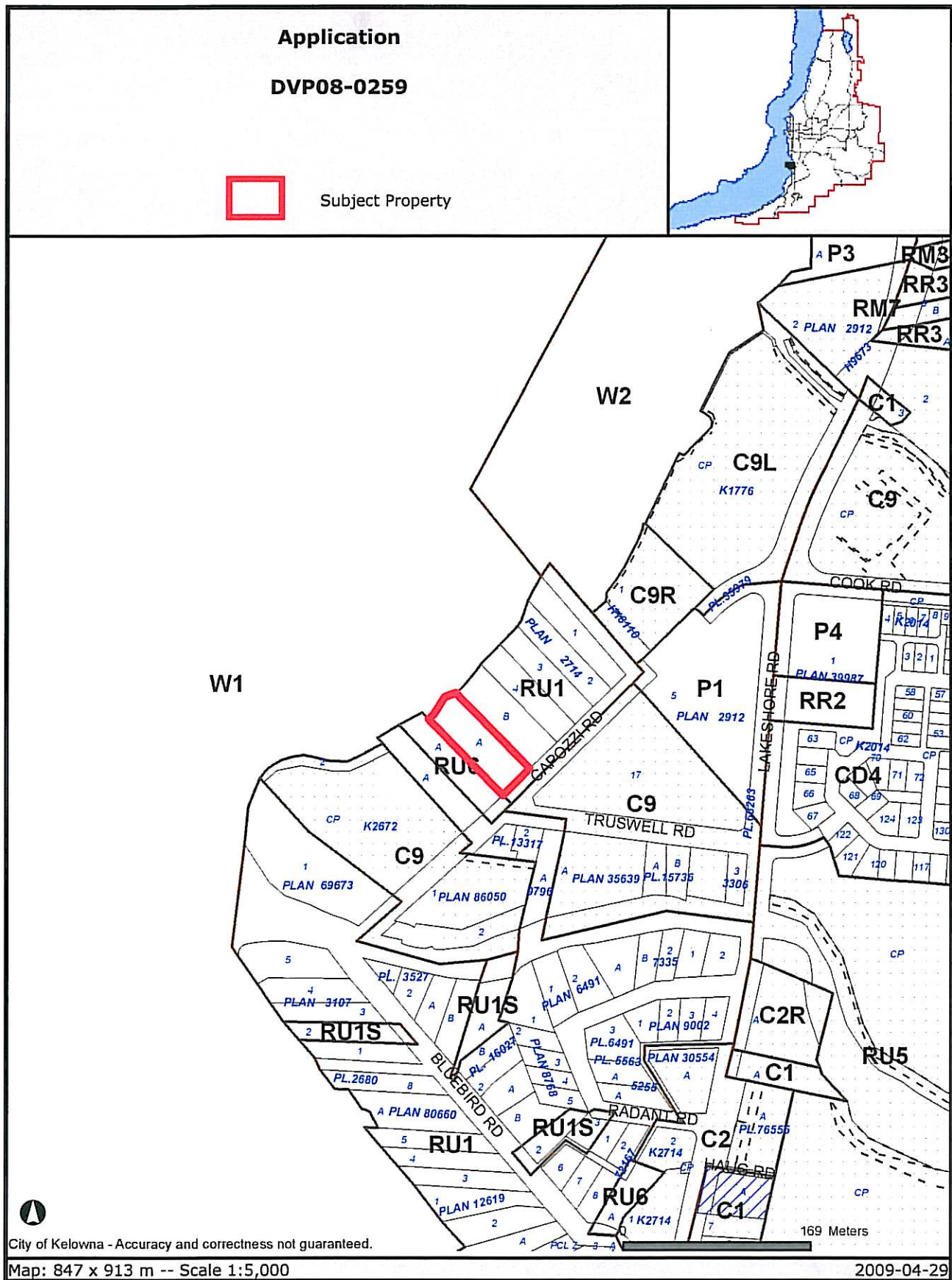


Shelley Gambacort  
Director, Land Use Management

#### ATTACHMENTS

- Location of subject property
- Site Plan
- Schedule "A" - Dock design plan (siting and dimensions).
- Schedule "B" - Foreshore riparian enhancement plan.
- Schedule "C" - No Build/No Disturb Covenant plan to be registered under the Land Title Act against the title of the subject property to effectively preserve the Riparian Management Area
- Schedule "D" - Environmental Assessment for Proposed Yellow Zone Moorage Extension, 3848 Capozzi Road, prepared by Ecoscape Environmental Consultants Ltd., dated May 2008.
- Technical Comments (1)
- Petition in Support

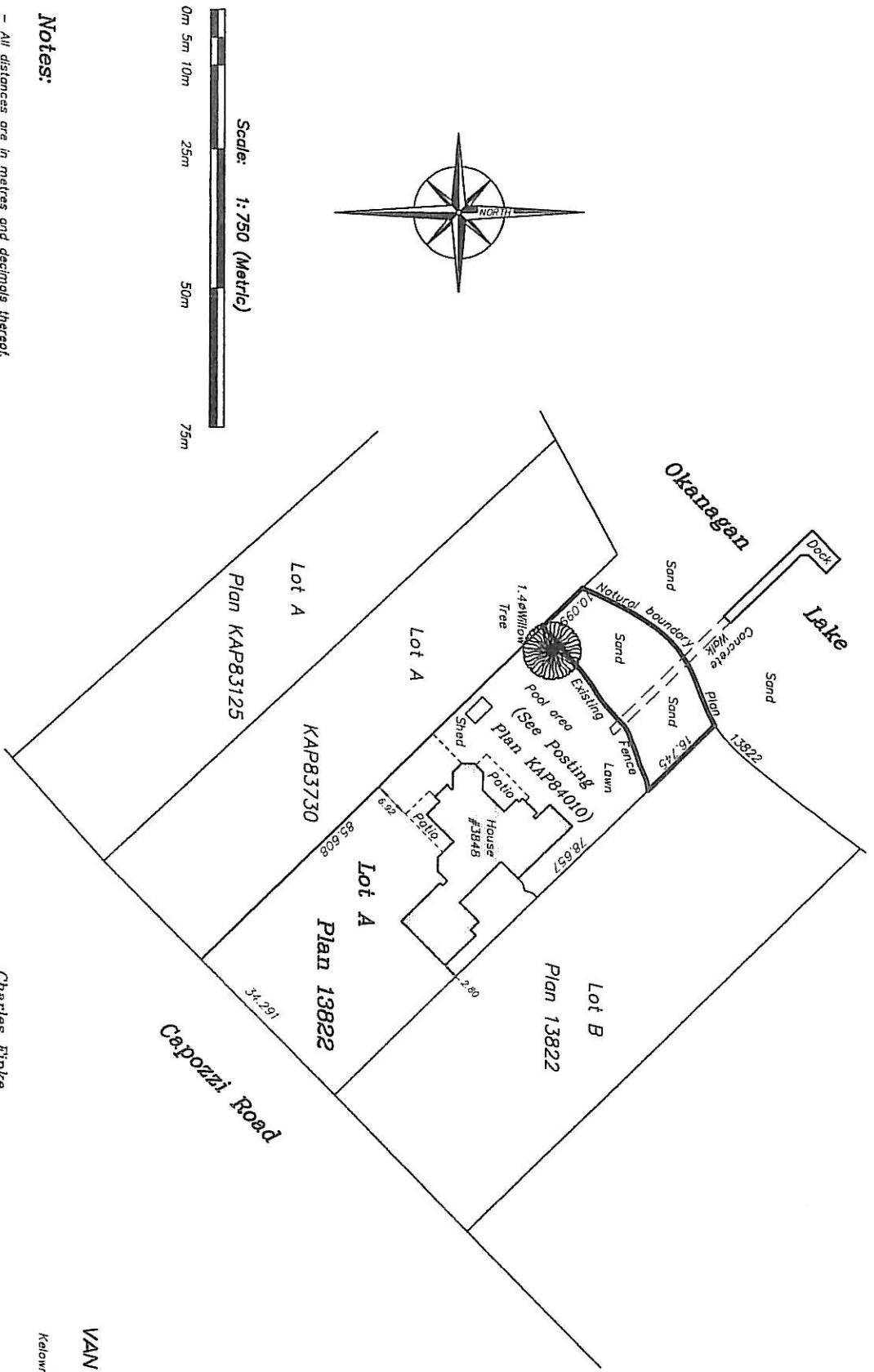




Certain layers such as lots, zoning and dp areas are updated bi-weekly. This map is for general information only.  
The City of Kelowna does not guarantee its accuracy. All information should be verified.



# SKETCH PLAN OF PART OF LOT A, PLAN 13822 SEC 1, TP 25, ODYD



**Notes:**

- All distances are in metres and decimals thereof.

Charles Fyffe  
March 27th, 2009.

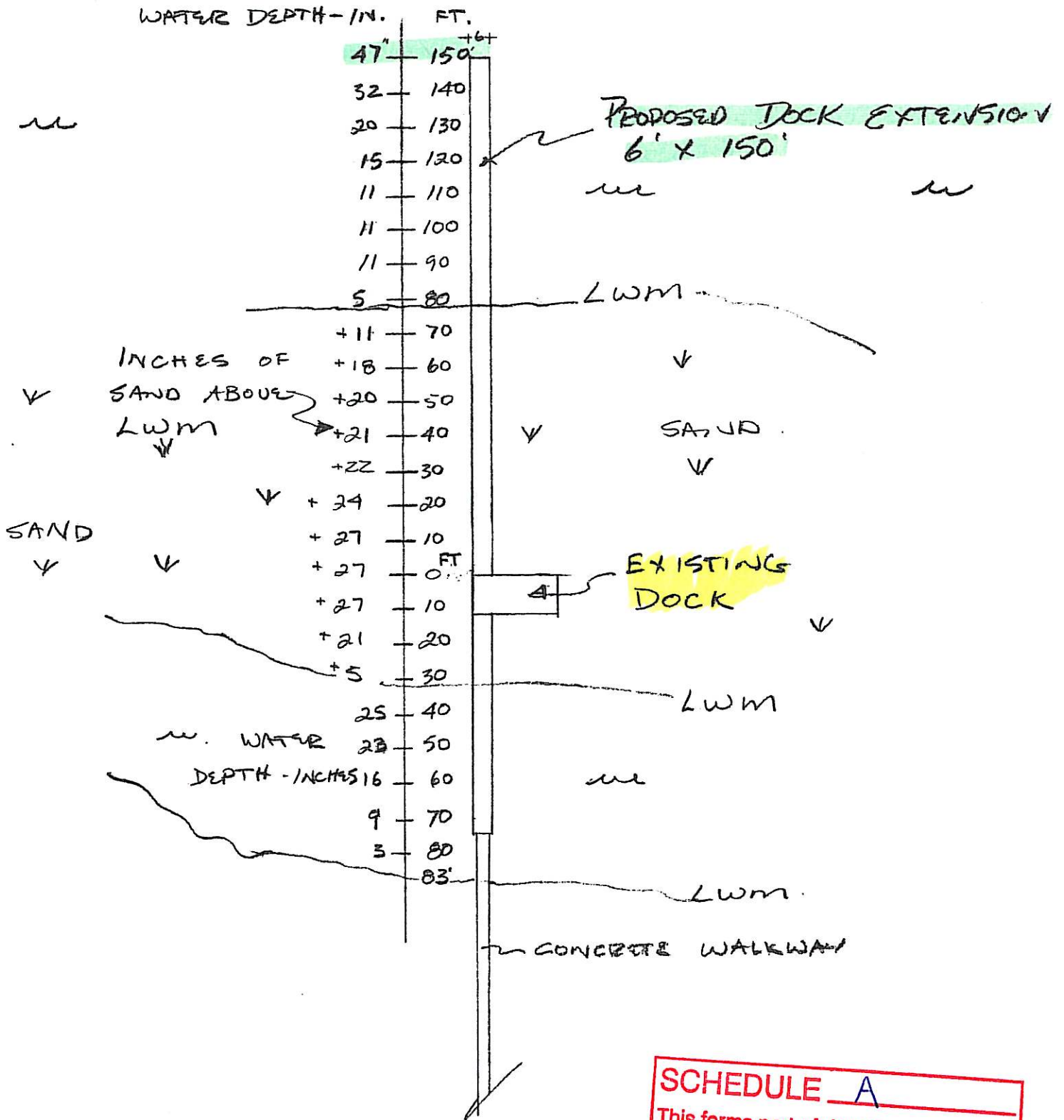
**VAN GURP & COMPANY**  
Land Surveyors  
201-1470 St. Paul Street  
Kelowna, B.C. Tel. (250) 763-5711

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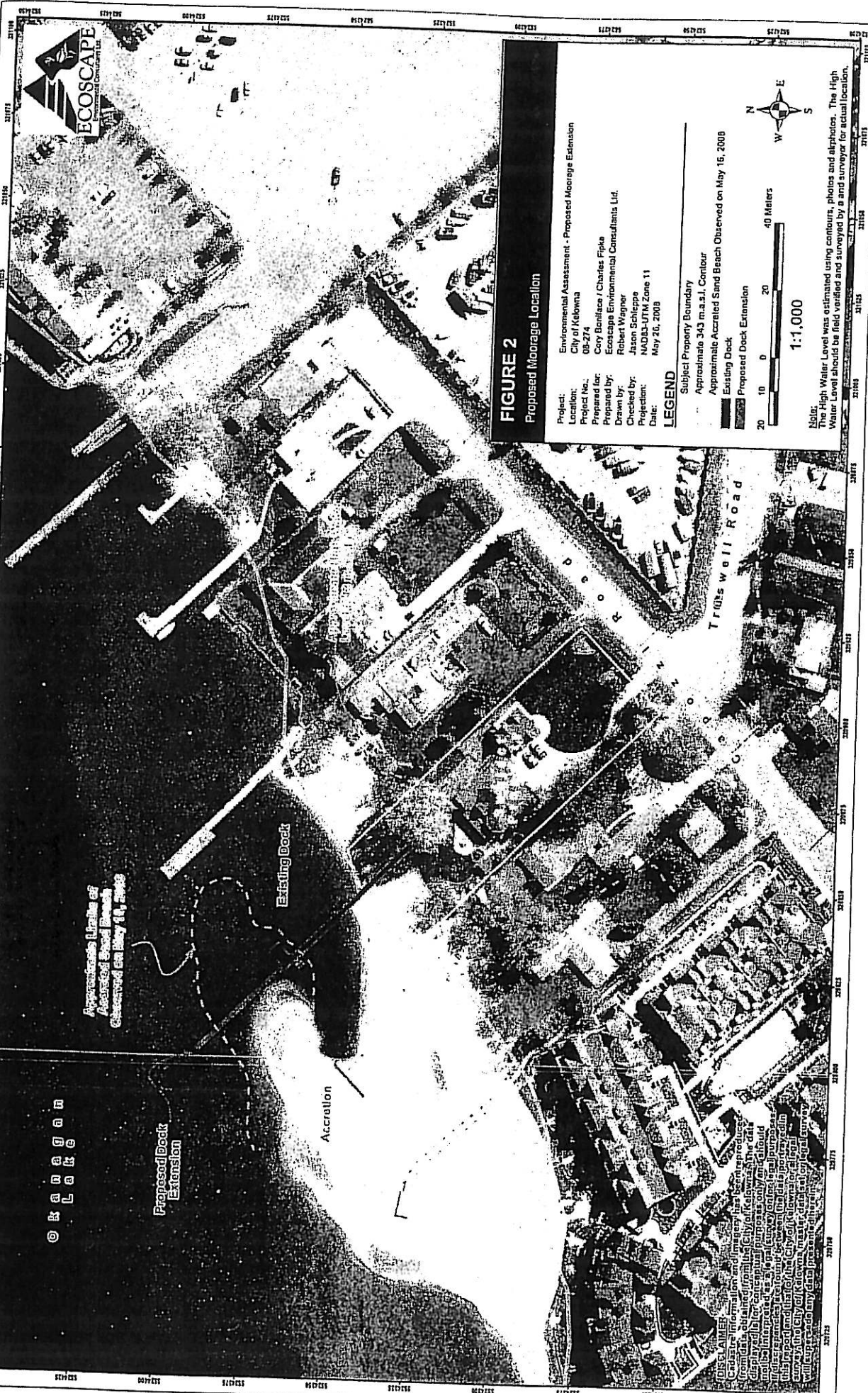
C. FIPKE  
CAPOZZI RD.

OKANAGAN LAKE

APR 14, 09  
Bmf.  
REVISED.



**SCHEDULE A**  
This forms part of development  
Permit # DVP08-0259



Approximate Limits of Accreted Sand Beach Observed on May 14, 2008

Existing Dock

Accretion

Okanagan Lake

Proposed Dock Extension

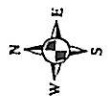
DISCLAIMER  
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**FIGURE 2**  
Proposed Moorage Location

Project: Environmental Assessment - Proposed Moorage Extension  
Location: City of Kelowna  
Project No.: 08-274  
Prepared for: Cory Bonifacio / Charles Fripka  
Prepared by: Ecoscope Environmental Consultants Ltd.  
Drawn by: Robert Wagner  
Checked by: Jason Scellegge  
Projection: NAD83-UTM Zone 11  
Date: May 26, 2008

**LEGEND**

- Subject Property Boundary
- Approximate 343 m.a.s.l. Contour
- Approximate Accreted Sand Beach Observed on May 16, 2008
- Existing Dock
- Proposed Dock Extension



1:1,000

Note: The High Water Level was estimated using contours, photos and airphotos. The High Water Level should be field verified and surveyed by a land surveyor for actual location.





April 9, 2009

File No: 09-410

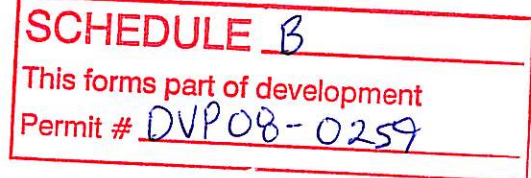
Charles Fipke  
3848 Capozzi Road  
Kelowna, BC  
V1W 3L2

Care of Cory Boniface

VIA Email: [corydownunder2003@yahoo.com.au](mailto:corydownunder2003@yahoo.com.au)

Dear: Mr. Fipke

**Subject: Riparian Enhancement at 3848 Capozzi Road, Kelowna, BC**



### Introduction

Ecoscope Environmental Consultants Ltd. (Ecoscape) was retained by Charles Fipke to complete an environmental assessment of 3848 Capozzi Road, Kelowna, BC in May, 2008. The subject property is legally described as Lot A, Plan 13822, Section 1, Township 25, ODYD. The environmental assessment focused on the fisheries and aquatic resources within and adjacent to the subject property, in relation to the proposed extension of the existing single private moorage.

The Okanagan Lake foreshore along the subject property and adjacent properties is currently used for residential and recreational purposes. As a result, the lakeshore and riparian fringe area have been heavily modified. As an addendum to the initial environmental assessment that was completed, Ecoscape was retained to provide a conceptual riparian enhancement plan for the sand beach area of the subject property. The development of a riparian enhancement plan utilizing native trees and shrubs is in accordance to recommendations made to Mr. Boniface by the City of Kelowna via email correspondence between Mr. Boniface and Mr. Corey Davis (Environment and Land Use Branch-City of Kelowna) on March 25, 2009.

### Proposed Works

The proposed riparian enhancement plan includes the addition of a total of 50 native trees and shrubs along the foreshore of Okanagan Lake in an area currently denuded of vegetation. Figure 1 illustrates the proposed planting location and recommended species. Tree species include two (2) black cottonwoods (*Populus balsamifera* ssp. *trichocarpa*), 10 sandbar willow (*Salix exigua*) and 38 native shrub species. To provide the landscape team with options, a variety of shrubs have been proposed for the project including red-osier dogwood (*Cornus sericea*), common snowberry (*Symphoricarpos albus*), tall Oregon grape (*Mahonia aquifolium*), nootka rose (*Rosa nutkana*) and prickly rose (*Rosa acicularis*). It is expected that red-osier dogwood will comprise a significant portion of the small shrub component of the enhancement plan.





## Recommendations

Recommendations to consider during the riparian enhancement works are as follows:

- The plants should generally be planted in the locations identified on the attached Figure 1. Ecoscape has been retained to provide environmental monitoring services for the project and the environmental monitor should be onsite during project startup to document that species and locations are in accordance to the approved enhancement plan.
- Vegetation should be provided with temporary drip irrigation for a minimum of 2 years following planting, to encourage survivability. Hand watering is also an acceptable method. To achieve the prescribed enhancement goal, including spatial coverage and riparian density, an 80% minimum survival is generally required for shrubs and trees.
- Individual planting pockets should be slightly over-excavated to allow for supplementation with soil within the hole (not necessary for the sandbar willow). Bark mulch should not be used due to the potential for leaching; however, a wood fiber mulch immediately surrounding the stem may be used to increase moisture retention.
- Soil used for planting pockets should be moved to the beach in small amounts and should not be stored within the riparian area. If any soil is to remain within the riparian area beyond one day, the soil should be secured with a tarp to minimize the potential for any sedimentation.
- Silt fence should be installed adjacent to riparian landscaping activities to prevent the addition of sediment-laden runoff into Okanagan Lake. The silt fencing should remain taut to prevent material flow over the fence and fencing should be dug into the ground approximately 6 inches to prevent sediment movement underneath. Silt fence must remain in place until all landscaping is complete.
- Silt fencing should be monitored on a regular basis and any damages or areas where the integrity and function of the fencing has been compromised should be repaired promptly.
- The use of chemical pesticides and fertilizers should be avoided due to close proximity to Okanagan Lake.
- If natural drift wood pieces are present along the foreshore adjacent the subject property, this wood could be incorporated into the landscaping to provide natural habitat complexity.



#### 4.0 Closure

This letter has been prepared for the exclusive use of Mr. Charles Fipke and Cory Boniface. Ecoscape has prepared this letter with the understanding that all available information on the past, present, and proposed conditions of the site have been disclosed. Mr. Fipke and Mr. Boniface have acknowledged that in order for Ecoscape to properly provide the professional service, Ecoscape is relying upon full disclosure and accuracy of all information.

If you have any questions, please contact the undersigned at your earliest convenience.

Respectfully Submitted  
ECOSCAPE ENVIRONMENTAL  
CONSULTANTS LTD.

Prepared By:

Reviewed By:

Danielle Drieschner, B.Sc., B.I.T.  
Natural Resource Biologist  
Direct Line: (250) 491-7337 ext. 201

Kyle Hawes, R.P.Bio.  
Natural Resource Biologist  
Direct Line: (250) 491-7337 ext. 203










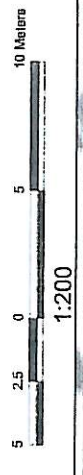


**FIGURE 1**  
Conceptual Landscape

Project: Environmental Assessment  
 Location: City of Kelowna  
 Project No.: 09-4-10  
 Prepared for: Cory Bonilacio / Charles Fipko  
 Ecoscope Environmental Consultants Ltd.  
 Drawn by: Mary Ann Olson-Russello  
 Checked by: Danielle Direschner  
 Projection: NAD83-UTM Zone 11  
 Date: April 9, 2009

**LEGEND**

-  Subject Property
-  Existing Dock
-  Black Cottonwood
-  Sandbar Willow
-  Small Shrub



**Table 1: Recommended Plants for Riparian Restoration and Enhancement**

Common Name	Scientific Name	~ Size at Maturity	Location	Quantity
Black cottonwood	<i>Populus balsamifera</i> ssp. <i>trichocarpa</i>	40 m	riparian	2
Sandbar willow/coyote willow	<i>Salix exigua</i>	3 m	riparian	10
<b>SMALL SHRUBS</b>				38
Red-osier Dogwood	<i>Cornus sericea</i>	1- 4 m	riparian	
Common Snowberry	<i>Symphoricarpos albus</i>	0.5 - 1 m	riparian	
Tall Oregon Grape	<i>Mahonia aquifolium</i>	0.5 - 1 m	riparian	
Nootka rose	<i>Rosa nutkana</i>	1-3 m	riparian	
Prickly rose	<i>Rosa acicularis</i>	1.5 m	riparian	
			<b>Total</b>	<b>50</b>

**DISCLAIMER**  
 Cadastre information and imagery has been reproduced from data obtained from the City of Kelowna. The data displayed is for conceptual purposes only and should not be interpreted as a legal survey or for legal purposes. If discrepancies are found between the data portrayed in this report and that of the City of Kelowna or a legal survey, the City of Kelowna master data set or legal survey will supersede any data presented herein.

**SCHEDULE C**

**This forms part of development**

**Permit #** DVP08-0259

Page of

TERMS OF INSTRUMENT – PART 2

SECTION 219 COVENANT

(NO DISTURBANCE ZONE COVENANT)

THIS AGREEMENT made this @ day of @, 200@.

BETWEEN:

@

(The "Transferor")

AND

CITY OF KELOWNA, A Municipal Corporation, having its offices at  
1435 Water Street, Kelowna, British Columbia V1Y 1J4

(The "Transferee")

WHEREAS:

1. The Transferor is the registered owner, in fee simple, of all and singular those certain parcels or tracts of land situate, lying and being in the City of Kelowna, in the Province of British Columbia, and described in Item 2, Parcel Identifier(s) and Legal Description(s) of Land, of the Form C to which these terms form a part (hereinafter, individually, referred to as the "Lands")
2. Section 219 of the *Land Title Act*, R.S.B.C., 1996 c. 250, provides that a covenant, in favour of the Transferee, whether of a negative or positive nature, in respect of the use of the Lands or that the Lands are or are not to be built on, may be registered as a charge against the title to the Lands and is enforceable against the Transferor and its successors in title even if the covenant is not annexed to land owned by the Transferee

NOW THEREFORE THIS AGREEMENT WITNESSES that in consideration of the premises and the sum of ONE (\$1.00) DOLLAR of lawful money of Canada, paid by the Transferee to the Transferor (the receipt whereof is hereby acknowledged), the parties hereto do hereby covenant and agree that the Lands shall be used in accordance with the terms of this Covenant, as follows:

1. Hereafter no building, structures or improvements of any kind shall be constructed or located on that portion of the Lands outlined in bold black on the reference plan of the Land, pursuant to Section 219 of the *Land Title Act* prepared by \_\_\_\_\_ B.C.L.S. and dated the @ day of @, 20@ and assigned registration number \_\_\_\_\_ (hereinafter referred to as the "No Disturbance Zone"), a photo-reduced copy of which are attached as Schedule "A".

**No Disturbance Zone Covenant**

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2. The Transferor further agrees that it shall not remove or disturb any soil, vegetation (with the exception of weeds) or trees from, nor construct or locate any buildings, structures or improvements of any land upon the No Disturbance Zone without first obtaining the written consent of the Transferee; except as indicated in a Wildfire Hazard Report as prepared by a professional forester and registered as a restrictive covenant.
3. The Transferor further agrees to temporarily fence off the area covered by this agreement with brightly coloured snow fencing during subdivision and building construction. Any areas damaged as a result of said construction must be rehabilitated to the satisfaction of the Transferee.
4. The Transferor will not permit any noxious weeds (as defined pursuant to the *Weed Control Act*, Statutes of British Columbia and Regulations thereto) to grow, propagate or remain on the No Disturbance Zone, and in the event of any appearance of noxious weeds in the No Disturbance Zone to take all steps necessary to immediately control same.
5. The Transferors do remise, release and forever discharge the Transferee and its officers, employees, servants or agents from all loss damage, costs, actions, suits, debts, accounts, claims and demands which the Transferors or their heirs, executors, administrators, successors and assigns may have against the Transferee and its officers, employees, servants or agents from and by reason of any damage suffered personally or in connection with any building, improvement, chattel or other structure, including the contents of them, built, constructed or placed on the Lands which loss or damage is the result of the movement of soil, rocks, vegetation or trees in the No Disturbance Zone.
6. Pursuant to Section 219 of the *Land Title Act*, the covenants herein contained shall be covenants running the Lands and shall inure to the benefit of and be binding upon the Transferor and the Transferor's heirs, executors, administrators, successors, assigns and successors in title.
7. The parties agree that nothing contained or implied herein shall in any way prejudice or affect the powers of the Transferee in the exercise of its functions under any statute, bylaw, order or regulation, all of which may be fully exercised in relation to the Lands as if this Agreement had not been executed.
9. In this Covenant unless the context otherwise requires, the singular includes the plural and vice versa.
10. This Covenant will be interpreted according to the laws of the Province of British Columbia.
11. If any part of this Covenant is found to be illegal or unenforceable, that part will be considered separate and severable and the remaining parts will not be affected thereby and will be enforceable to the fullest extent permitted by law.

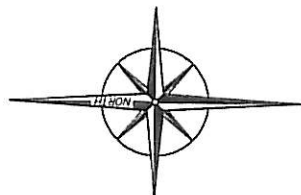
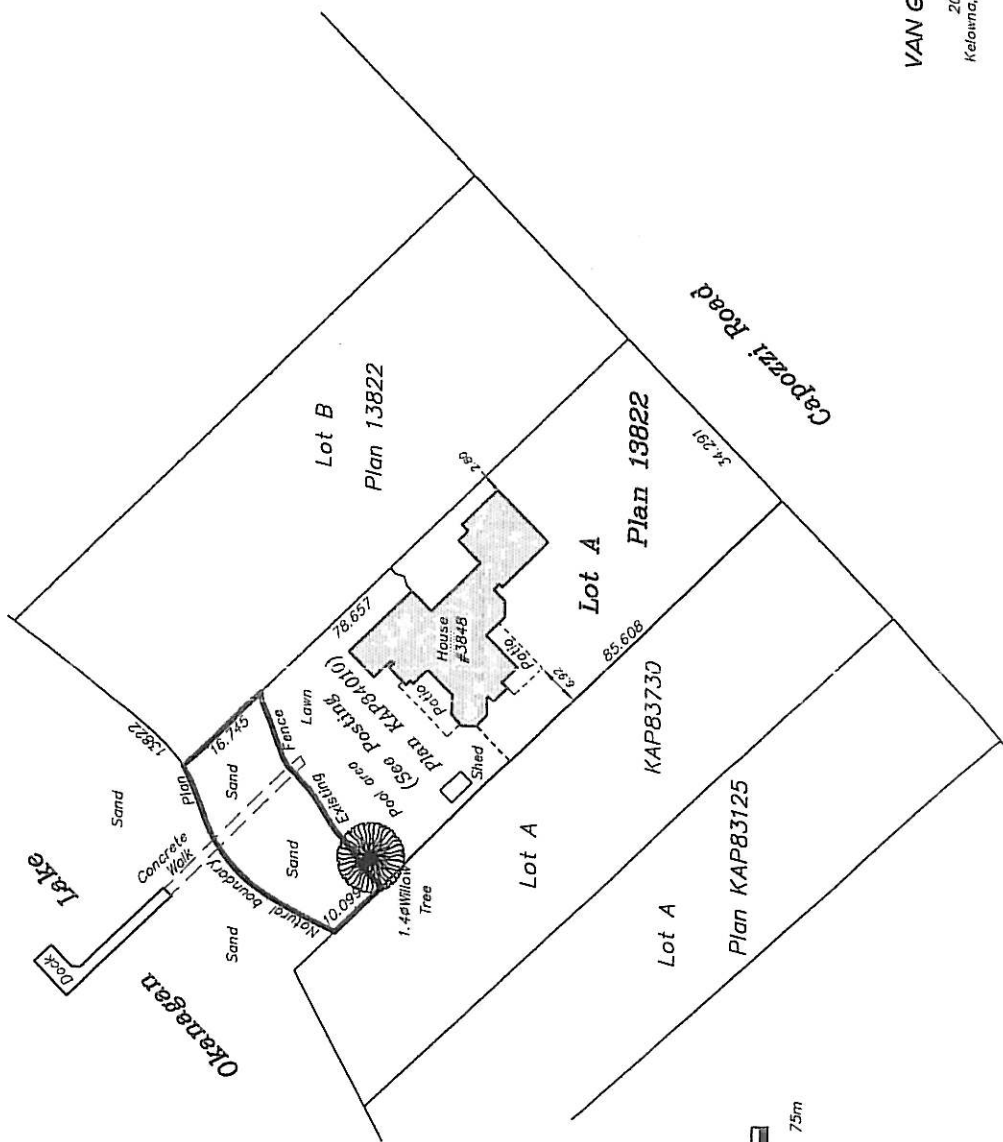
12. Nothing contained or implied in this Covenant shall prejudice or affect the exercise of any of the Transferee's functions under any source of authority including, without limitation, any statutes, regulations, bylaws, orders or other co stating documents, all of which may be fully and effectively exercised by the Transferee.
13. The Transferor will do or cause to be done, all things and execute or cause to be executed, all documents and give such further and other assurances which may be reasonably necessary to give proper effect to the intent of this Covenant.
14. The provisions herein contained shall not be modified or discharged except in accordance with the provisions of Section 219 of the *Land Title Act*.
15. Notwithstanding anything else herein contained to the contrary, it is understood and agreed that the terms, covenants and agreements herein contained shall only be personal and binding upon the Transferor with respect to the Lands, only for so long as the Transferor is the owner of such Lands. For greater certainty, neither the Transferor named in this Covenant, nor any future owner(s) from time to time of the Lands, shall be liable under any of the terms, covenants and agreements contained in this Covenant with respect to such Lands, where such liability arises by reason of an act or omission occurring after the Transferor named in this Covenant, or any future owner(s), ceases to have an ownership interest in such Lands.

\_\_\_\_\_  
Approving Officer for the City of Kelowna

\_\_\_\_\_  
Date

END OF DOCUMENT

**SKETCH PLAN OF PART OF LOT A, PLAN 13822  
SEC 1, TP 25, ODYD**



Scale: 1:750 (Metric)



**Notes:**

- All distances are in metres and decimals thereof.

**VAN GURP & COMPANY**  
land surveyors  
201-1470 St. Paul Street  
Kelowna, B.C. Tel. (250) 763-5711

Charles Fipke  
March 27th, 2009.

File: 15756skt-3

3848 CAPOZZI ROAD  
YELLOW ZONE MOORAGE ASSESSMENT

Lot A, Plan 13822, Sec. 1, Twp. 25, ODYD, Kelowna, BC

**Environmental Assessment for Proposed  
Moorage Extension in a  
Yellow Zone**



Prepared For:

Charles Fipke and Cory Boniface  
3848 Capozzi Road  
Kelowna, BC  
V1W 3L2

Prepared By:

ECOSCAPE ENVIRONMENTAL CONSULTANTS LTD.  
#102 - 450 Neave Court.  
Kelowna, B.C.  
V1V 2M2



May, 2008

File No. 08-274





TABLE OF CONTENTS

1.0 INTRODUCTION ..... 1

2.0 BACKGROUND INFORMATION ..... 1

    2.1 Proposed Works ..... 1

    2.2 Information Sources ..... 2

3.0 BIOPHYSICAL INVENTORY AND DESCRIPTION ..... 3

    3.1 Riparian and Littoral Habitats ..... 3

    3.2 Fisheries Values ..... 4

4.0 ENVIRONMENTAL IMPACT ASSESSMENT ..... 5

    4.1 Terrestrial and Riparian Habitats ..... 6

    4.2 Fisheries Resources ..... 6

        4.2.1 Pile Driving ..... 6

        4.2.2 Shading and Ambient Light Impacts ..... 7

        4.2.3 Fish Community Assemblages ..... 8

        4.2.4 Predator-Prey Relationships ..... 8

        4.2.5 Operation ..... 9

5.0 PROJECT ACTIVITIES AND MITIGATION ..... 9

    5.1 Project Activities ..... 9

    5.2 Mitigation Measures ..... 9

        5.2.1 Design and Construction ..... 9

        5.2.2 Timing ..... 11

        5.2.3 Operation ..... 11

        5.2.4 Construction Monitoring ..... 11

6.0 CONCLUSION ..... 12

7.0 CLOSURE ..... 12

REFERENCES ..... 13

PHOTOGRAPHS

FIGURES

FIGURE 1 ..... Site Location

FIGURE 2 ..... Proposed Moorage Location

FIGURE 3 ..... Proposed Moorage Design

FIGURE 4 ..... Fisheries and Foreshore Information

FIGURE 5 ..... Typical Pile Supported Dock

APPENDICES

APPENDIX A ..... Project Review Information Requirements for Works Affecting Fish Habitat

APPENDIX B ..... QEP Checklist



## 1.0 INTRODUCTION

Ecoscape Environmental Consultants Ltd. (Ecoscape) was retained by Charles Fipke to complete an environmental assessment of 3848 Capozzi Road, Kelowna, BC for expansion of an existing single private moorage (Figures 1 and 2). The subject property is legally described as Lot A, Plan 13822, Section 1, Township 25, ODYD. The scope of this report is commensurate with the provincial protocol for works occurring near or within identified Kokanee spawning areas.

This report assesses existing and potential fisheries habitats, identifies fisheries sensitive areas, and subsequently specifies design, construction, and mitigation measures to maintain the natural integrity of riparian and fisheries resources which occur adjacent to the subject property.

## 2.0 BACKGROUND INFORMATION

The Ministry of Environment has recently enacted new provincial policy for construction of moorages along Okanagan Lake. The intent of this new policy is to ensure adequate protection of critical shore spawning Kokanee areas within Okanagan Lake. As part of the policy, three zones were created. Red Zones are considered high value, critical habitat areas for shore spawning Kokanee and occur in areas where greater than 50 spawning fish have been observed in any given year. Yellow zones are considered moderate to high value habitat and occur in areas where aggregations of less than 50 fish have been observed or in close proximity to identified spawning streams. Green or no color zones are areas where spawning Kokanee have not been recently observed and there is no historical evidence of Kokanee spawning. The identification of red, yellow, and green/no color zones are based upon recent and historical Kokanee spawning data, and will be refined as more spatially accurate spawning data is collected in future years.

The subject property occurs in an area that has been identified as a Yellow Zone by the Ministry of Environment.

### 2.1 Proposed Works

The existing moorage that occurs over Okanagan Lake along the subject property is L-shaped, with an area of approximately 100.1 m<sup>2</sup>, including the concrete access ramp from the fence to the wooden decking (Photo 1). The existing moorage includes a concrete access ramp that is approximately 26.35 m long and 1.5 m wide; the concrete structure was measured from the gate/fence of the subject property (Photo 2). Wooden decking extends an additional 22.25 m from the concrete structure and is supported over wooden piles. The existing wooden decking is approximately 1.83 m wide and culminates in an L-shape; the L-shape is approximately 3.64 m wide and 7.3 m long. There is an existing boatlift on the south side of the dock. The boat lift and end of the dock occur over a sand beach, which has become established due to accretion of sand adjacent the subject property and along the foreshore north of the confluence of Mission Creek and Okanagan Lake (Photo 3). The



end of the dock was situated approximately 0.75 m above the sand during the May 16 site visit.

A moorage design prepared by Shoreline Pile Driving indicates that the proposed works include the extension of the existing dock into Okanagan Lake by a total of approximately 35 m, although nearly 30 m of that extension will be located over accreted sand beach (Photo 4; Figure 3). The boat lift is proposed to be moved from the end of the existing dock to the north side of the extended dock over deeper water. The width of the proposed extension is 1.8 m, resulting in a total area of 63 m<sup>2</sup>. During the May 16 site visit, the accreted sand beach area persisted beyond the existing dock for approximately 29.05 m to the wetted edge of Okanagan Lake. From the wetted edge, the proposed dock will extend an additional 5.95 m into Okanagan Lake (Photo 5). The depth at the approximate location of the end of the dock was measured at 0.91 m on May 16. The geodetic lake level during the May 16 field assessment was 341.76 m (above sea level), which is about 0.8 m below full pool level of Okanagan Lake<sup>1</sup>. Surface water temperatures during the site assessment were approximately 9 °C.

The existing private moorage and boat lift along the subject property has not been operational for two years due to the accretion of fines along the foreshore north of the mouth of Mission Creek. The property owner would like to work with the Ministry of Environment and Department of Fisheries and Oceans Canada towards a long term solution to address the accumulation of sediments adjacent the subject property. The property owner has considered dredging the accumulation of sand to render the existing moorage structure accessible by boat; however, this report pertains exclusively to dock extension and an impact assessment of dredging is beyond the scope of this present report.

## 2.2 Information Sources

The following are information sources were used for this assessment:

- Regional District Central Okanagan Foreshore Inventory Mapping (Regional District Central Okanagan, 2005).
- Field Inventory of Subject Property.
- BC Ministry of Environment. 2007. Okanagan Lake Kokanee shore spawning records (GIS database).
- Department of Fisheries and Oceans. The Operational Statement for Dock Construction in Freshwater Systems.
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- Foreshore Assessment, Fish Habitat Enhancement and Breakwater Prescription 3914 Bluebird Road. EBA File No: 0805-5800002. January 2003.

<sup>1</sup><http://scitech.pyr.ec.gc.ca/waterweb/fullgraph.asp>



and included a detailed biological inventory of fish habitat features. The goal of fish habitat inventories was to determine habitat features that are important, including submerged aquatic vegetation, lakebed substrates, potential spawning areas, and riparian area condition. Ecoscape documented existing riparian habitats and other features that may be affected by the proposed development. This report also provides general recommendations and measures to ensure that there is No Net Loss of productive capacity of fish habitat, as a result of the proposed structure.



Any additional references are detailed at the end of this report.

### 3.0 BIOPHYSICAL INVENTORY AND DESCRIPTION

The environmental assessment was carried out on May 16, 2008 by Danielle Drieschner, B.Sc., B.I.T., a natural resource biologist with Ecoscape Environmental Consultants Ltd. and included a detailed biological inventory of fish habitat features. The goal of fish habitat inventories was to determine habitat features that are important, including submerged aquatic vegetation, lakebed substrates, potential spawning areas, and riparian area condition. Ecoscape documented existing riparian habitats and other features that may be affected by the proposed development. This report also provides general recommendations and measures to ensure that there is No Net Loss of productive capacity of fish habitat, as a result of the proposed structure.

The following sections describe the inherent values and conditions within the subject property.

#### 3.1 Riparian and Littoral Habitats

The Okanagan Lake foreshore along the subject property and adjacent properties is currently used for residential and recreational purposes. As a result, the lakeshore and riparian fringe area have been heavily modified.

The subject property is located in an urban residential area along the eastern shoreline of Okanagan Lake, roughly 235 m north of the confluence of Mission Creek and Okanagan Lake. The subject property contains a single family dwelling and retains minimal natural character (Photo 6). Riparian vegetation is limited to two mature Pacific willows growing within the fenced yard, which consists predominantly of manicured turf and non-native horticultural species of vegetation. A swimming pool occurs within the fenced yard. A concrete pathway leads from the single family dwelling onto the concrete access ramp of the existing dock. The accretion of sand adjacent the subject property has resulted in an expanded beach area approximately 46 m from the fence (Photo 7). The beach area was approximately 33 m wide during the May 16 site visit. The shallow, sandy area is utilized for recreational skim boarding, with intense use in summer months. Numerous people were using the accreted beach area during the site visit and it was noted that litter/garbage is accumulating.

The subject property occurs along shore Segment 18, as described by the Regional District of Central Okanagan Foreshore Inventory Mapping (FIM) (Magnan and Cashin, 2005). The primary land use within this area was noted as being commercial, due to high density resort-style developments along the foreshore. Anthropogenic disturbance occurs over 100% of the 768 m segment. Extensive modifications to the shoreline have occurred, including complete removal of riparian vegetation, several marinas, public boat launch retaining walls, imported beach materials and docks at a density of 16/km (Magnan and Cashin, 2005). The shore type along the segment is sand beach, with a shallow littoral zone averaging 150 m in width. Substrates in the nearshore area are described as being



predominantly fines. The description of Segment 18 is generally consistent with that of the subject property. Fisheries and foreshore information in relation to the subject property and proposed dock are found in Figure 4.

The foreshore of Okanagan Lake along the subject property consists of an exclusively sand beach. During the site assessment, a transect was extended along the existing moorage structure to the approximate location of the proposed moorage extension. Substrates along the entire segment consisted exclusively of fines (Photo 8). The accretion of sediments and increasing beach zone along the foreshore has resulted in the formation of a stagnant lagoon which backwaters adjacent the subject property (Photo 9). Substrates in this location were fine organic sediments and sand. No aquatic macrophytes were observed to be growing in the vicinity of the existing or proposed dock.

The littoral area near the subject property is dynamic in nature, due to sediment discharges from Mission Creek and littoral processes along the shoreline. Winds along the shoreline are from the southwest and north and, historically, sediment was distributed relatively evenly to the north and south of Mission Creek (Geotactics, 2002, *Appendix A in EBA, 2003*). Disruption of the natural wind flow from the north due to the Okanagan Lake Floating Bridge has resulted in longshore sediment transport and littoral drift primarily occurring from southwest to north near the subject property (Geotactics, 2002, *Appendix A in EBA, 2003*). This results in an accretion of sediments on the north side of the confluence with Mission Creek and Okanagan Lake. It is not known how wave action and sediment transport will change, once the floating bridge is dismantled.

### 3.2 Fisheries Values

In Okanagan Lake, kokanee (*Oncorhynchus nerka*) are the fish species of most concern with respect to shoreline development and aquatic habitat alteration. Recent declines of shore spawning kokanee have been primarily attributed to three factors including interspecific competition with the opossum shrimp (*Mysis relicta*), a general reduction in lake carrying capacity due to nutrient imbalance, and egg and alevin mortality associated with stranding (a result of lake level regulation) (Wilson and Andrusak, 2003). Cliff/bluff and low rocky shorelines are recognized as preferred habitats for shore spawning kokanee.

In the Central Okanagan, Foreshore Inventory Mapping and Ministry of Environment kokanee shore spawning records indicate that for each shore type, spawning activity was present in 83% of the cliff/bluff segments, 75% in the low rocky shoreline segments, 34% in the vegetated shoreline segments and 15% in the coarse gravel beach segments. Historically, 95% of cliff/bluff shorelines had records of kokanee shore spawning, while low rocky shorelines, vegetated shorelines, and gravel beaches had 86%, 82% and 78%, respectively. The fine substrates along the subject property are not conducive to shore spawning kokanee and are highly unstable due to wind and wave energy.

A summary map of kokanee spawning locations indicates that kokanee have historically spawned along the foreshore adjacent to the subject property; however, historical data (1972-2000) did not utilize GPS technology and is based on reach breaks, making it



difficult to determine exactly where within the reach spawning occurred (Magnan and Cashin, 2005). While kokanee may not spawn along the foreshore in the vicinity of the subject property, stream spawning kokanee utilize Mission Creek which is located approximately 235 m south of the subject property. As Mission Creek is the largest tributary to Okanagan Lake, it is assumed that a suite of fish species utilize the confluence of Mission Creek extensively for staging, foraging and rearing grounds. The Kelowna Shore Zone Fisheries and Wildlife Habitat Assessment (Schleppe and Arsenault, 2006) noted that Great Blue Heron and an American Pelican were observed foraging at the mouth of Mission Creek, highlighting the importance of the alluvial fan for foraging piscivorous (fish eating) birds.

Twenty-four fish species are reported to occur in Okanagan Lake, including both indigenous and introduced species. The majority of these species may inhabit or frequent aquatic habitats adjacent the subject property over the year. Fish species include: Eastern Brook Trout (*Salvelinus fontinalis*), Burbot (*Lota lota*), Carp (*Cyprinus carpio*), Chiselmouth (*Acrocheilus alutaceus*), Cutthroat Trout (*Oncorhynchus clarki lewisi*), Kokanee (*Oncorhynchus nerka*), Lake Trout (*Salvelinus namaycush*), Lake Whitefish (*Coregonus clupeaformis*), Largescale Sucker (*Catostomus macrocheilus*), Leopard Dace (*Rhinichthys falcatus*), Longnose Dace (*Rhinichthys cataractae*), Longnose Sucker (*Catostomus catostomus*), Mountain Whitefish (*Prosopium williamsoni*), Northern Pikeminnow (*Ptychocheilus oregonensis*), Peamouth Chub (*Mylocheilus caurinus*), Prickly Sculpin (*Cottus asper*), Pumpkinseed (*Lepomis gibbosus*), Pygmy Whitefish (*Prosopium coulteri*), Rainbow Trout (*Oncorhynchus mykiss*), Redside Shiner (*Richardsonius balteatus*), Slimy Sculpin (*Cottus cognatus*), Steelhead (*Oncorhynchus mykiss*), Smallmouth Bass (*Micropterus dolomieu*), and Yellow Perch (*Perca flavescens*) ([www.fishwizard.com](http://www.fishwizard.com)). Numerous fry were observed in the shallow lagoon south of the existing dock, although they were not identified to species due to lack of clarity within the water column and absence of fish sampling within the scope of this project. A large carp was observed under the existing dock in depths of approximately 0.45 m near a wooden piling (Photo 10).

#### 4.0 ENVIRONMENTAL IMPACT ASSESSMENT

Generally, the property owners would like to extend the existing moorage to resume the intended function of having a single private moorage and boat lift. With the accreted sand beach present at the end of the existing moorage, the boat lift is no longer above water and is not accessible. The portions of the dock over water occur over a stagnant backwater lagoon and the property owner has expressed concerns with the water quality in this area due to high coliform counts recorded during independent testing of the area by Dobson Engineering (retained by Charles Fipke to conduct the sampling work). Maximum depth within the lagoon during the site visit was 0.7 m and the boat lift was completely inaccessible. The new structure is proposed to be located over deeper water, which will help to minimize impacts of prop wash and wave action.



The following section discusses the potential environmental impacts associated with the proposed moorage extension.

#### 4.1 Terrestrial and Riparian Habitats

It is not anticipated that there will be any impacts to terrestrial and riparian habitats associated with the proposed moorage expansion. As the riparian and upland area of the subject property have been highly modified and substrates are exclusively fines, additional impacts due to expansion construction are unlikely. No disturbance to the existing, heavily modified riparian area should occur. It is anticipated that dock construction will take place from a floating barge and that the majority of construction would occur over accreted sand beach. To enhance the heavily modified foreshore and improve riparian function, Ecoscape recommends incorporating native plantings along the foreshore near the lagoon area.

#### 4.2 Fisheries Resources

Cumulative effects of incremental shoreline development on fish assemblages are widely recognized, but typically not considered during the construction of a single over-water structure (Carrasquero, 2001). Docks can alter the shore zone habitat structure, promoting changes in fauna and floral assemblages. These structures can thereby potentially affect the biological community by altering predator-prey relationships, fish behaviour, and habitat function. The following sections discuss some of the potential general impacts to fisheries resources associated with overwater structures.

##### 4.2.1 Pile Driving

Noise impacts to fish are not well understood. It is thought that the main danger to fish is the pressure pulse rupturing the swim bladder rather than effects on hearing (Vagle, 2003).

Studies have monitored the noise intensity of pile driving and the impacts this has on fish. Using wooden piles, sound pressures are significantly reduced compared to steel pilings and may be around 20KPa. Vagle (2003) observed attraction of juvenile salmon to pile driving in Sicamous, perhaps attracted to liberation of worms and other animals the fish may eat. In addition, this study revealed that fish were not impacted by pile driving with passive milling behaviour observed during pile driving activities, thus suggesting that physiological damage was not occurring to these fish at the sound pressures created by the placement of wooden piles.

Sediment disruption causing increased water turbidity is not anticipated as a significant risk during pile driving activities, as placement of piles does not generally liberate significant amounts of sediment. There is a low risk of significant sediment disturbance as a result of extension of the single moorage structure. Approximately 14 wooden pilings will be required for the proposed structure. Disturbance of sediments should be localized and should not result in re-deposition of fines over coarse substrates.





#### 4.2.2 Shading and Ambient Light Impacts

Shading can affect fish behaviour and habitat function by creating visual barriers to migrating fish (Carrasquero, 2001), and reduce local production by reducing available photosynthetically active light radiation. The total area of the proposed expansion to the existing private moorage is approximately 63 m<sup>2</sup>, although only approximately 10.8 m<sup>2</sup> will occur over water (based on May 16 site visit) and the remainder will be over an accreted sand beach. The size limit to avoid review by Fisheries and Oceans Canada is 24 m<sup>2</sup>. Therefore, the proposed dock design will likely require an evaluation by DFO, based upon the Operational Statement for Dock Construction in Freshwater Systems.

The height at which the dock is situated above the water with the raised pilings helps to mitigate the intensity of shading and may reduce the potential impacts of visual barriers created by the structure. The use of boat lifts allow greater light penetration to the lake bottom when boats are elevated and the width of the dock has been designed at 1.8 m to reduce shade impacts. The absence of native aquatic vegetation in this area also reduces the sensitivity of the area to shading. The Fisheries and Oceans Canada Operational Statement for Dock Construction does recommend that connected access ramps should be a maximum of 1.5 m wide to minimize shading, which is consistent with the width of the existing concrete access ramp.

All wooden pilings have sides which will receive light. Thus, the pilings (untreated Douglas fir) may offer additional surface area for algae to grow on, thereby increasing the structural complexity of littoral habitats within this specific location. A potential reduction of phytoplankton primary production due to shading may be compensated by the production of algae and bacteria (periphyton) that may become established on new pilings.

The moorage design utilizes untreated fir pilings to elevate the structure above water. Generally, wood pile-supported structures are anticipated to have fewer impacts than alternatives, such as floating or metal supported docks because they do not influence wave dynamics to the same extent. The benefits of wood pile-supported docks include a reduced effect on shading because the dock is elevated above the water level, increased wave action along the shoreline, and increased biotic productivity through periphyton that establish on the wood pilings. The mean annual HWL is 342.6 m above sea level (m.a.s.l.), and the dock should be elevated so that the underside of the dock is positioned no lower than 343 m.a.s.l.. Having the dock sufficiently elevated allows for increased light penetration and to a certain extent mitigates the potential impacts of visual barriers and shading created by the structure.

The total number of pilings is estimated at 14. The diameter of pilings generally ranges between 0.25 and 0.30 m. Therefore, the cumulative piling footprint for the proposed expansion is estimated to be 0.69 to 0.99 m<sup>2</sup>. However, the surface area of pilings can be up to five (5) times greater than that lost to the piling footprint and provides additional surface for growth of bacteria and algae and subsequent increase of forage for macroinvertebrates and fish. The loss of less than 1 m<sup>2</sup> of lake bottom is also not considered a significant loss of habitat.





### 4.2.3 Fish Community Assemblages

In the absence of bass, piling studies have shown that piling supported piers have no significant effect on densities of any littoral fish (Beauchamp et al., 1994). While smallmouth bass have been reported in Okanagan Lake, recent intensive fish sampling yielded no catches of this species (Schleppe and Arsenault, 2006). Ecoscape has confirmed that small mouth bass are present in Skaha Lake to the south, but it is unknown if bass have migrated into Okanagan Lake. If bass are present in Okanagan Lake, their population is small and perhaps still fairly localized around sites where previous observations were made. Therefore, unless a bass population is successful at establishing in Okanagan Lake, there may not be a significant effect on the densities of littoral fish species aggregations due to increased artificial structure.

Despite the lack of empirical evidence, the increase in shoreline structure may alter fish communities. Intensive sampling of areas within the City of Kelowna indicated that areas with a significant increase in over-water structures (e.g. large marinas) tended to have an increased density of coarse fish (e.g., cyprinids), particularly juveniles (Schleppe and Arsenault, 2006). Thus, if changes in fish communities were to occur, it is most probable that changes would be reflected by an increase in the numbers of coarse fish aggregating around the structure. However, empirical evidence to suggest the latter is limited and more detailed studies are required to determine if changes in community structure occur as a result of over-water structures, and to what extent the size of structures affects fish community assemblages.

A possible attracting feature of docks and associated pilings is related to food-web interactions of prey fishes where fish commonly feed upon periphyton growing on pilings, and the insects and macro-invertebrates adhered to the dock and pilings (Carrasquero, 2001).

### 4.2.4 Predator-Prey Relationships

The effects of over-water structures on fish are widely recognized but have not been extensively examined (Carrasquero, 2001). Carrasquero (2001) found no studies examining mortality due to predation specifically associated with over-water structures. While the proposed dock may provide cover for prey, including kokanee and rainbow trout fry, it may also provide refuge for predators such as Northern pikeminnow, which commonly prey on juvenile salmonids. Thus, predicting specific impacts of this moorage on predator- prey relationships is difficult because of the lack of supporting empirical evidence. If impacts were to occur, it is thought that an increase in juvenile fish seeking predator refuge rather than predators seeking ambush cover would be observed because most fish species in Okanagan Lake are active foragers rather than ambush predators.

Given the high concentration of shoreline modifications in the area, including large-scale marinas, a public boat launch, retaining walls and a lack of riparian vegetation, it is unlikely that the dock expansion would alter predator-prey relationships and overall fish behaviour. Additionally, the dock expansion will only extend approximately 5.95 m into



Okanagan Lake beyond the wetted edge observed during the May 16 site visit; most of the dock extension will be located over the accreted sand beach, which remains above the wetted level during low water periods.

#### **4.2.5 Operation**

The operation and use of the proposed expansion to the existing single moorage should not result in additional impacts to aquatic resources, as the intensity of use will not change. In general, boat operations have the potential to result in an increase of contaminants and debris and disturbance to lakebed substrates. Impacts to lakebed substrates may be partially mitigated by the use of the boat lift to reduce prop wash and shading, and by positioning the end of the dock in deeper water. Refueling of small boats and personal watercraft by use of jerrycan has the potential to result in spills that may have adverse cumulative effects on aquatic life. That being said, the property owner has mentioned that all boat maintenance activities occur at Dockside Marine and boat refueling is conducted at the Eldorado gas bar located approximately 170 m to the north of the subject property.

### **5.0 PROJECT ACTIVITIES AND MITIGATION**

The following sections discuss project activities and proposed mitigation measures for construction, respectively.

#### **5.1 Project Activities**

Project activities associated with the proposed development include the following:

- Construction of an approximately 35 m dock expansion over approximately 14 untreated fir raised pilings; and,
- Movement and re-installation of one (1) boat lift.

Mitigation measures have been prepared for the above activities and will be discussed below.

#### **5.2 Mitigation Measures**

##### **5.2.1 Design and Construction**

The following presents design and construction recommendations to mitigate for potential environmental effects of the proposed moorage expansion:

- To minimize the cumulative effects of the proposed dock, in particular the shading and the potential creation of refuge for predators, all portions of the dock should be



as narrow as possible. The dock width is proposed to be 1.8 m, as indicated in Shoreline Pile Driving designs.

- To ensure adequate light penetration, the piles should be placed in such a way that the **underside of the dock is positioned no lower than 343.3 m above sea level**. This is 0.7 m above the mean annual HWL (342.6 m).
- No disturbance or alteration to foreshore or riparian areas is anticipated, nor should occur during construction, as all works will be conducted from the water and over the accreted sand beach.
- Only construction, modification, or maintenance works required to meet the moorage design specifications should be undertaken below the lake high water level. No foreshore filling, land reclamation, beach grooming, or disturbance of foreshore and riparian vegetation should occur both during and after dock construction.
- No dredging, blasting and or placement of fill below the lake high water level (343 m geodetic) should occur at any time during dock extension construction and maintenance activities.
- If cobbles and boulders occur within the piling footprints, which is unlikely, they should not be removed. If necessary, they should be relocated to an area immediately adjacent and of similar water depth following guidelines of the Department of Fisheries and Oceans Operational Statement for Construction of Docks in Freshwater Systems.
- Prevent the release of silt, sediment, or sediment-laden water, raw concrete or concrete leachate.
- Ensure that onsite machinery is in good operating condition, clean and free of leaks, excess oil or grease.
- No equipment refueling or servicing should be undertaken within 30 m of Okanagan Lake.
- A spill containment kit should be readily accessible on site in the event of the release of a deleterious substance. Immediately report any spill of a deleterious substance to the Provincial Emergency Program at 1-800-663-3456.
- Wooden pilings should be untreated. Wooden decking should be cut, sealed and stained away from water and completely dry before installed.
- Guidelines from the Department of Fisheries and Oceans Operational Statement for Construction of Docks in Freshwater Systems should generally be adhered to throughout all stages of construction, including construction from a floating barge,



minimizing vegetation disturbance, use of untreated pilings, use of clean machinery, etc.

### 5.2.2 Timing

Timing windows ensure that instream works avoid causing harm to spawning habitat, fish eggs and juvenile fish, while also preventing impacts to adults and juveniles that may be migrating, over-wintering, or rearing (MWLAP, 2004). Works may proceed outside of the instream timing window provided there is a technical rationale by an appropriately qualified professional. This rationale should demonstrate that there would be no increased risk to fish and wildlife populations and habitats as a result of the proposed works (MWLAP, 2004).

The reduced risk work window for Okanagan Lake near a kokanee spawning stream is July 22<sup>nd</sup> to August 24<sup>th</sup> and October 15<sup>th</sup> to April 1<sup>st</sup>. This window is designated to minimize impacts to stream spawning kokanee and rainbow trout during staging and migration.

### 5.2.3 Operation

The following recommendations are presented to minimize impacts of operation of the moorage on fish and/or their habitats:

- The duration of the moorage license of occupation should be a total of 10 years, which will allow re-evaluation and possibly further data collection on a regional scale to determine the effects of moorages. At the end of this 10-year term, the terms of occupancy should be reassessed to ensure that shoreline use and operation have not caused undue harm to riparian and aquatic habitats.
- No beach grooming, addition of sand, or removal of cobbles/boulders should occur at any time. Importing fine substrates (i.e., sand) would constitute a Harmful Alteration Disruption or Destruction of fish habitat, a federal offense under Section 35 of the Fisheries Act.
- To mitigate potential long term operational impacts associated with private refueling and vessel maintenance, an emergency spill containment kit should be readily available and stocked with standard items designed for containment and absorption of hydrocarbons. This should ideally be located on the dock itself and could be kept in a storage bench.

### 5.2.4 Construction Monitoring

An environmental monitor should be retained to document compliance with the above recommendations and to provide guidance for implementation of operational best practices during construction (i.e. pile driving, erosion and sediment control, control of deleterious substances). The environmental monitor should be authorized to halt construction





activities should an incident arise that is causing undue harm (unforeseen or from lack of due care) to aquatic and riparian resource values.

## 6.0 CONCLUSION

This report pertains to existing and potential site conditions with respect to aquatic and riparian habitats in relation to the proposed moorage expansion. The subject property is located in an urban residential/commercial area where extensive modifications to the shoreline have occurred, including docks, a public boat launch, marinas and complete removal of riparian vegetation. Based upon our site visit, and data gathered and reviewed, the proposed moorage expansion is unlikely to have any significant environmental impacts to aquatic and riparian communities, shoreline access, sediment transport or deposition, local substrate characteristics or habitats critical for fish or wildlife. Further, the proposed moorage extension will result in the land owner being able to use their moorage as it was intended because accretion in front of their lot has resulted in creation of a beach area, rendering their moorage and boat lift unusable.

## 7.0 CLOSURE

This letter has been prepared for the exclusive use of Charles Fipke and Cory Boniface. It has been prepared based upon information provided to Ecoscape regarding the subject property and proposed moorage extension. Ecoscape assumes that the provided information is accurate and has been disclosed in order to prepare the above impact assessment and recommendations. Charles Fipke and Cory Boniface have acknowledged that in order for Ecoscape to properly provide the professional service, Ecoscape is relying upon full disclosure and accuracy of this information.

If you have any questions or comments, please contact the undersigned at your convenience.

Respectfully Submitted  
ECOSCAPE ENVIRONMENTAL  
CONSULTANTS LTD.

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## PHOTOGRAPHS



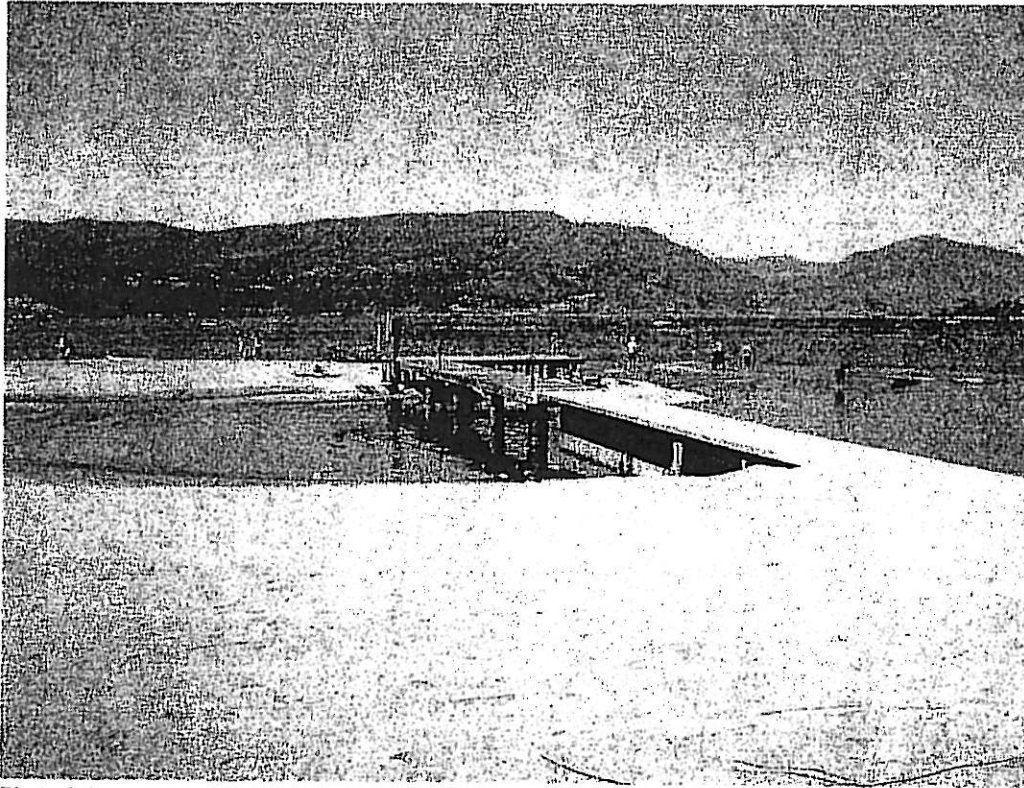


Photo 1: Looking west towards the existing L-shaped dock along the foreshore of the subject property. Recreational beach users are visible, as is the accretion of sand beyond the existing structure

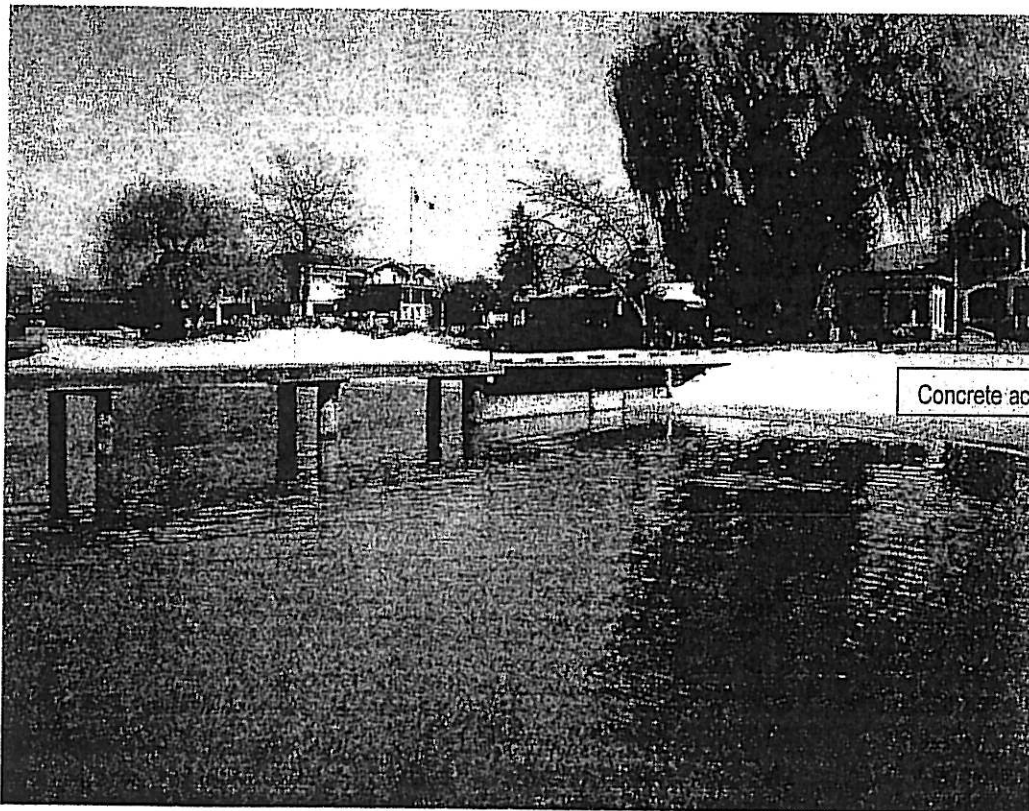


Photo 2: Looking north towards the existing dock and concrete access ramp which extends approximately 26.4 m from the fenced yard of the subject property to the wooden decking. A concrete wall supports the access ramp and occurs within Okanagan Lake.





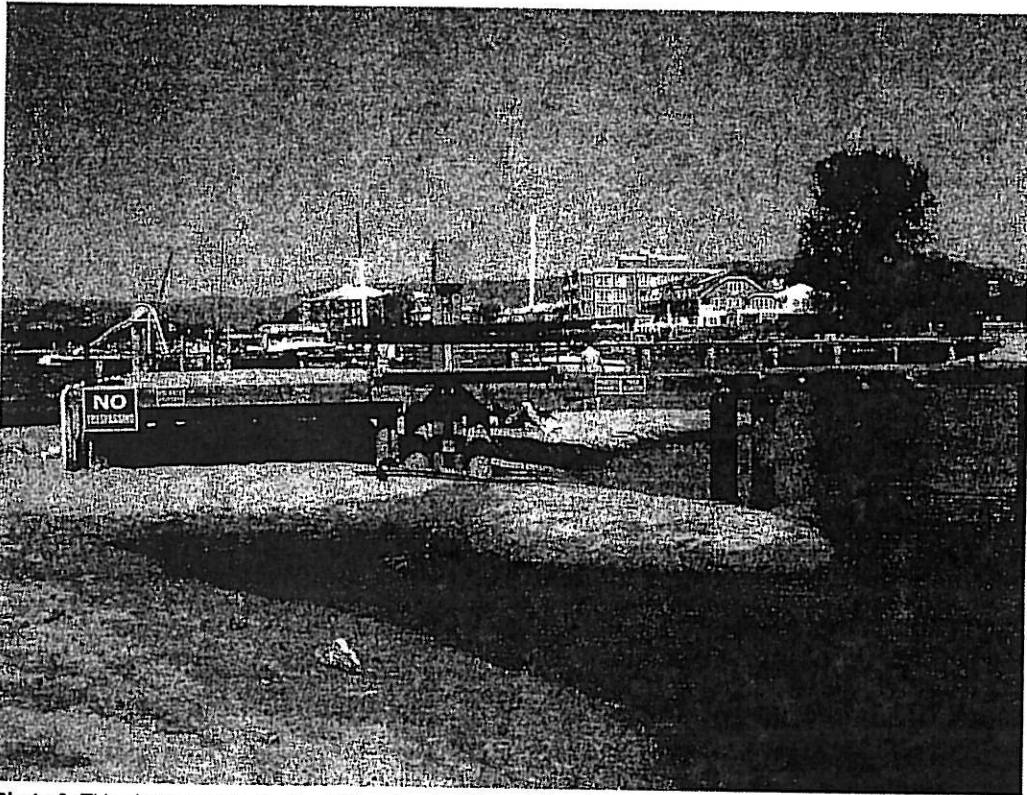


Photo 3: This photo depicts the boat lift and end of the existing dock. Note that both occur over an accreted sand beach; the end of the dock was approximately 0.75 m above the sand during the May 16 site visit.

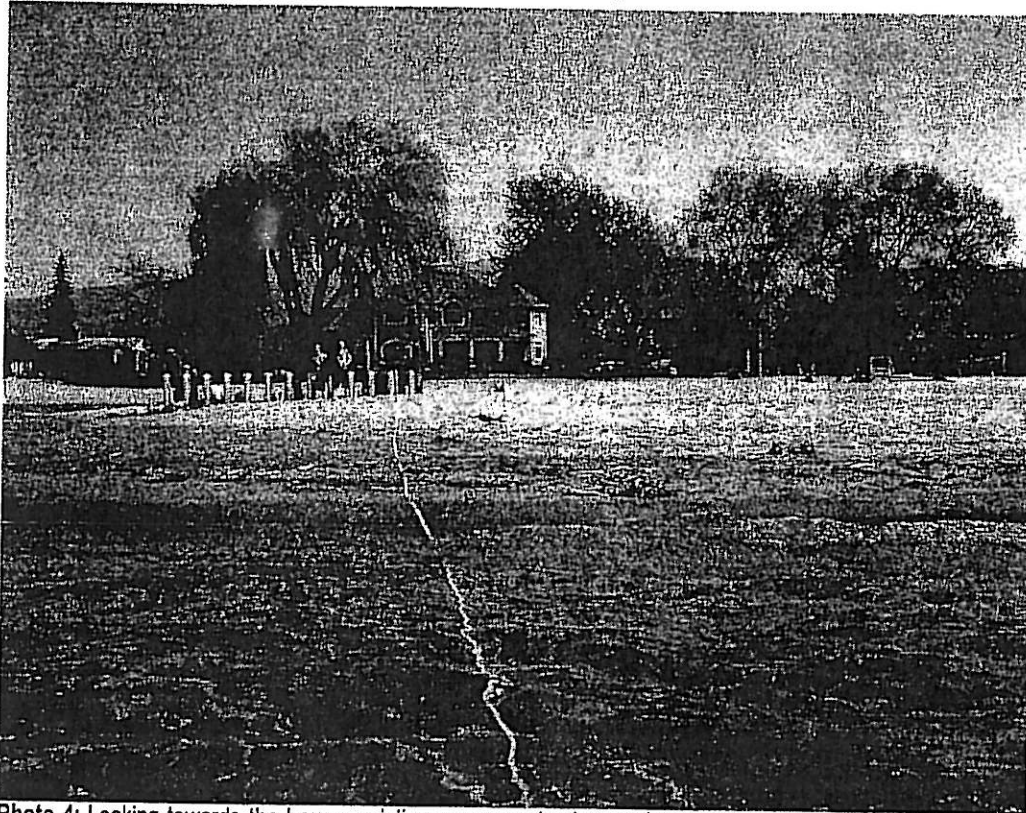
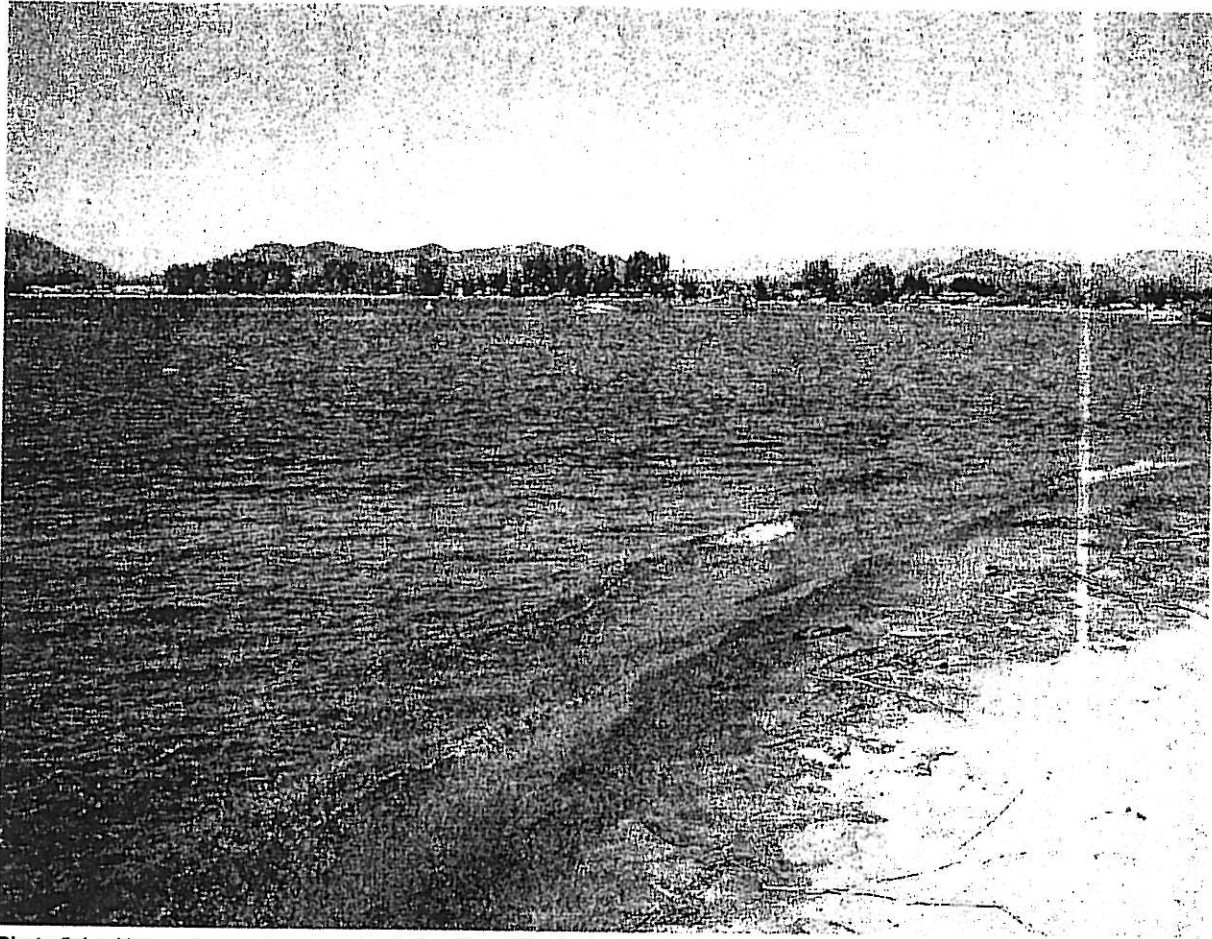
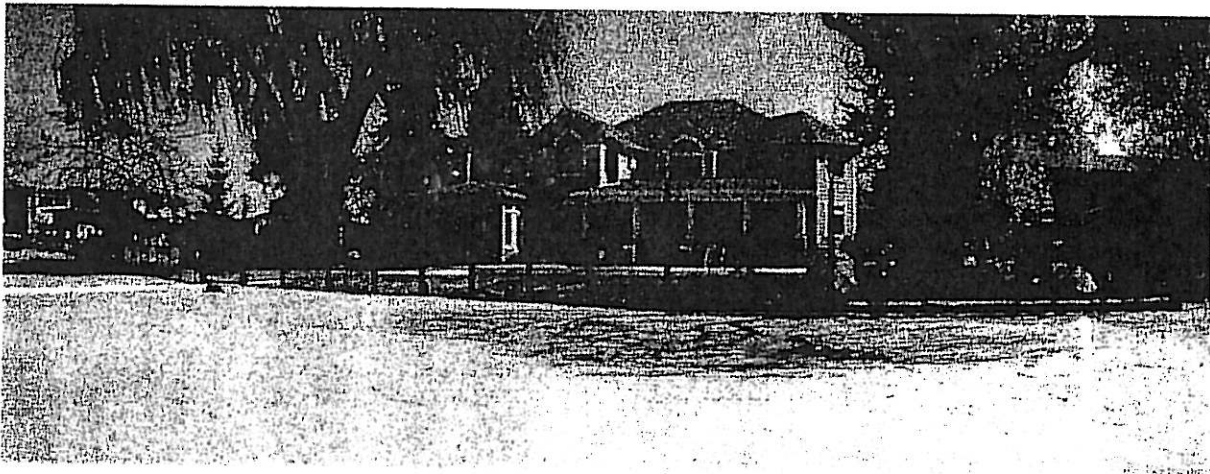


Photo 4: Looking towards the house, existing moorage structure and accreted sand beach from the approximate location of the dock extension. The end of the dock was located approximately 5.95 m from the wetted edge of Okanagan Lake during site visit.



**Photo 5:** Looking north over the approximate location of the dock extension. The end of the dock will be located 35 m from the existing dock over deeper water. The depth during the May 16 site visit was 0.91 m.



**Photo 6:** Looking towards the single family dwelling that occurs on the subject property and the modified riparian area. There are 2 large Pacific willows, but the riparian area has otherwise been extensively modified, consisting of manicured turf and horticultural species.



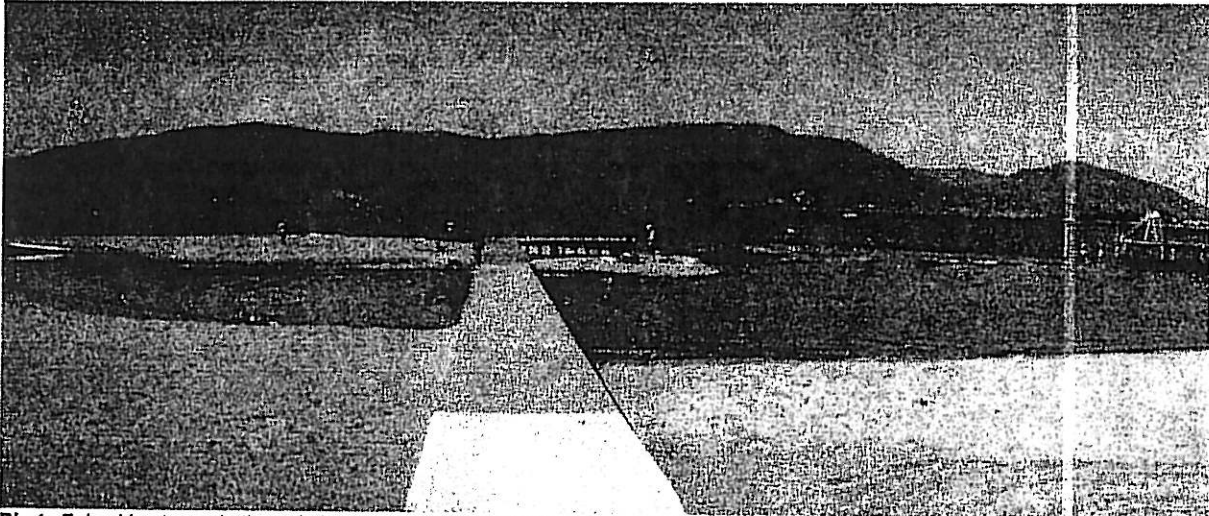


Photo 7: Looking towards the existing moorage and accretion of sand that has occurred beyond the moorage, adjacent the subject property.

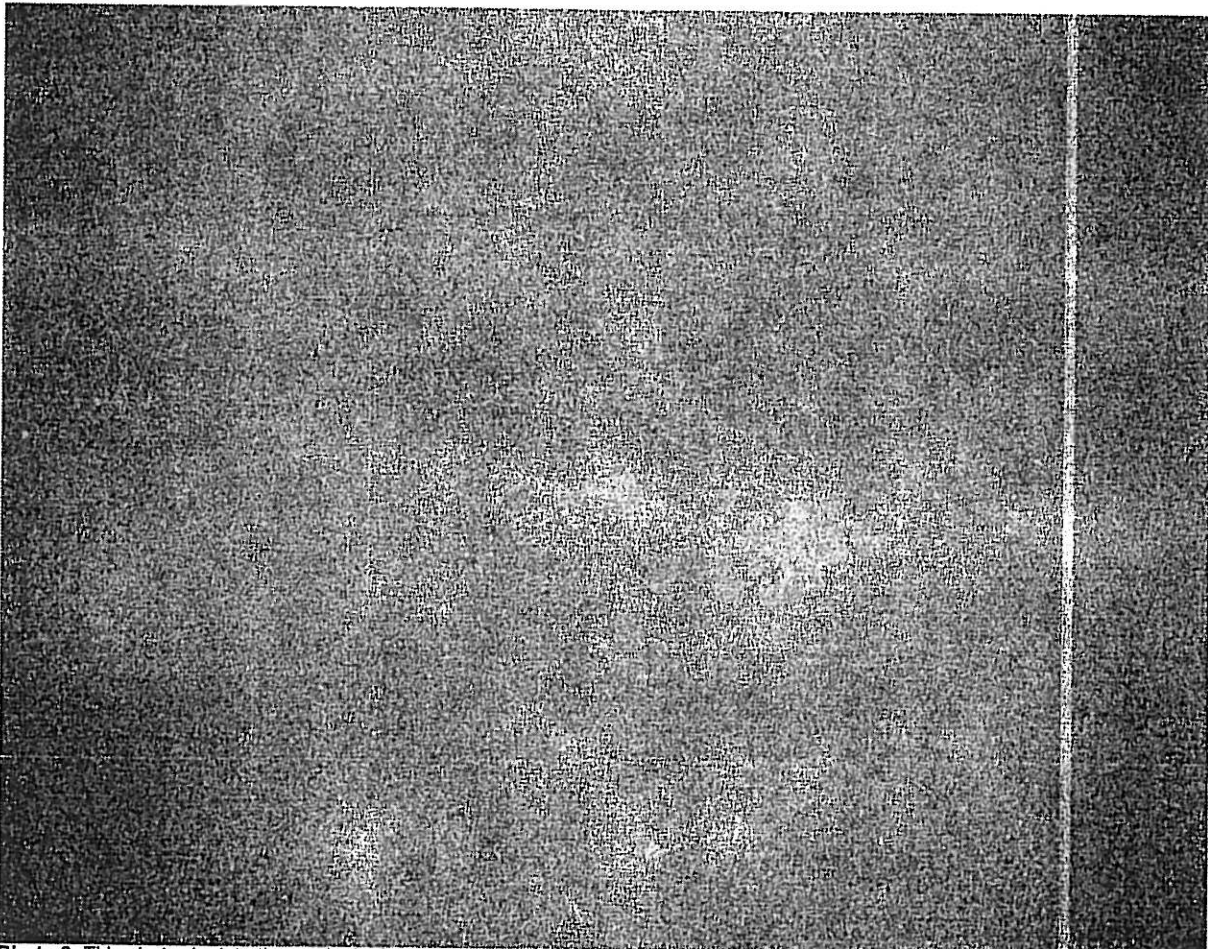


Photo 8: This photo depicts the exclusively fine substrates noted along the entire length of the transect in the location of the proposed dock extension.

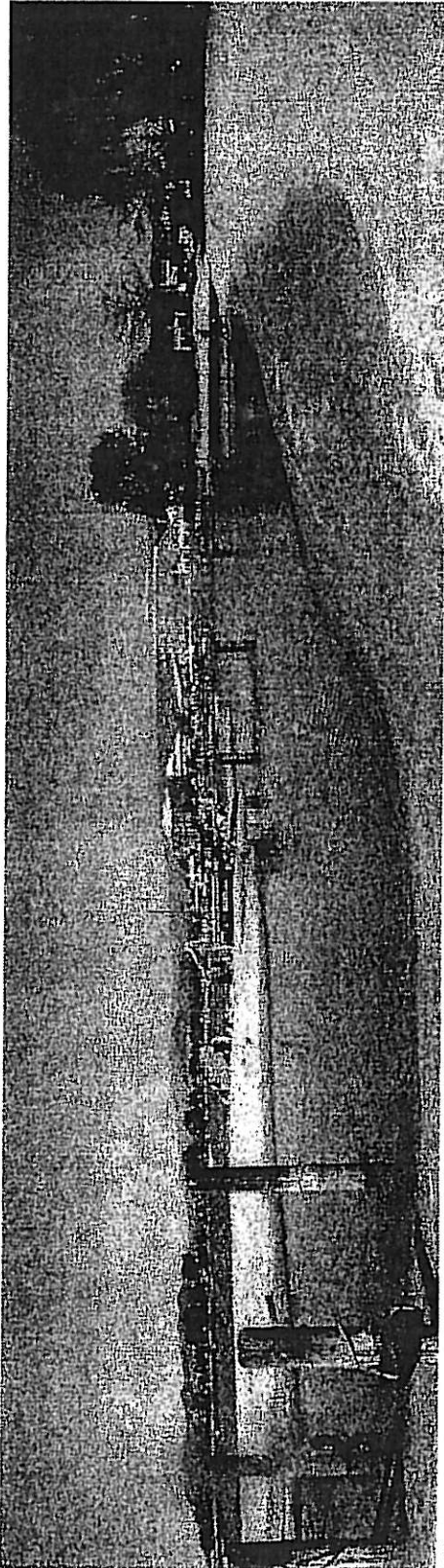
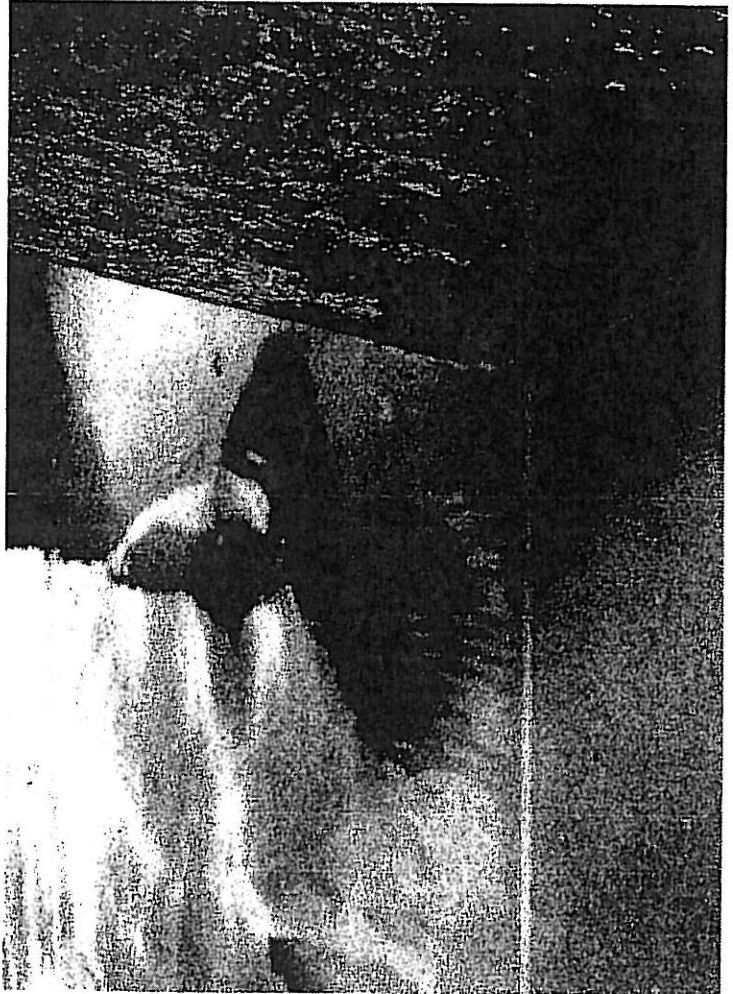


Photo 9: Looking over the stagnant lagoon that has formed due to accretion of sand and backwatering. Sediments in this area were fine with sand and organics. The existing dock and sand beach are evident in this photo.

Photo 10: This photo depicts a large carp which was observed swimming near the wooden pilings and concrete wall of the existing moorage structure.





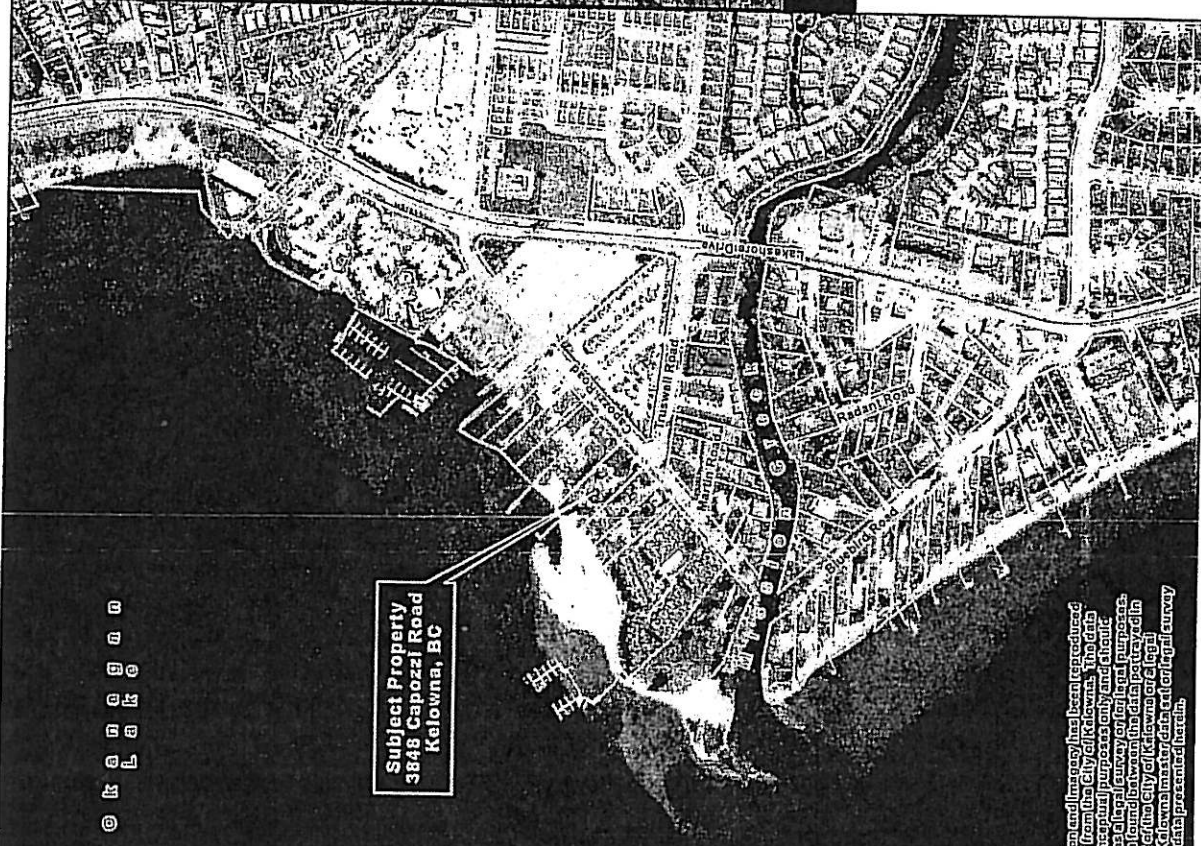
## FIGURES



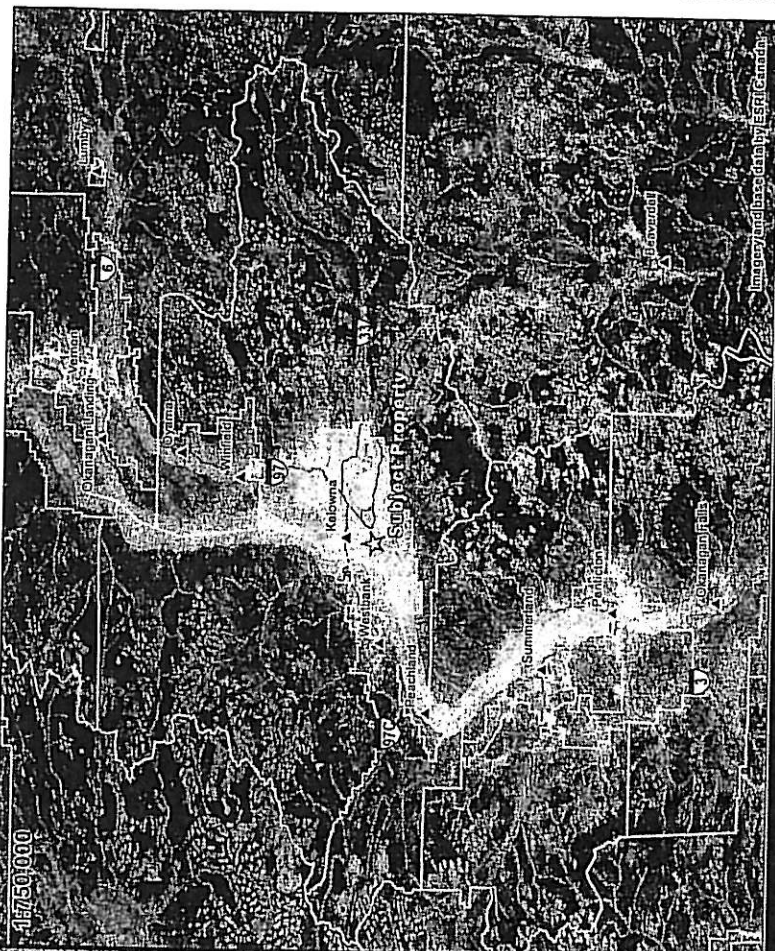
1:5,000

© B L A K E

Subject Property  
3848 Capozzi Road  
Kelowna, BC



1:750,000

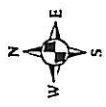


**FIGURE 1**  
Site Location

Project: Environmental Assessment - Proposed Moorage Extension  
 Location: City of Kelowna  
 Project No.: 08-274  
 Prepared for: Cary Bonifas / Charles Fipke  
 Ecoscope Environmental Consultants Ltd.  
 Drawn by: Robert Wagner  
 Checked by: Jason Schleppe  
 Projection: NAD83-UTM Zone 11  
 Date: May 26, 2008

**LEGEND**

- ☆ Subject Property
- Subject Property Boundary
- Municipal Boundary
- City of Kelowna
- Catastre
- Transportation
- Streams and Rivers
- Water Lake



**DISCLAIMER**  
 Cadastral information and imagery has been reproduced from data obtained from the City of Kelowna. The data displayed is for conceptual purposes only and should not be interpreted as a legal survey or for legal purposes. If discrepancies are found between the data portrayed in this report and that of the City of Kelowna or a legal survey, the City of Kelowna master data or a legal survey will supersede any data presented herein.

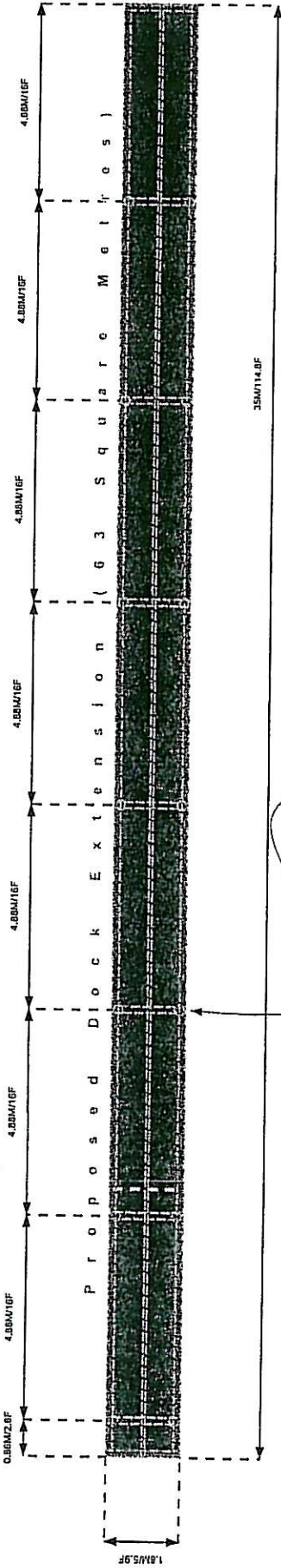






O K L A K E

E X I S T I N G  
D O C K



**FIGURE 3**  
Dock Design

0.3 Metre Diameter Fir Piles  
(The number of piles required may be adjusted based on structural requirements)

**REVISED PLANS**  
(SEE SCHEDULE "A")

Project: Environmental Assessment - Proposed Moorage Extension  
 Location: City of Kelowna  
 Project No.: 08-274  
 Prepared for: Cery Bonifacia / Charles Fipke  
 Prepared by: ECOSCAPE Environmental Consultants Ltd.  
 Drawn by: Robert Wagner  
 Checked by: Jason Schlegel  
 Projection: NAD83-UTM Zone 11  
 Date: May 20, 2008

**LEGEND**

- Proposed Dock Extension
  - 0.3 Metre Fir Piles
  - Existing Dock
  - Beams
- Approximate Accrued Sand Beach Observed on May 16, 2008



**Note:** The High Water Level was estimated using photos and airphotos. The High Water Level should be field verified and surveyed by a land surveyor for actual locations.

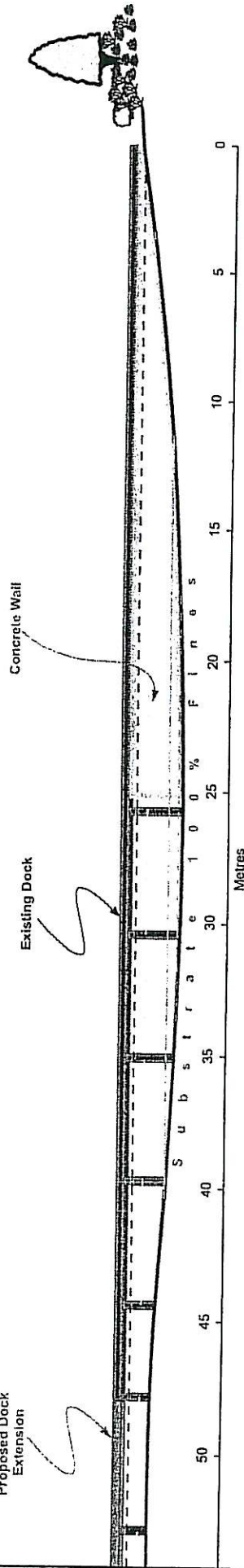
**Disclaimer:**  
This is a conceptual drawing and should not be used for construction. Other engineering or structural designs may be required.



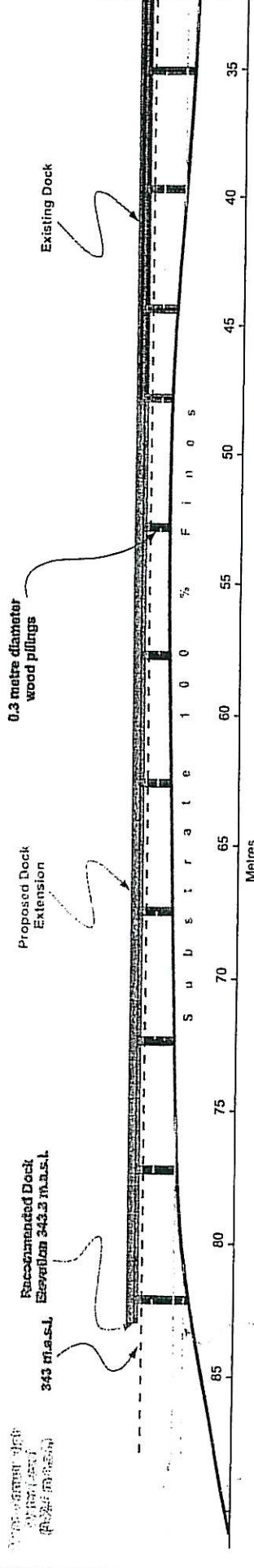




Proposed Dock Extension



Proposed Dock Extension



**FIGURE 5**  
**Profile of Existing Dock and Proposed Extension**

Project: Environmental Assessment - Proposed Moorage Extension  
 Location: City of Kelowna  
 Project No.: 06-274  
 Prepared for: Cory Bonifacio / Charles Pipke  
 Ecoscope Environmental Consultants Ltd.  
 Drawn by: Robert Wagner  
 Checked by: Jason Schlegel  
 Projection: NAD83-UTM Zone 11  
 Date: May 26, 2008

Scale: 1:150  
 0 5 10 Metres

**REVISED PLANS**  
 (SEE SCHEDULE "A")

343 m.a.s.l.  
 Elevation 343.3 m.a.s.l.

**Disclaimer:**  
 This is a conceptual drawing and should not be used for construction. Other engineering or structural designs may be required.

## APPENDIX A



## Fisheries and Oceans Canada

### Project Review Information Requirements for Works Affecting Fish Habitat

The information Proponents provide on this form is the minimum necessary for Fisheries and Oceans Canada to evaluate compliance with the Federal Fisheries Act.

1. **Proponent:** Charles Fipke  
Address: 3848 Capozzi Road  
City: Kelowna  
Postal code: V1W 3L2 Contact: Cory Boniface  
Telephone: (250) 863-1640 Fax: N/A  
E-mail: corydownunder2003@yahoo.com
  
2. **Project title:** 3848 Capozzi Road Yellow Zone Moorage Assessment
  
3. **Location of works:**  
Regional district/ land use authority: City of Kelowna  
City/ municipality: Kelowna  
Street address of pertinent property: 3848 Capozzi Road  
Complete legal description of all lands affected by changes: Lot A, Plan 13822, Sec. 1, Twp. 25, ODYD  
Watercourse name: Okanagan Lake  
Location on watercourse: Western Shoreline - approximately 235 m north of confluence of Mission Creek and Okanagan Lake  
What watercourse/ waterbody does it flow into? Okanagan River Channel
  
4. **Agent(s) name:** Shoreline Pile Driving  
Address: PO Box 20253  
City: Kelowna, BC  
Postal code: V1Y 2M2  
Contact: Bob Jones  
Telephone: (250) 769-7694 Fax: \_\_\_\_\_  
E-mail: bob\_jones@telus.net
  
5. **Environmental Monitor:** Ecoscape Environmental Consultants Ltd.  
Address: #102 - 450 Neave Court  
City: Kelowna, BC  
Postal code: V1V 2M2 Contact: Jason Schleppe  
Telephone: (250) 491-7337 X202 Fax: (250) 491-7772  
E-mail: jschleppe@ecoscapeltd.com



**6. Proposed timing:**

Start (day/month/year): 01.07.2008

Finish (day/month/year): 30.09.2008

**7. Notification to Ministry of Environment (MoE):**

Has MWLAP been notified of the proposed works?  Yes  No

Other Ministry or Agency (specify) Front Counter BC

**8. Tenure to land:**

Registered owner  Lessee

Other (specify) \_\_\_\_\_

**9. Restrictive covenant on property?**

Yes  No

**The following information should be prepared by qualified professionals and must be attached for review of the project:** See Attached Report (Ecoscape Environmental Consultants Ltd.)

**10. Written rationale for the proposed works, including:**

- Confirmation that the proposed works are necessary and that no alternatives exist that would reduce or eliminate potential impacts to fish and fish habitat.
- Confirmation that the works are permitted under local by-laws, zoning, etc.

**11. Description of proposed activities, including:**

- Detailed description of proposed works including how works are to be carried out and what machinery will be used.
- Clearly marked and detailed drawings of the proposed works (to scale).
- Detailed description of all materials to be used. Note the placement of materials and/or structures in and around watercourses must be consistent with DFO regulations, standards, policies and guidelines.

**12. Description of existing fish and fish habitat, including:**

- Fish presence and distribution.
- Fish habitat assessment (instream and riparian).
- Hydrological information.

**13. Fish habitat impact assessment, including:**

- Potential impacts to fish and fish habitat.
- Identification of the nature, magnitude, duration (permanent and temporary) and location of impacts.

**14. Mitigation proposed, including:**

- A description of all actions, including contingency plan(s), that will be taken to avoid, reduce or eliminate the impacts outlined above.
- Sediment, runoff and erosion control plans, which emphasize minimizing disturbances and source control.

- Vegetation disturbance replacement/ remediation plan.
- 15. Habitat compensation plans** (If the project is likely to cause the harmful alteration, disruption or destruction (HADD) of fish habitat, the qualified professional should meet with the DFO habitat practitioner prior to developing the compensation plan to assess if the HADD is likely to be acceptable, and options for mitigation and compensation).
- Fish habitat compensation plan must be consistent with *The Department of Fisheries and Oceans Policy for the Management of Fish Habitat* (1986) and *A Decision Framework for the Determination and Authorization of Harmful Alteration, Disruption or Destruction (HADD) of Fish Habitat* (1998).
  - Written approval from all affected landowners.
  - Area based habitat balance (i.e. impacted vs. compensatory habitat, sufficient to demonstrate no net loss of productive capacity).
  - Itemized cost of compensation (including construction, planting and monitoring (during and post-construction)).

**16. Maps**

- Small scale overview location map (approx. 1:20,000)
- Detailed large scale map(s) of the site (1:500 or larger) indicating:
  - Location of proposed works in relation to all watercourses within the property.
  - Location of any designated parks, environmentally sensitive areas, restrictive covenant areas, etc.
  - Location of major streets.
  - Delineation of proposed riparian vegetation removal and instream work areas.

**17. Photographs**

- Detailed photographs of the site, taken from a variety of perspectives, appropriately marked to clearly display:
  - The proposed work area including any riparian vegetation and instream areas to be disturbed.
  - The proposed area of compensation for habitat losses associated with the proposed works.

*It is understood that the completion of this form does not constitute approval or authorization under the Federal Fisheries Act.*

Signed: \_\_\_\_\_  
(Proponent/ Agent)

Date: \_\_\_\_\_

- Note:**
- Please complete each section. All incomplete submissions will be returned unprocessed.
  - Policy and guideline documents are available on line at:  
[http://www-heb.pac.dfo-mpo.gc.ca/publications/publications\\_e.htm](http://www-heb.pac.dfo-mpo.gc.ca/publications/publications_e.htm); and,  
[http://www.dfo-mpo.gc.ca/canwaters-eauxcan/infocentre/index\\_e.asp](http://www.dfo-mpo.gc.ca/canwaters-eauxcan/infocentre/index_e.asp)

**Project Review Information Requirements should be submitted to<sup>1</sup>:**

Clearwater  
Box 610-1121 E. Yellowhead Hwy  
Clearwater, BC  
V0E 1N0  
Tel: (250) 674-2633  
Fax: (250) 674-3553

Kamloops  
985 McGill Place  
Kamloops, BC  
V2C 6X6  
Tel: (250) 851-4950  
Fax: (250) 851-4951

Lillooet  
Box 315 - 654 Industrial Place  
Lillooet, BC  
V0K 1V0  
Tel: (250) 256-2650  
Fax: (250) 256-2660

Nelson  
112 McDonald Drive  
Nelson, BC  
V1L 6B9  
Tel. (250) 352-0891 or (250) 352-0892  
Fax. (250) 352-0916

Prince George  
3690 Massey Drive  
Prince George, BC  
V2N 2S8  
Tel: (250) 561-5366  
Fax: (250) 561-5534

Quesnel  
1205 North Cariboo Hwy, #97  
Quesnel, BC  
V2J 2Y3  
Tel: (250) 992-2434  
Fax: (250) 992-7232

Salmon Arm  
Box 1160, 1751-10th Ave SW  
Salmon Arm, BC  
V1E 4P3  
Tel: (250) 804-7000  
Fax: (250) 804-7010

Williams Lake  
310A North Broadway  
Williams Lake, BC  
V2G 2Y7  
Tel: (250) 305-4002  
Fax: (250) 305-3017

1. Continue to make submissions to your current DFO contact. If you do not have a current contact, submit to your local DFO office.

## APPENDIX B





QEP checklist for foreshore works

	Yes	No	N/A	Comments
Has redesign or relocate been applied as the first option to avoid a higher risk area? If yes list pages where this is documented.		X		The dock has not been redesigned or relocated; however, it has been extended over the accreted sand beach and is only long enough to allow the relocated boat lift to be in deeper water. Substrates in this area are exclusively fine sediments and are not considered to be a high risk area in terms of sensitive fisheries habitat.
Has there been preservation of aquatic habitat and riparian habitat in relation to existing or potential fish use as part of the design plan?	X			The dock has been designed at a width of 1.8 m to minimize shading. Additionally, it will be raised on untreated fir pilings and the boat lift that is now over sand beach is being relocated, which will minimize prop wash, shading and substrate disturbance.
Has there been a review of existing species data?	X			Ministry of Environment Shore Spawning Data, Regional District Central Okanagan Foreshore Inventory Mapping, Kelowna Shore Zone Fisheries and Wildlife Habitat Assessment (Schleppe and Arsenault, 2006)
Are there known occurrences of species at risk and/or regionally important wildlife at this site or the surrounding area?	X			Great Blue Heron, Western Grebes and others have been observed foraging on Okanagan Lake
Has SEI or foreshore inventory data been used to assess risks to species and habitats?	X			Foreshore inventory data was utilized to assess the sensitivity/value of spawning habitats. No wildlife inventories or reviews were completed as project occurs in a highly modified area of shoreline used for recreation and residential use. Extension of the existing dock is not anticipated to impact wildlife.
Has any additional inventory for high risk habitats or species been carried out?		X		

QEP checklist for foreshore works

Where the upland has been identified as an Environmental Development permit area or riparian DP, are there confirmed environmentally sensitive features or sensitive ecosystems on the site?		X		No significant terrestrial environmentally sensitive features were identified near the location of the proposed moorage or on the subject property. Upland areas are landscaped with turf grass and ornamental shrubs and a single family dwelling occurs on the subject property – the riparian area has been highly modified.
Are there measures to ensure preservation of wildlife habitat, species at risk and their habitats?	X			No vegetation clearing or other types of activities are expected that could impact riparian areas or fish and wildlife habitat.
Have local soil and foreshore substrate characteristics been described?	X			Section 3.2 – Fisheries Resources
Has there been an assessment of local shoreline and stream mouth accretion/erosion dynamics, including local water currents and associated patterns of sediment transport and deposition and changes to these processes as a result of the structure or works? If N/A explain.	X			A study was completed on a property to the south of the confluence of Mission Creek and Okanagan Lake which was referenced for this report. Additionally, Ecoscape understands that extensive studies have been completed in association with a large scale development to the north of the subject property (this report was not obtained in the assessment of the private moorage extension).
Has the existing lakeshore morphology been described and potential impacts or changes from the structure or works identified?	X			Biological aspects of the existing lakeshore were described in the Foreshore Inventory and Mapping by the Regional District Central Okanagan. Additionally, site specific biophysical information is found within Section 3.0 and potential impacts are identified in Section 4.0.
Has the potential access related disturbances from machinery or other equipment been considered?	X			Machinery will access by barge only.

QEP checklist for foreshore works

Has the ability to access and repair works in the future with minimal disturbance been considered?	X			The standard dock design allows maintenance/repairs.
Will the construction of the works result in potential long term water quality issues?		X		No impacts are anticipated, as all wood is untreated. Potential operational impacts and recommendations are identified in sections 4.0 and 5.0, respectively.
Have least risk timing windows been applied?	X			Timing windows are addressed in Section 5.2.2 Timing
Is there a plan to deal with potential erosion or sediment releases resulting from proposed works?	X		X	No erosion or sediment issues are expected, but an Environmental Monitor is recommended to document best management practices.
Has the design minimized the footprint of the works and associated foreshore disturbance?	X			Dock has been constructed at a width of 1.8 m along its entire length.
Has the design minimized the direct, indirect and cumulative impacts to riparian vegetation?			X	The riparian area has been highly modified and no disturbance to vegetation within the fenced yard of the subject property is anticipated.
Has the design minimized the direct, indirect and cumulative impacts fish and wildlife individuals, populations, species and habitats;	X			The moorage was designed in a manner that extends the existing moorage at a width of 1.8 m and relocates the existing boat lift rather than increasing the capacity of the single moorage.
Are the foreshore works associated with an upland RAR assessment? If yes list RAR assessment #		X		This assessment pertains to a moorage only.
If yes has the RAR assessment included provisions for foreshore access?			X	
Has the design avoided a HADD?			X	Report to be submitted to Ministry of Environment and Department of Fisheries and Oceans for HADD determination. However, if mitigation strategies are adhered to, the QEP does not anticipate a HADD.
If the works have resulted in a HADD, has the project received a letter of advice or authorization from DFO?		X		Awaiting conformation from DFO and/or MoE.

QEP checklist for foreshore works

Are there provisions in place to ensure that protective measures and BMP's will be followed? If yes please reference pages in EIA.	X			Section 5.0 – Project Activities and Mitigation
Does the plan include mitigation measures?	X			Mitigation works are associated with dock design and operation.
Does the plan clearly outline and illustrate where mitigation works will take place?	X			Mitigation incorporated into the design and construction, timing, operation and construction monitoring.
Are there clear objectives and measurable outcomes for mitigation measures to enable effective monitoring for compliance with the design plan?	X			Recommendations are clearly outlined, including recommendation of an Environmental Monitor to ensure mitigation strategies are being adhered to.
Are there provisions for monitoring to ensure the completed works function as expected over time?	X			An environmental monitor is recommended to document construction activities, and the QEP has recommended a 10-yr licence of occupancy.

I confirm that all information provided in this checklist is to the best of my professional knowledge true and complete.



Original signature of Qualified Professional

1795

Professional Association #

May 20, 2008

Date



---

**CITY OF KELOWNA**  
**MEMORANDUM**

---

**Date:** January 6, 2009  
**File No.:** DP08-0257 DVP08-0259

**To:** Planning & Development Services Department (AW)

**From:** Development Engineering Manager

**Subject:** 3848 Capozzi Road  
Shoreline Pile Driving

Plan 13822 Lot A  
Extend Existing Dock

---

Development Engineering has the following requirements associated with this development application. The road and utility upgrading requirements outlined in this report will be a requirement of this development.

The Development Engineering Technologist for this project is John Filipenko. ASCT

1. Development Permit and Site Related Issues

- (a) The development variance permit to vary the dock length from 40 meters allowable, to 63 meters proposed, does not compromise Works and Utilities requirements.
- (b) The environmental ramifications of new and existing features including pile driving within Okanagan Lake must be considered. Development Engineering will defer comment on those issues to the City Environment Manager and the Provincial Government


---

Steve Muenz, P. Eng.  
Development Engineering Manager  
JF/jf

June 24, 2008

As requested in our Dock Extension Application (Private Moorage Variance Request), we must obtain five signature's from our closest waterfront property owners, stating their opinion to us extending our current dock so it will extend past the sandbar, and re-locating our boat lift to deeper water so we are able to use it as intended.

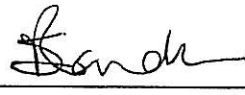
If you have no objections to our proposed dock extension, could sign and date this request.

1. Name / Address (print) MARY ANN BISHOP (sign)   
Date JUNE 26/08, 3854 TRUSWELL Rd.


I, the above signed, do not object to the property owners of 3848 Capozzi Rd. extending their private dock, and re-locating their boatlift.

2. Name / Address (print) LOIS C. BUTLER (sign)   
Date JUNE 27/08, 3858 TRUSWELL RD.

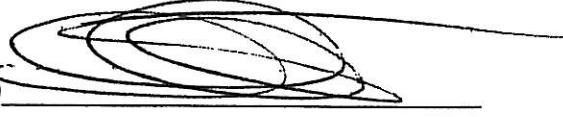
I, the above signed, do not object to the property owners of 3848 Capozzi Rd. extending their private dock, and re-locating their boatlift.

3. Name / Address (print) Sue Randhawa (sign)   
Date JULY 3<sup>rd</sup> / 08, Capozzi Rd.

I, the above signed, do not object to the property owners of 3848 Capozzi Rd. extending their private dock, and re-locating their boatlift.

4. Name / Address (print) PHYLIS C. TOSTENSON (sign)   
Date JULY 3 / 2008, 3858 Capozzi Rd. V1W 3L2

I, the above signed, do not object to the property owners of 3848 Capozzi Rd. extending their private dock, and re-locating their boatlift.

5. Name / Address (print) BOB BESSETTE (sign)   
Date JULY 15 / 08, 3880 Trusswell Rd.

I, the above signed, do not object to the property owners of 3848 Capozzi Rd. extending their private dock, and re-locating their boatlift.

Thank you,

Cory Boniface / Charles Fipke  
3848 Capozzi Rd.  
Kelowna, B.C.  
V1W 3L2