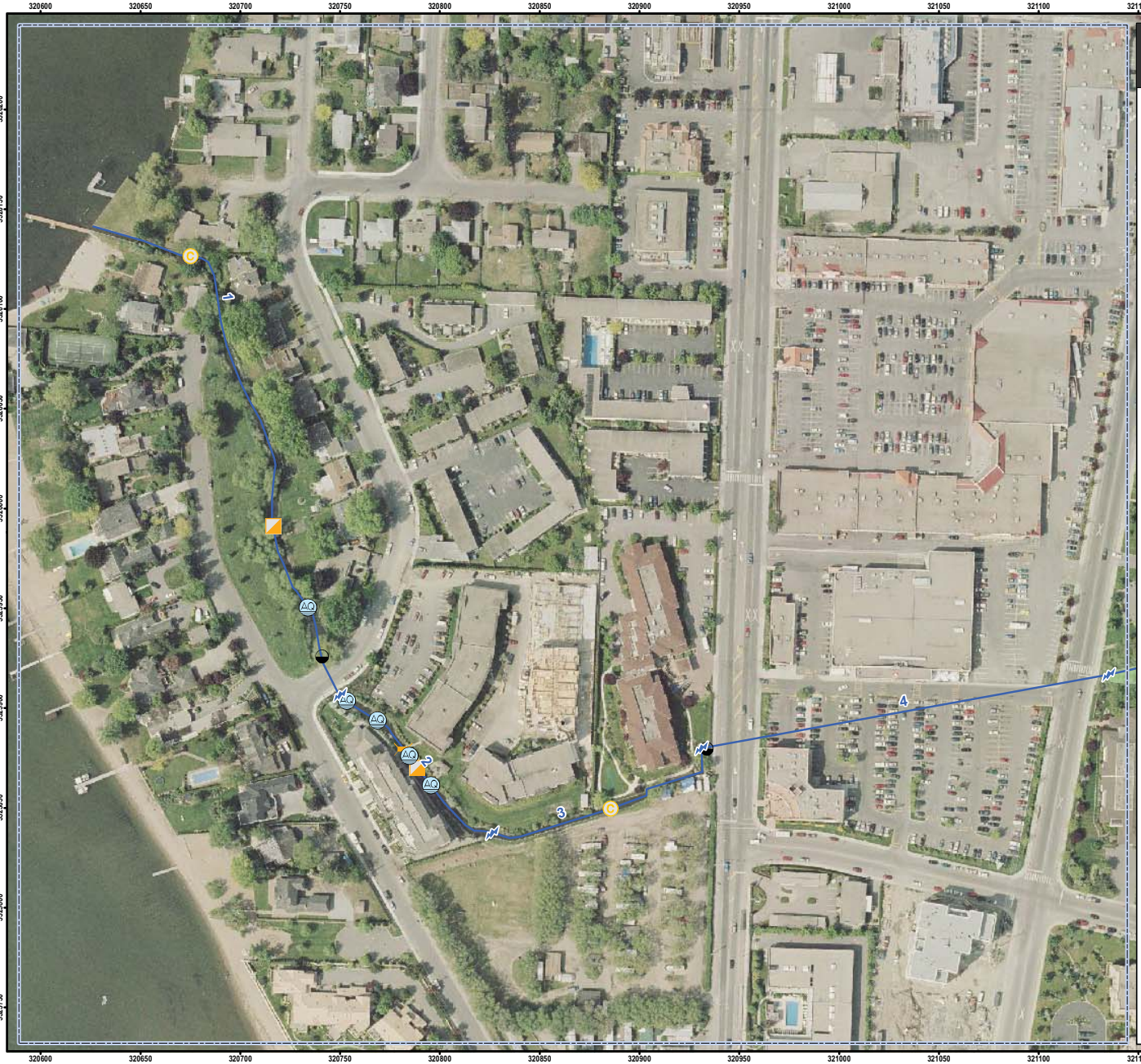


FASCIEUX CREEK

Segments 1-4

Project:	Sensitive Habitat Inventory and Mapping (SHIM)
Location:	Kelowna, BC
Project No.:	06-054
Prepared for:	City of Kelowna
Prepared by:	Ecoscape Environmental Consultants Ltd.
Drawn by:	RW
Checked by:	KH
Projection:	NAD83-UTM Zone 11
Date:	January, 2007

30 15 0 30 60 90 Meters

1:2,000

N W E S

LEGEND

- Stream centreline
- Segment break
- Culvert
- Discharge
- Enhancement
- Erosion

Obstruction
- Beaver Dam

Waterbody
- Ditch

Wildlife
- Beaver

Wetland
- Shallow open water
- Marsh

Modification
- Bridge
- Channelization
- Dam / Flood gate
- Ditch
- Fences
- Other
- Pipe crossing
- Retain wall / Bank stability
- Water Withdrawal

SOURCE INFORMATION

Base Map:	82E.083 Kelowna
Orthophoto:	2003, provided by City of Kelowna
Stream Information:	Field Inventory
Location Information:	Field, GPS (Trimble GEO XM & XT)
Feature Information:	Field Inventory
Date of Inventory:	2006/12
Inventory Management:	Kyle Hawes, R.P.Bio.



City of Kelowna

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Environmental Consultants Ltd.



FASCIEUX CREEK

Segments 5-6

Project:	Sensitive Habitat Inventory and Mapping (SHIM)
Location:	Kelowna, BC
Project No.:	06-054
Prepared for:	City of Kelowna
Prepared by:	Ecoscape Environmental Consultants Ltd.
Drawn by:	RW
Checked by:	KH
Projection:	NAD83-UTM Zone 11
Date:	January, 2007

30 15 0 30 60 90 Meters

1:2,000

N W E S

LEGEND

- Stream centreline
- Segment break
- Culvert
- Discharge
- Enhancement
- Erosion

Obstruction
- Beaver Dam

Waterbody
- Ditch

Wildlife
- Beaver

Wetland
- Shallow open water
- Marsh

Modification
- Bridge
- Channelization
- Dam / Flood gate
- Ditch
- Fences
- Other
- Pipe crossing
- Retain wall / Bank stability
- Water Withdrawal

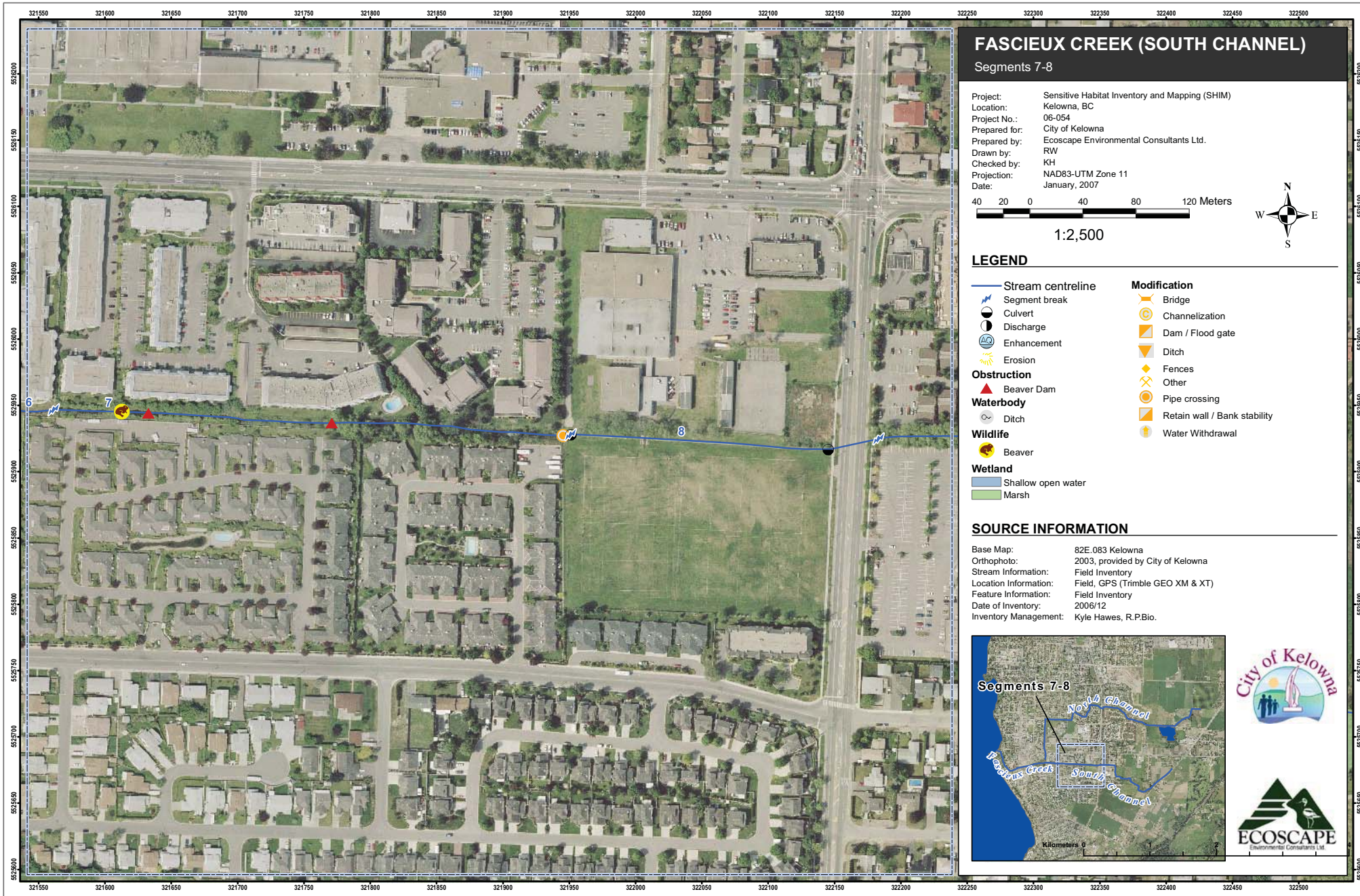
SOURCE INFORMATION

Base Map:	82E.083 Kelowna
Orthophoto:	2003, provided by City of Kelowna
Stream Information:	Field Inventory
Location Information:	Field, GPS (Trimble GEO XM & XT)
Feature Information:	Field Inventory
Date of Inventory:	2006/12
Inventory Management:	Kyle Hawes, R.P.Bio.



City of Kelowna

ECOSCAPE
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FASCIEUX CREEK (SOUTH CHANNEL)

Segments 7-8

Project:	Sensitive Habitat Inventory and Mapping (SHIM)
Location:	Kelowna, BC
Project No.:	06-054
Prepared for:	City of Kelowna
Prepared by:	Ecoscape Environmental Consultants Ltd.
Drawn by:	RW
Checked by:	KH
Projection:	NAD83-UTM Zone 11
Date:	January, 2007

40 20 0 40 80 120 Meters

1:2,500

N W E S

LEGEND

- Stream centreline
- Segment break
- Culvert
- Discharge
- Enhancement
- Erosion

Obstruction
- Beaver Dam

Waterbody
- Ditch

Wildlife
- Beaver

Wetland
- Shallow open water
- Marsh

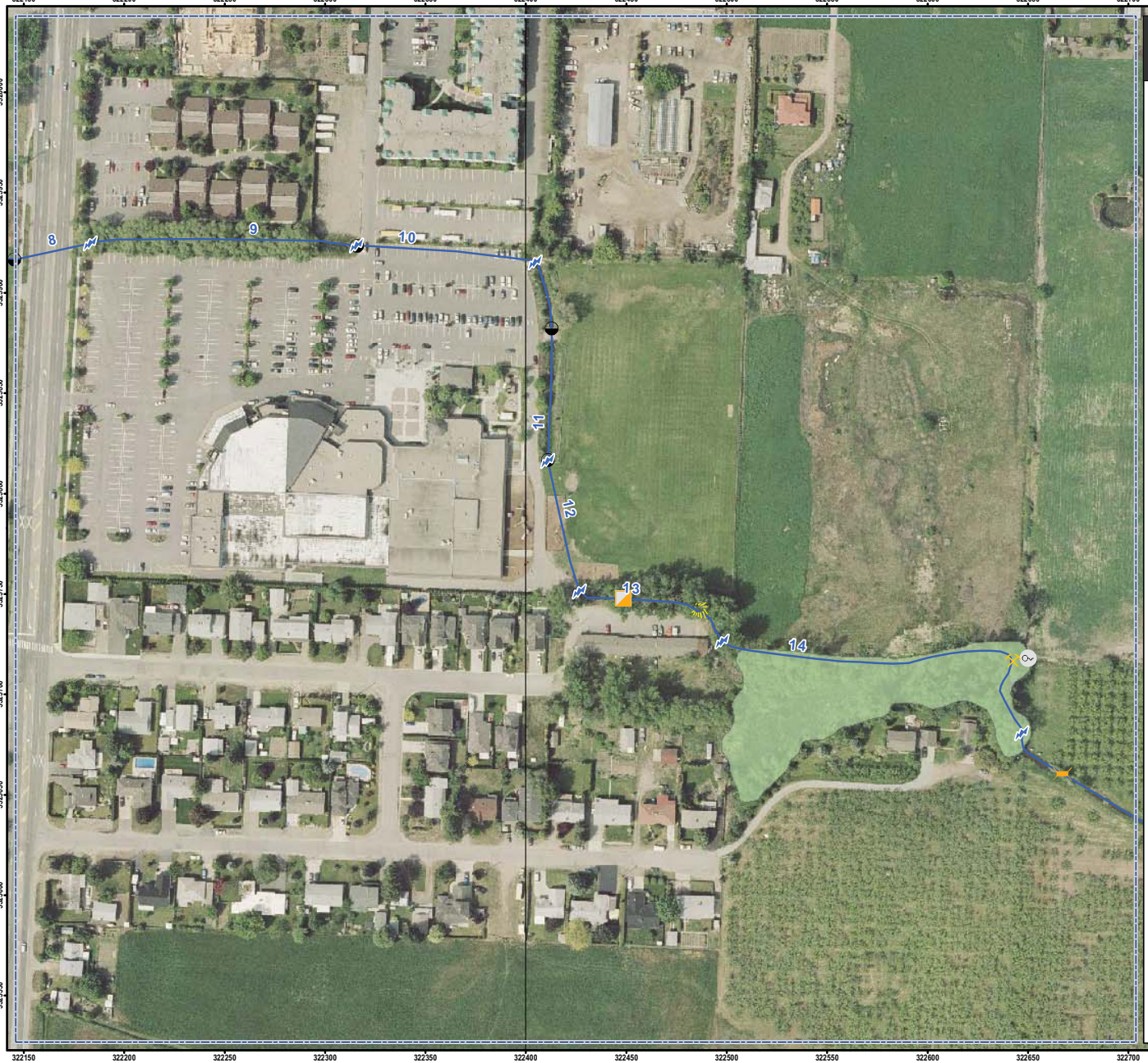
Modification
- Bridge
- Channelization
- Dam / Flood gate
- Ditch
- Fences
- Other
- Pipe crossing
- Retain wall / Bank stability
- Water Withdrawal

SOURCE INFORMATION

Base Map:	82E.083 Kelowna
Orthophoto:	2003, provided by City of Kelowna
Stream Information:	Field Inventory
Location Information:	Field, GPS (Trimble GEO XM & XT)
Feature Information:	Field Inventory
Date of Inventory:	2006/12
Inventory Management:	Kyle Hawes, R.P.Bio.

City of Kelowna

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FASCIEUX CREEK (SOUTH CHANNEL)

Segments 9-14

Project:	Sensitive Habitat Inventory and Mapping (SHIM)
Location:	Kelowna, BC
Project No.:	06-054
Prepared for:	City of Kelowna
Prepared by:	Ecoscape Environmental Consultants Ltd.
Drawn by:	RW
Checked by:	KH
Projection:	NAD83-UTM Zone 11
Date:	January, 2007

30 15 0 30 60 90 Meters

1:2,000

N W E S

LEGEND

- Stream centreline
- Segment break
- Culvert
- Discharge
- Enhancement
- Erosion

Obstruction
- Beaver Dam

Waterbody
- Ditch

Wildlife
- Beaver

Wetland
- Shallow open water
- Marsh

Modification
- Bridge
- Channelization
- Dam / Flood gate
- Ditch
- Fences
- Other
- Pipe crossing
- Retain wall / Bank stability
- Water Withdrawal

SOURCE INFORMATION

Base Map:	82E.083 Kelowna
Orthophoto:	2003, provided by City of Kelowna
Stream Information:	Field Inventory
Location Information:	Field, GPS (Trimble GEO XM & XT)
Feature Information:	Field Inventory
Date of Inventory:	2006/12
Inventory Management:	Kyle Hawes, R.P.Bio.



City of Kelowna

ECOSCAPE
Environmental Consultants Ltd.



FASCIEUX CREEK (SOUTH CHANNEL)

Segments 15-17

Project:	Sensitive Habitat Inventory and Mapping (SHIM)
Location:	Kelowna, BC
Project No.:	06-054
Prepared for:	City of Kelowna
Prepared by:	Ecoscape Environmental Consultants Ltd.
Drawn by:	RW
Checked by:	KH
Projection:	NAD83-UTM Zone 11
Date:	January, 2007

40 20 0 40 80 120 Meters

1:2,500

N W E S

LEGEND

- Stream centreline
- Segment break
- Culvert
- Discharge
- Enhancement
- Erosion

Obstruction
- Beaver Dam

Waterbody
- Ditch

Wildlife
- Beaver

Wetland
- Shallow open water
- Marsh

Modification
- Bridge
- Channelization
- Dam / Flood gate
- Ditch
- Fences
- Other
- Pipe crossing
- Retain wall / Bank stability
- Water Withdrawal

SOURCE INFORMATION

Base Map:	82E.083 Kelowna
Orthophoto:	2003, provided by City of Kelowna
Stream Information:	Field Inventory
Location Information:	Field, GPS (Trimble GEO XM & XT)
Feature Information:	Field Inventory
Date of Inventory:	2006/12
Inventory Management:	Kyle Hawes, R.P.Bio.



City of Kelowna

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FASCIEUX CREEK - NORTH CHANNEL

Segment 1

Project:	Sensitive Habitat Inventory and Mapping (SHIM)
Location:	Kelowna, BC
Project No.:	06-054
Prepared for:	City of Kelowna
Prepared by:	Ecoscape Environmental Consultants Ltd.
Drawn by:	RW
Checked by:	KH
Projection:	NAD83-UTM Zone 11
Date:	January, 2007

40 20 0 40 80 120 Meters

1:2,500

N
W E
S

LEGEND

- Stream centreline
- Segment break
- Culvert
- Discharge
- Enhancement
- Erosion

Obstruction
- Beaver Dam

Waterbody
- Ditch

Wildlife
- Beaver

Wetland
- Shallow open water
- Marsh

Modification
- Bridge
- Channelization
- Dam / Flood gate
- Ditch
- Fences
- Other
- Pipe crossing
- Retain wall / Bank stability
- Water Withdrawal

SOURCE INFORMATION

Base Map:	82E.083 Kelowna
Orthophoto:	2003, provided by City of Kelowna
Stream Information:	Field Inventory
Location Information:	Field, GPS (Trimble GEO XM & XT)
Feature Information:	Field Inventory
Date of Inventory:	2006/12
Inventory Management:	Kyle Hawes, R.P.Bio.



City of Kelowna

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FASCIEUX CREEK - NORTH CHANNEL

Segments 2-3

Project:	Sensitive Habitat Inventory and Mapping (SHIM)
Location:	Kelowna, BC
Project No.:	06-054
Prepared for:	City of Kelowna
Prepared by:	Ecoscape Environmental Consultants Ltd.
Drawn by:	RW
Checked by:	KH
Projection:	NAD83-UTM Zone 11
Date:	January, 2007

30 15 0 30 60 90 Meters

1:2,000

N
W E
S

LEGEND

- Stream centreline
- Segment break
- Culvert
- Discharge
- Enhancement
- Erosion

Obstruction
- Beaver Dam

Waterbody
- Ditch

Wildlife
- Beaver

Wetland
- Shallow open water
- Marsh

Modification
- Bridge
- Channelization
- Dam / Flood gate
- Ditch
- Fences
- Other
- Pipe crossing
- Retain wall / Bank stability
- Water Withdrawal

SOURCE INFORMATION

Base Map:	82E.083 Kelowna
Orthophoto:	2003, provided by City of Kelowna
Stream Information:	Field Inventory
Location Information:	Field, GPS (Trimble GEO XM & XT)
Feature Information:	Field Inventory
Date of Inventory:	2006/12
Inventory Management:	Kyle Hawes, R.P.Bio.



City of Kelowna

ECOSCAPE
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FASCIEUX CREEK - NORTH CHANNEL

Segments 4-5

Project:	Sensitive Habitat Inventory and Mapping (SHIM)
Location:	Kelowna, BC
Project No.:	06-054
Prepared for:	City of Kelowna
Prepared by:	Ecoscape Environmental Consultants Ltd.
Drawn by:	RW
Checked by:	KH
Projection:	NAD83-UTM Zone 11
Date:	January, 2007

40 20 0 40 80 120 Meters

1:2,500

N
W E
S

LEGEND

- Stream centreline
- Segment break
- Culvert
- Discharge
- Enhancement
- Erosion

Obstruction
- Beaver Dam

Waterbody
- Ditch

Wildlife
- Beaver

Wetland
- Shallow open water
- Marsh

Modification
- Bridge
- Channelization
- Dam / Flood gate
- Ditch
- Fences
- Other
- Pipe crossing
- Retain wall / Bank stability
- Water Withdrawal

SOURCE INFORMATION

Base Map:	82E.083 Kelowna
Orthophoto:	2003, provided by City of Kelowna
Stream Information:	Field Inventory
Location Information:	Field, GPS (Trimble GEO XM & XT)
Feature Information:	Field Inventory
Date of Inventory:	2006/12
Inventory Management:	Kyle Hawes, R.P.Bio.



City of Kelowna

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FASCIEUX CREEK - NORTH CHANNEL

Segments 6-10

Project:	Sensitive Habitat Inventory and Mapping (SHIM)
Location:	Kelowna, BC
Project No.:	06-054
Prepared for:	City of Kelowna
Prepared by:	Ecoscape Environmental Consultants Ltd.
Drawn by:	RW
Checked by:	KH
Projection:	NAD83-UTM Zone 11
Date:	January, 2007

50 25 0 50 100 150 Meters

1:3,000

N W E S

LEGEND

- Stream centreline
- Segment break
- Culvert
- Discharge
- Enhancement
- Erosion

Obstruction
- Beaver Dam

Waterbody
- Ditch

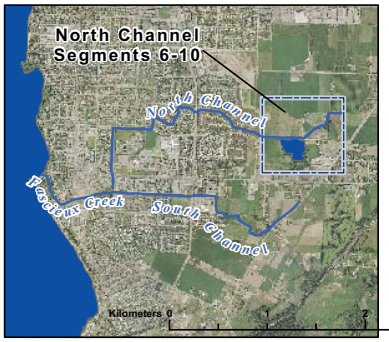
Wildlife
- Beaver

Wetland
- Shallow open water
- Marsh

Modification
- Bridge
- Channelization
- Dam / Flood gate
- Ditch
- Fences
- Other
- Pipe crossing
- Retain wall / Bank stability
- Water Withdrawal

SOURCE INFORMATION

Base Map:	82E.083 Kelowna
Orthophoto:	2003, provided by City of Kelowna
Stream Information:	Field Inventory
Location Information:	Field, GPS (Trimble GEO XM & XT)
Feature Information:	Field Inventory
Date of Inventory:	2006/12
Inventory Management:	Kyle Hawes, R.P.Bio.



City of Kelowna

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Fascieux Creek
Segment(s): 1 - 4

Segment	Primary	Secondary	Length (m)	Hydraulic	Gradient (%)	Crown Closure	Spawning Habitat	Comment Class
1.0	Modified		291.901	Run	0.5	1-20%	Unknown	Intermittent retaining walls - channelizing over bottom 85-m to Okanagan Lake.
2.0	Channelized		106.161	Slough	1.0	1-20%	Unknown	Channelized by retaining walls - but widths and instream structures maintaining some aquatic habitat
3.0	Channelized		125.211	Slough	0.0	0	Unknown	Retaining walls on both banks - camp ground/trailer park along left bank.
4.0	Culvert		207.119	Slough	0.0	0	Unknown	

	Substrates (%) [a]						Channel (m)				
Segment	O	F	G	C	B	R	Wetted Width	Bankfull Width	Wetted Depth	Bankfull Depth	Comment Substrates/Channel
1.0	20	78	1	1	0	0	2.50	3.00	0.30	0.70	Organic muck and fine sediments.
2.0	5	85	5	13	2	0	4.00	6.80	0.30	0.70	Constructed channel
3.0	30	50	0	5	5	0	3.00	3.20	0.40	0.60	Armoured channel - remainder of substrates are concrete where flumed at top of segment.
4.0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	

a. Substrate codes: O=organics; F=silt/sand; G=gravel; C=cobble; B=boulder; R=bedrock

	Cover (%) [b]								
Segment	Total Cover	B	DP	IV	LWD	OV	SWD	UC	Comment Cover
1.0	10	1	34	0	0	33	2	30	Small beaver dam providing some added complexity and deeper pool cover
2.0	15	35	40	10	0	15	0	0	Urbanized and manicured.
3.0	3	35	40	10	0	15	0	0	Impaired aquatic community
4.0	0	0	0	0	0	0	0	0	

b. Cover codes: B=boulder; DP=deep pool; IV=instream vegetation; LWD=large woody debris; OV=overstream vegetation; SWD=small woody debris; UC=undercut bank

	Left Bank Riparian							
Segment	Class	Qualifier	Stage	Shrub cover	Snags	Veteran Trees	Bank stability	Comment
1.0	Mixed forest	Urban_Residential	young forest	5-33%	No	No	High	
2.0	High Impervious	Urban_Residential	low shrubs <2m	5-33%	No	No	High	Multifamily development
3.0	Herbs/grasses	Urban_Residential		<5%	No	No	High	Trailer park/camp ground
4.0	High Impervious	Urban_Residential			No	No	High	

	Right Bank Riparian							
Segment	Class	Qualifier	Stage	Shrub cover	Snags	Veteran Trees	Bank stability	Comment
1.0	Mixed forest	Urban_Residential	young forest	<5%	No	No	High	More retaining walls.
2.0	Shrubs	Urban_Residential	tall shrubs 2-10m	34-66%	No	No	High	Parking lot and multifamily development setback a bit more from top of bank.
3.0	Shrubs	Urban_Residential	tall shrubs 2-10m	34-66%	No	No	High	
4.0	High Impervious	Urban_Residential			No	No	High	

Segment	Comment - Flora	Comment - Flora
1.0	Predominantly horticultural varieties - reed canary grass; willow.	Beaver; muskrat; Mallard
2.0	Predominantly horticultural varieties - reed canary grass; willow.	Beaver; muskrat; Mallard.
3.0	Predominantly horticultural varieties - reed canary grass; willow.	
4.0		

	Level of Impact [c]		Enhancement Opportunity	
Segment	Rating	Comment	Rating	Comment
1.0	Both_banks_mod	Intermittent retaining walls in both banks broke by partial naturalization in park (left bank)	Low	Within high water level of lake - large woody debris to add cover and instream complexity.
2.0	Both_banks_mod	Instream aquatic habitat impairment mitigated by instream structures and streambank landscaping.	Low	
3.0	Both_banks_high		Very_high	Construct meanders (channel restoration) - establish 10-15m setback and restore riparian community.
4.0	Both_banks_high	Underground.	Nil	

c. Impact rating: 6=nil; 5 = 1-bank low; 4 = 1-bank moderate; 3 = 1-bank high; 2 = both banks low; 1 = both banks moderate; 0 = both banks high



Fascieux Creek
Segment(s): 5 and 6

Segment	Primary	Secondary	Length (m)	Hydraulic	Gradient (%)	Crown Closure	Spawning Habitat	Comment Class
5.0	Modified	Wetland	256.191	Slough	0.0	1-20%	Unknown	Cattail marsh - willow swamp complex. Willow cover in lower portion of segment over more defined stream channel.
6.0	Modified	Wetland	183.723	Slough	0.0	1-20%	Unknown	Cattail/bulrush marsh.

	Substrates (%) [a]						Channel (m)				
Segment	O	F	G	C	B	R	Wetted Width	Bankfull Width	Wetted Depth	Bankfull Depth	Comment Substrates/Channel
5.0	80	18	2	0	0	0	0.00	0.00	0.00	0.00	Silt-sand-gravel occur in stream channel areas where increased flow velocities occur. Thalweg follows right bank of wetland.
6.0	80	20	0	0	0	0	4.00	5.00	0.50	0.70	

a. Substrate codes: O=organics; F=silt/sand; G=gravel; C=cobble; B=boulder; R=bedrock

	Cover (%) [b]								
Segment	Total Cover	B	DP	IV	LWD	OV	SWD	UC	Comment Cover
5.0	0	0	0	0	0	0	0	0	
6.0	80	0	20	80	0	0	0	0	Dense instream vegetation with marginal cover value for fish - high invertebrate community potential

b. Cover codes: B=boulder; DP=deep pool; IV=instream vegetation; LWD=large woody debris; OV=overstream vegetation; SWD=small woody debris; UC=undercut bank

Left Bank Riparian								
Segment	Class	Qualifier	Stage	Shrub cover	Snags	Veteran Trees	Bank stability	Comment
5.0	Disturbed wetland	Urban_Residential	tall shrubs 2-10m	<5%	No	No	High	Park trail and parking lot occur adjacent to wetland.
6.0	Herbs/grasses	Urban_Residential	low shrubs <2m	<5%	No	No	High	

Right Bank Riparian								
Segment	Class	Qualifier	Stage	Shrub cover	Snags	Veteran Trees	Bank stability	Comment
5.0	Disturbed wetland	Urban_Residential	tall shrubs 2-10m	<5%	No	No	High	Park trail and parking lot occur adjacent to wetland.
6.0	Herbs/grasses	Urban_Residential	young forest	<5%	No	No	High	Open canopy of exotic trees with turf.

Segment	Comment - Flora	Comment - Flora	
5.0	Pacific willow; cattail; reed canary grass; Oregon grape; rose; red-osier dogwood.	Mallard	
6.0	Cattail; bulrush; reed canary grass; red-osier dogwood; Chinese sumac.	Mallard	

	Level of Impact [c]		Enhancement Opportunity	
Segment	Rating	Comment	Rating	Comment
5.0	Both_banks_low	Constructed wetland surrounded by urbanization.	Low	
6.0	Both_banks_high	Multifamily development on both banks -	Low	Riparian enhancement.

c. Impact rating: 6=nil; 5 = 1-bank low; 4 = 1-bank moderate; 3 = 1-bank high; 2 = both banks low; 1 = both banks moderate; 0 = both banks high





Fascieux Creek
Segment(s): 7 and 8

Segment	Primary	Secondary	Length (m)	Hydraulic	Gradient (%)	Crown Closure	Spawning Habitat	Comment Class
7.0	Channelized		390.679	Slough	0.2	21-40%	Unknown	Open water with beaver activity.
8.0	Culvert	Other	233.402	Other	0.2	0	Unknown	Culverted with surface overland flow through shallow trough in field.

	Substrates (%) [a]						Channel (m)				
Segment	O	F	G	C	B	R	Wetted Width	Bankfull Width	Wetted Depth	Bankfull Depth	Comment Substrates/Channel
7.0	60	40	0	0	0	0	3.50	5.00	0.30	0.70	Increased channel width with prevalent beaver activity.
8.0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	

a. Substrate codes: O=organics; F=silt/sand; G=gravel; C=cobble; B=boulder; R=bedrock

	Cover (%) [b]								
Segment	Total Cover	B	DP	IV	LWD	OV	SWD	UC	Comment Cover
7.0	15	0	30	10	0	40	20	0	
8.0	0	0	0	0	0	0	0	0	

b. Cover codes: B=boulder; DP=deep pool; IV=instream vegetation; LWD=large woody debris; OV=overstream vegetation; SWD=small woody debris; UC=undercut bank

	Left Bank Riparian							
Segment	Class	Qualifier	Stage	Shrub cover	Snags	Veteran Trees	Bank stability	Comment
7.0	Shrubs	Urban_Residential	tall shrubs 2-10m	67-100%	No	No	High	
8.0	Herbs/grasses	Urban_Residential			No	No	High	Turf

	Right Bank Riparian							
Segment	Class	Qualifier	Stage	Shrub cover	Snags	Veteran Trees	Bank stability	Comment
7.0	Herbs/grasses	Urban_Residential	sapling >10m	<5%	No	No	High	Open canopy of exotic trees with turf.
8.0	Herbs/grasses	Urban_Residential			No	No	High	Turf

Segment	Comment - Flora	Comment - Flora
7.0	Willow sp.; elm; reed canary grass; exotic pines; red-osier dogwood; rose.	Beaver; Mallard.
8.0	Turf grass	

	Level of Impact [c]		Enhancement Opportunity	
Segment	Rating	Comment	Rating	Comment
7.0	Both_banks_mod	Channelized - fenced on left bank reducing impacts to narrow, naturalizing riparian band.	Low	
8.0	Both_banks_high		Nil	Unless daylighted, no opportunities.

c. Impact rating: 6=nil; 5 = 1-bank low; 4 = 1-bank moderate; 3 = 1-bank high; 2 = both banks low; 1 = both banks moderate; 0 = both banks high





Fascieux Creek
Segment(s): 9 - 14

Segment	Primary	Secondary	Length (m)	Hydraulic	Gradient (%)	Crown Closure	Spawning Habitat	Comment Class
9.0	Channelized		132.753	Riffle/Pool	0.4	71-90%	Unknown	
10.0	Culvert		89.618		0.4	0		
11.0	Channelized		100.403	Slough	0.4	0	Unknown	
12.0	Culvert		67.067		1.0			
13.0	Channelized		81.855	Riffle/Pool	1.0	41-70%	Unknown	Retaining wall along left bank at bottom of segment. Bank instability and erosion - both banks. All canopy closure provided by right bank cottonwoods
14.0	Modified	Wetland	188.381	Slough	0.0	41-70%	Unknown	

	Substrates (%) [a]						Channel (m)				
Segment	O	F	G	C	B	R	Wetted Width	Bankfull Width	Wetted Depth	Bankfull Depth	Comment Substrates/Channel
	60	40	0	0	0	0	1.50	3.30	0.08	0.28	Organic muck and fine sediments.
	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
	59	40	1	0	0	0	2.00	3.50	0.10	0.30	
	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
	1	94	2	3	0	0	1.40	2.50	0.05	0.25	
	80	20	0	0	0	0	4.00	5.00	0.10	0.50	

a. Substrate codes: O=organics; F=silt/sand; G=gravel; C=cobble; B=boulder; R=bedrock

	Cover (%) [b]								
Segment	Total Cover	B	DP	IV	LWD	OV	SWD	UC	Comment Cover
	5	0	10	0	0	0	90	0	
	0	0	0	0	0	0	0	0	
	30	0	0	80	0	20	0	0	
	0	0	0	0	0	0	0	0	
	2	0	0	0	0	50	50	0	
	60	0	10	0	20	40	30	0	

b. Cover codes: B=boulder; DP=deep pool; IV=instream vegetation; LWD=large woody debris; OV=overstream vegetation; SWD=small woody debris; UC=undercut bank

	Left Bank Riparian							
Segment	Class	Qualifier	Stage	Shrub cover	Snags	Veteran Trees	Bank stability	Comment
	High Impervious	Urban_Residential	tall shrubs 2-10m	5-33%	No	No	High	Parking lot at top of bank.
	High Impervious	Urban_Residential			No	No	High	Beneath parking lot.
	Herbs/grasses	Urban_Residential	low shrubs <2m	<5%	No	No	High	Parking lot at top of bank - mowed riparian grasses (reed canary grass)
	High Impervious	Urban_Residential			No	No	Low	
	Medium Impervious	Urban_Residential		<5%	No	No	Low	Parking lot and concrete retaining wall over bottom 30-m.
	Natural wetland	Natural	mature forest	67-100%	>=5	<5	High	Cattail marsh and cottonwood - red-osier dogwood riparian/swamp association.

	Right Bank Riparian							
Segment	Class	Qualifier	Stage	Shrub cover	Snags	Veteran Trees	Bank stability	Comment
	Broadleaf forest	Urban_Residential	young forest	5-33%	No	No	High	Mature willow canopy with poor developed shrub understory and turf.
	High Impervious	Urban_Residential			No	No	High	
	Herbs/grasses	Urban_Residential	low shrubs <2m	<5%	No	No	High	Mowed riparian grasses (reed canary grass)
	High Impervious	Urban_Residential			No	No	Low	
	Broadleaf forest	Urban_Residential	young forest	67-100%	No	No	Low	Channelized. Cottonwoods providing some habitat benefits and bank stability.
	Shrubs	Disturbed	tall shrubs 2-10m	34-66%	No	No	Medium	Vegetation removal/mowing to top of bank

Segment	Comment - Flora	Comment - Flora
	Pacific willow; reed canary grass; red-osier dogwood.	
	Reed canary grass; cattail; oak; maple; elm.	
	Cottonwood; red-osier dogwood; red canary grass; elm.	
	Cottonwood; red-osier dogwood; cattail; rose; Oregon grape; snowberry; reed canary grass.	Mallard; Red-tailed Hawk; Cooper's Hawk; House Sparrow; Black-capped Chickadee; Starling

	Level of Impact [c]		Enhancement Opportunity	
Segment	Rating	Comment	Rating	Comment
	Both_banks_high		Moderate	
	Both_banks_high	Culverted beneath parking lot.	Low	
	Both_banks_mod	Fenced - naturalization marginal. Function (wildlife) impaired by complete enclosure by fencing.	Moderate	Riparian re-vegetation.
	Both_banks_high	Culvert		
	Both_banks_high		High	Complete channel and riparian restoration.
	1_bank_high	Natural wetland complex along left bank - high disturbance along right bank.	High	Restore riparian vegetation along right bank.

c. Impact rating: 6=nil; 5 = 1-bank low; 4 = 1-bank moderate; 3 = 1-bank high; 2 = both banks low; 1 = both banks moderate; 0 = both banks high



Fascieux Creek
Segment(s): 15 - 17

Segment	Primary	Secondary	Length (m)	Hydraulic	Gradient (%)	Crown Closure	Spawning Habitat	Comment Class
15.0	Ditch		339.903	Slough	0.0	0		Intermittent channel ingrowth by cattail.
16.0	Natural		154.483	Riffle/Pool	0.8	71-90%	Potential	Cottonwood -red-osier dogwood riparian community - not recently disturbed.
17.0	Ditch		356.891	Slough	0.3	0		Ditched along Benvoulin - emerges from groundwater discharge.

	Substrates (%) [a]						Channel (m)				
Segment	O	F	G	C	B	R	Wetted Width	Bankfull Width	Wetted Depth	Bankfull Depth	Comment Substrates/Channel
15.0	80	20	0	0	0	0	2.00	2.50	0.10	0.30	
16.0	35	50	15	0	0	0	1.60	2.00	0.05	0.20	
17.0	5	90	5	0	0	0	1.50	1.90	0.02	0.20	

a. Substrate codes: O=organics; F=silt/sand; G=gravel; C=cobble; B=boulder; R=bedrock

	Cover (%) [b]								
Segment	Total Cover	B	DP	IV	LWD	OV	SWD	UC	Comment Cover
15.0	2	0	10	60	0	30	0	0	
16.0	40	0	0	0	0	80	20	0	
17.0	0	0	0	0	0	0	0	0	

b. Cover codes: B=boulder; DP=deep pool; IV=instream vegetation; LWD=large woody debris; OV=overstream vegetation; SWD=small woody debris; UC=undercut bank

Left Bank Riparian								
Segment	Class	Qualifier	Stage	Shrub cover	Snags	Veteran Trees	Bank stability	Comment
15.0	Herbs/grasses	Agriculture	low shrubs <2m	<5%	No	No	Medium	Orchard with intermittent cottonwood stands.
16.0	Broadleaf forest	Disturbed	young forest	67-100%	No	No	High	Benvoulin Rd. disturbance.
17.0	High Impervious	Urban_Residential	low shrubs <2m	<5%	No	No	Medium	Benvoulin Rd.

Right Bank Riparian								
Segment	Class	Qualifier	Stage	Shrub cover	Snags	Veteran Trees	Bank stability	Comment
15.0	Herbs/grasses	Agriculture	low shrubs <2m	<5%	No	No	Medium	Orchard with intermittent cottonwood stands.
16.0	Broadleaf forest	Natural	young forest	67-100%	No	No	High	Young cottonwood canopy.
17.0	Herbs/grasses	Agriculture	low shrubs <2m	<5%	No	No	Medium	Orchard/old field.

Segment	Comment - Flora	Comment - Flora
15.0	Orchard; red-osier dogwood; cattail; cottonwood.	Red-tailed Hawk; Mallard
16.0	Cottonwood - red-osier dogwood; cattail; snowberry; Oregon grape; rose; reed canary grass.	
17.0	Orchard; red-osier dogwood; cattail; cottonwood.	Red-tailed Hawk; Mallard

	Level of Impact [c]		Enhancement Opportunity	
Segment	Rating	Comment	Rating	Comment
15.0	Both_banks_high	Ditched.	Moderate	Riparian enhancement.
16.0	1_bank_low		Low	
17.0	Both_banks_high	Ditched.	Low	

c. Impact rating: 6=nil; 5 = 1-bank low; 4 = 1-bank moderate; 3 = 1-bank high; 2 = both banks low; 1 = both banks moderate; 0 = both banks high





Fascieux Creek - North Channel
Segment(s): 1

Segment	Primary	Secondary	Length (m)	Hydraulic	Gradient (%)	Crown Closure	Spawning Habitat	Comment Class
1.0	Ditch		1002.839	Slough	0.2	0	Unknown	Ditched around wastewater treatment plant.

	Substrates (%) [a]						Channel (m)				
Segment	O	F	G	C	B	R	Wetted Width	Bankfull Width	Wetted Depth	Bankfull Depth	Comment Substrates/Channel
1.0	50	45	0	3	2	0	3.00	4.00	0.30	0.90	Organic muck and fine sediments.

a. Substrate codes: O=organics; F=silt/sand; G=gravel; C=cobble; B=boulder; R=bedrock

	Cover (%) [b]								
Segment	Total Cover	B	DP	IV	LWD	OV	SWD	UC	Comment Cover
1.0									

b. Cover codes: B=boulder; DP=deep pool; IV=instream vegetation; LWD=large woody debris; OV=overstream vegetation; SWD=small woody debris; UC=undercut bank

	Left Bank Riparian							
Segment	Class	Qualifier	Stage	Shrub cover	Snags	Veteran Trees	Bank stability	Comment
1.0	Herbs/grasses	Urban_Residential	tall shrubs 2-10m	<5%	No	No	Medium	Kelowna wastewater treatment plant - turf and exotic trees.

	Right Bank Riparian							
Segment	Class	Qualifier	Stage	Shrub cover	Snags	Veteran Trees	Bank stability	Comment
1.0	High Impervious	Urban_Residential		<5%	No	No	Medium	Gravel lane and Raymer Road follow top of bank.

Segment	Comment - Flora	Comment - Flora
1.0		

	Level of Impact [c]		Enhancement Opportunity	
Segment	Rating	Comment	Rating	Comment
1.0	Both_banks_high	Ditched, devoid of canopy/riparian vegetation.	Moderate	Shrub thicket development within ditch to provide instream cover/shade and bank stability.

c. Impact rating: 6=nil; 5 = 1-bank low; 4 = 1-bank moderate; 3 = 1-bank high; 2 = both banks low; 1 = both banks moderate; 0 = both banks high



Fascieux Creek - North Channel
Segment(s): 2 and 3

Segment	Primary	Secondary	Length (m)	Hydraulic	Gradient (%)	Crown Closure	Spawning Habitat	Comment Class
2.0	Culvert		136.587	Run	0.5			
3.0	Modified		609.569	Run	0.5	1-20%	Unknown	

	Substrates (%) [a]						Channel (m)				
Segment	O	F	G	C	B	R	Wetted Width	Bankfull Width	Wetted Depth	Bankfull Depth	Comment Substrates/Channel
2.0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	
3.0	50	45	0	3	2	0	1.80	2.50	0.10	0.40	Organic muck and fine sediments.

a. Substrate codes: O=organics; F=silt/sand; G=gravel; C=cobble; B=boulder; R=bedrock

	Cover (%) [b]								
Segment	Total Cover	B	DP	IV	LWD	OV	SWD	UC	Comment Cover
2.0	0	0	0	0	0	0	0	0	
3.0	3	0	30	30	0	35	5	0	

b. Cover codes: B=boulder; DP=deep pool; IV=instream vegetation; LWD=large woody debris; OV=overstream vegetation; SWD=small woody debris; UC=undercut bank

Left Bank Riparian								
Segment	Class	Qualifier	Stage	Shrub cover	Snags	Veteran Trees	Bank stability	Comment
2.0	High Impervious	Urban_Residential			No	No		
3.0	Herbs/grasses	Urban_Residential	sapling >10m	<5%	No	No	Medium	open graminoid with scattered exotic trees.

Right Bank Riparian								
Segment	Class	Qualifier	Stage	Shrub cover	Snags	Veteran Trees	Bank stability	Comment
2.0	High Impervious	Urban_Residential			No	No		
3.0	Herbs/grasses	Urban_Residential	sapling >10m	5-33%	No	No	Medium	open graminoid with scattered exotic trees.

Segment	Comment - Flora	Comment - Flora
2.0		
3.0	Juniper; elm; turf; willow sp.; red-osier dogwood.	Goldfinch; muskrat.

	Level of Impact [c]		Enhancement Opportunity	
Segment	Rating	Comment	Rating	Comment
2.0	Both_banks_high	Culvert		
3.0	Both_banks_high	Channelized with minimal instream habitat complexity and open/modified riparian.	High	Riparian re-vegetation and instream habitat complexity.

c. Impact rating: 6=nil; 5 = 1-bank low; 4 = 1-bank moderate; 3 = 1-bank high; 2 = both banks low; 1 = both banks moderate; 0 = both banks high





Fascieux Creek - North Channel
Segment(s): 4 and 5

Segment	Primary	Secondary	Length (m)	Hydraulic	Gradient (%)	Crown Closure	Spawning Habitat	Comment Class
4.0	Channelized		664.748	Run	0.5	0	Unknown	Constructed channel lined with cobble/boulder.
5.0	Modified		110.589	Riffle/Pool	1.0	>90%	Unknown	Dense willow canopy.

	Substrates (%) [a]						Channel (m)				
Segment	O	F	G	C	B	R	Wetted Width	Bankfull Width	Wetted Depth	Bankfull Depth	Comment Substrates/Channel
4.0	0	80	0	15	5	0	1.90	2.20	0.25	0.40	Constructed channel - fine sediments over coarse constructed channel substrates.
5.0	20	80	0	0	0	0	1.60	2.50	0.15	0.40	

a. Substrate codes: O=organics; F=silt/sand; G=gravel; C=cobble; B=boulder; R=bedrock

	Cover (%) [b]								
Segment	Total Cover	B	DP	IV	LWD	OV	SWD	UC	Comment Cover
4.0	5	0	30	30	0	35	5	0	
5.0	70	0	0	5	10	70	15	0	

b. Cover codes: B=boulder; DP=deep pool; IV=instream vegetation; LWD=large woody debris; OV=overstream vegetation; SWD=small woody debris; UC=undercut bank

	Left Bank Riparian							
Segment	Class	Qualifier	Stage	Shrub cover	Snags	Veteran Trees	Bank stability	Comment
4.0	Herbs/grasses	Ur-ban_Residential	low shrubs <2m	<5%	No	No	High	
5.0	Broadleaf forest	Disturbed	young forest	67-100%	No	No	High	Narrow willow riparian band

	Right Bank Riparian							
Segment	Class	Qualifier	Stage	Shrub cover	Snags	Veteran Trees	Bank stability	Comment
4.0	Herbs/grasses	Ur-ban_Residential	low shrubs <2m	<5%	No	No	High	
5.0	Broadleaf forest	Disturbed	young forest	67-100%	No	No	High	Narrow willow riparian band

Segment	Comment - Flora	Comment - Flora
4.0	Exotic trees/shrubs.	Mallard
5.0	Pacific willow; red-osier dogwood; invasive forbs.	

	Level of Impact [c]		Enhancement Opportunity	
Segment	Rating	Comment	Rating	Comment
4.0	Both_banks_high	Constructed channel with low ecological value - aquatic habitats marginal.	Moderate	Shade and instream structural complexity.
5.0	Both_banks_low	Historic ditching/channelization - naturalizing but impaired by encroachment and weed invasion.	Moderate	Weed management and canopy enhancement (more cottonwood - less willow)

c. Impact rating: 6=nil; 5 = 1-bank low; 4 = 1-bank moderate; 3 = 1-bank high; 2 = both banks low; 1 = both banks moderate; 0 = both banks high


Segment 4


Segment 5

Fascieux Creek - North Channel
Segment(s): 6 - 10

Segment	Primary	Secondary	Length (m)	Hydraulic	Gradient (%)	Crown Closure	Spawning Habitat	Comment Class
6.0	Ditch		206.963	Slough	0.1	21-40%	Unknown	Tall shrub canopy closure over stream.
7.0	Ditch		205.189	Run	0.5	71-90%	Unknown	Shallow run through northern watercress and cattail ditch. Narrow cottonwood (grove) canopy along right bank.
8.0	Ditch		234.022	Slough	0.5	1-20%	Unknown	Discontinuous cottonwood canopy near bottom of segment.
9.0	Modified	Wetland	167.354	Slough	0.1	41-70%	Unknown	Willow swamp and excavated shallow open water wetland/pond
10.0	Ditch		122.652	Slough	0.5	0	Unknown	Creek originates from ditching and tile drains.

	Substrates (%) [a]						Channel (m)				
Segment	O	F	G	C	B	R	Wetted Width	Bankfull Width	Wetted Depth	Bankfull Depth	Comment Substrates/Channel
6.0	40	60	0	0	0	0	2.40	3.00	0.20	0.50	
7.0	40	60	0	0	0	0	2.40	3.00	0.10	0.40	detritus, organic muck and fine sediments.
8.0	60	40	0	0	0	0	3.50	4.00	0.30	0.50	Fibric organic and silt/clay.
9.0	40	60	0	0	0	0	18.00	20.00	0.30	0.50	
10.0	20	80	0	0	0	0	1.50	2.30	0.10	0.20	

a. Substrate codes: O=organics; F=silt/sand; G=gravel; C=cobble; B=boulder; R=bedrock

	Cover (%) [b]								
Segment	Total Cover	B	DP	IV	LWD	OV	SWD	UC	Comment Cover
6.0	45	0	0	60	0	40	0	0	Cattail and shrub cover.
7.0	40	0	0	70	0	30	0	0	Cattail, watercress, and red-osier dogwood (overstream) cover.
8.0	30	0	0	100	0	0	0	0	
9.0	15	0	10	20	5	50	15	0	Pacific willow.
10.0	1	0	0	100	0	0	0	0	

b. Cover codes: B=boulder; DP=deep pool; IV=instream vegetation; LWD=large woody debris; OV=overstream vegetation; SWD=small woody debris; UC=undercut bank

	Left Bank Riparian							
Segment	Class	Qualifier	Stage	Shrub cover	Snags	Veteran Trees	Bank stability	Comment
6.0	Herbs/grasses	Agriculture	tall shrubs 2-10m	5-33%	No	No	High	Narrow discontinuous tall shrub thicket (hawthorn - rose - dogwood) along ditch.
7.0	High Impervious	Urban_Residential	low shrubs <2m	5-33%	No	No	High	Narrow, discontinuous cottonwood saplings along ditch adjacent road.
8.0	Herbs/grasses	Agriculture	low shrubs <2m	<5%	No	No	Medium	Ditch and berm through old weedy field.
9.0	Broadleaf forest	Disturbed	young forest	67-100%	No	No	High	Willow - red-osier dogwood riparian association/swamp
10.0	Herbs/grasses	Agriculture		<5%	No	No	Low	Gaminoids

	Right Bank Riparian							
Segment	Class	Qualifier	Stage	Shrub cover	Snags	Veteran Trees	Bank stability	Comment
6.0	Herbs/grasses	Agriculture	tall shrubs 2-10m	5-33%	No	No	High	Narrow discontinuous tall shrub thicket (hawthorn - rose - dogwood) along ditch.
7.0	Herbs/grasses	Agriculture	sapling >10m	34-66%	No	No	High	Narrow, discontinuous cottonwood grove along stream bank adjacent field.
8.0	Herbs/grasses	Agriculture	low shrubs <2m	5-33%	No	No	Medium	Ditch and berm through old weedy field.
9.0	Broadleaf forest	Disturbed	young forest	67-100%	No	No	High	Willow - red-osier dogwood riparian association/swamp
10.0	Herbs/grasses	Agriculture		<5%	No	No	High	

Segment	Comment - Flora	Comment - Flora
6.0	Hawthorn; red-osier dogwood; cattail; alder; goldenrod; willow.	
7.0	Cottonwood; red-osier dogwood; cattail; northern watercress.	
8.0	Cottonwood; cattail; high proportion of invasive forbs.	
9.0	Pacific willow; red-osier dogwood; reed canary grass; hawthorn; rose.	
10.0	Graminoids	

	Level of Impact [c]		Enhancement Opportunity	
Segment	Rating	Comment	Rating	Comment
6.0	Both_banks_mod	Ditched - greater ecological function than urbanized segments of equal riparian and channel quality.	Very_high	With redevelopment, stream channel and riparian/wetland creation/restoration.
7.0	Both_banks_mod	Ditched - greater ecological function than urbanized segments of equal riparian and channel quality.	High	With redevelopment, stream channel and riparian/wetland creation/restoration.
8.0	Both_banks_high	Ditched and high weed invasion ratio.	Very_high	At time of redevelopment create meandering channel and wetland communities.
9.0	Both_banks_mod		Moderate	
10.0	Both_banks_high	Ditched at headwater	Low	Creek originates from ditching and tile drains.

c. Impact rating: 6=nil; 5 = 1-bank low; 4 = 1-bank moderate; 3 = 1-bank high; 2 = both banks low; 1 = both banks moderate; 0 = both banks high

