APPENDIX F: Sumas Sub-basin Report

WHATCOM COUNTY FISH PASSAGE ASSESSMENT SUB-BASIN REPORT
SUMAS SUB-BASIN

Sub-basin Description

The Sumas Sub-basin includes the main stem Sumas River, Johnson Creek, Saar Creek and their associated tributaries (Figure 1-3). The Sumas River originates less than half a mile from the Nooksack River near Lawrence. The Sumas flows northward to the Fraser River in a low gradient, highly sinuous channel located in a broad agricultural valley along the western toe of Sumas Mountain Steep gradient tributaries form numerous alluvial fans along the eastern flank of Sumas Mountain. These tributary streams include Swift, Dale, Goodwin, Breckenridge, and Kenney Creeks.

Land use on the valley bottom of the Sumas Sub-basin is chiefly agricultural and rural residential with forestry dominating the eastern foothills. Land use jurisdiction is split between Whatcom County in the low-lying areas, and the Washington State Department of Natural Resources in the foothills (Whatcom County, 1997).

Johnson Creek drains the western portion of the Sumas Sub-basin (Figure 1 and 3). The North Fork of Johnson creek originates in thick peat deposits surrounding Pangborn Lake and flows through rich farmland on an elevated glacial outwash terrace before dropping to the main stem on the river floodplain. Substrate is characterized by sandy gravel on the terrace slopes transitioning to sand and silt in the lower reaches. Streamside vegetation is typically fragmented deciduous forest interspersed with pasture and cultivated cropland. Fish use is dominated by coho salmon and cutthroat trout (Whatcom County, 1994, NWIFC, 2003).

Like the Sumas River, the South Fork of Johnson Creek originates less than half a mile from the Nooksack River near the town of Nooksack and follows a low gradient sinuous channel through Nooksack River alluvium. The stream flows along the eastern toe of the Lynden outwash terrace, joins with the North Fork of Johnson Creek, and flows northeast through dairy country to join the Sumas River near the town of Sumas. Stream substrate is predominantly sand and silt with occasional gravel patches. Streamside vegetation is typically fragmented deciduous forest interspersed with cultivated crops and reed canary grass and discontinuous thickets of native shrubs and blackberries. Fish use is dominated by coho salmon and cutthroat trout. Chum salmon also utilize the lower main stem (Whatcom County, 1994, NWIFC, 2003).

Saar Creek originates in the heavily logged foothills that ring Paradise Valley on Sumas Mountain and flows northward into a low-gradient valley situated between Sumas and Veddar Mountains (Figure 2). The creek flows westward through mixed pasture and forest to Saar Creek canyon. After descending through this steep, forested canyon, Saar Creek flows northward again across a large alluvial fan into a long ditched and diked agricultural reach before joining the Sumas River in Canada. Substrate varies from gravel/cobble in the upper reaches and on the alluvial fan to bedrock in the steep canyon reach and finally to silt and sand substrate in the ditched agricultural reaches. Streamside vegetation is mixed deciduous/conifer forest from the

headwaters to the alluvial fan. The riparian forest ends abruptly at the alluvial fan and transitions to overhanging reed canary grass and discontinuous thickets of native shrubs and blackberries downstream to Canada. Chum salmon, Sea run Cutthroat trout, fall Chinook, coho, steelhead trout and, occasionally, sockeye salmon and native char utilize the alluvial fan for spawning downstream of the Saar Creek canyon. A series of cascades blocks all but steelhead trout above the canyon (Whatcom County, 1994, NWIFC, 2003).

Swift Creek originates in a massive earth flow that generates copious amounts of silty material (Figure 3). This heavy silt load renders most of the creek uninhabitable to fish life, and creates high turbidity in the Sumas River for many miles downstream from the confluence.

Dale, Goodwin, and Kenney Creeks share many similar characteristics (Figure 3). The upper watershed is typically steep gradient cascade and falls which transition abruptly to moderate gradient, gravel rich streams on alluvial fans that border the Sumas River floodplain. Streamside vegetation is usually thick conifer forest on the hill-slope, and fragmented deciduous/conifer forest and pasture on the alluvial fan. Fish use is usually restricted to the alluvial fan reaches and includes coho salmon, and cutthroat and steelhead trout (Whatcom County, 1994, NWIFC, 2003).

Breckenridge Creek originates as numerous small tributary streams on the northern end of Sumas Mountain (Figure 2 and 3). These tributaries drop to a relatively long low-gradient reach that flows westward through forested swamps along the northern toe of the mountain. The stream flows into a ravine, across South Pass Road, and through a short, high gradient reach dominated by cascades and falls before emerging onto a broad alluvial fan. Streamside vegetation is conifer forest on the hill-slope, mixed hardwood/conifer forest, residential clearings, and pasture along the low gradient reach, and fragmented deciduous/conifer forest and pasture on the alluvial fan. Substrate transitions from cobble/gravel in the upper reaches to gravel and sand on the fan. Fish use is pink, chum, and coho salmon, and cutthroat and steelhead trout below the cascades; and coho salmon, and cutthroat and steelhead trout above the cascades (Whatcom County, 1994, NWIFC, 2003).

Data Integration from Previous Projects

In the Sumas Sub-basin, previous barrier data from Whatcom County (County roads) and Washington Department of Transportation (WSDOT) is integrated into the Washington Department of Fish and Wildlife's Fish Passage and Diversion Screening Inventory (FPDSI) data base format and is included in the final summary table.

Reach Prioritization Summary

Prior to contacting landowners for access permission, inventory staff met with tribal and state biologists, and local fisheries professionals to identify priority stream reaches that had not been previously inventoried. In the interest of efficiency, we did not include areas with previously completed inventories, or where barrier inventories are required by law, and focused on reaches where information was lacking.

Similar inventories have been completed by the Washington Department of Natural Resources (DNR) and State Department of Transportation (WSDOT) for their respective ownerships. DNR will be correcting their barriers under Road Maintenance and Abandonment Plan scheduling and implementation. WSDOT and Whatcom County Public Works will be repairing barriers on roadways as part of their ongoing maintenance and repair program.

The following reaches were inventoried in the Sumas Sub-basin:

- Johnson Creek: From Squaw Creek confluence to upstream extent of anadromous utilization.
- Bone Creek: Not surveyed due to poor habitat quality resulting from heavy agricultural impacts.
- Swift Creek: Not surveyed due to poor habitat quality resulting form extream sedimentation originating in the Swift Creek earthflow..
- North Fork Johnson Creek (Pangborn Creek): From Johnson Creek confluence to Pangborn Lake. Includes tributary that crosses Halverstick Road.
- Swift Creek: No landowner contact efforts, stream system has poor habitat potential.
- Dale Creek: From confluence to end of anadromous use.
- Breckinridge Creek: From Confluence with Sumas River to end of anadromous use. Includes entire anadromous reach of tributary that crosses at Goodwin Road at MP 0.69.
- Kinney Creek: From North Telegraph Road to end of anadromous use.
- Goodwin Creek: Comprehensive survey of anadromous habitat upstream of Oat Coles Road.
- Squaw Creek: Comprehensive survey of anadromous habitat upstream of Van Buren Road.
- Saar Creek: Previously surveyed by Whatcom County from Hillview Road to the end of anadromous fish utilization. No private drainage structures on Saar Creek were identified

Barrier Assessment

Prior to conducting fieldwork, landowners adjacent to stream inventory sites provided written or verbal permission for field crews to access their property. Field crews did not evaluate culverts or habitat conditions on land parcels in which property access was denied.

Two levels of assessment are included in this report. The first is a road inventory conducted by Whatcom County Public Works staff that identified fish blocking culverts on the County road system for known and possible fish bearing streams. The second level of assessment was a stream-based inventory by Nooksack Tribe and Nooksack Salmon Enhancement Association field crews on priority stream reaches identified in the reach prioritization effort described above. All human made features in priority stream reaches were geo-referenced using GPS and evaluated for their ability to pass fish. Field evaluation and data collection followed the methodologies described in the *Fish Passage Barrier and surface Water Diversion Screening Assessment and Prioritization Manual* (WDFW 2000).

Summary of Results

Figure 1 is a map of the Sumas Sub-basin showing the location and site ID number of each feature inventoried. Table 1 summarizes the inventory results sequentially by site ID number for the Sumas Sub-basin. Table 2 summarizes the details associated with identified fish passage barriers and is sorted by Priority Index number (PI). Due primarily to property access restrictions, some blockages did not have PI's calculated. However, this project captured the vast majority of fish passage barriers for a reasonably complete inventory of all passage barriers to anadromous fish in this sub-basin.

Table 1. Stream features inventoried in the Sumas Sub-basin, sorted by Site ID number.

Site ID	Sequencer[1]	Stream	Tributary To	Owner Type	Feature	Repair[2] Status	% Passable	Additional Barriers		Survey Type[3]	Total PI
								Upstream	Downstream		
00.0003 11.10	1.1	Saar Cr	Sumas R	County	Culvert	FX	100				
00.0013 2.50		Breckenridge Cr	Sumas R	County	Fishway	OK	100			LME	
00.0019A 1.10	1.1	Unnamed	Goodwin Cr	Private	Culvert	RR	0			TD	
00.0020 0.80	1.1	Dale Cr	Sumas R	County	Culvert	RR	33			TD	
1280308	1.1	Unnamed	Kinney Cr	Private	Culvert	OK	100				
1285052	1.1	Unnamed	Breckenridge Cr	Private	Culvert	RR	0	0	0	RSFS	10.74
1285078	1.1	Pangborn Cr	Johnson Cr	Private	Culvert	OK	100				
1285079	1.1	Pangborn Cr	Johnson Cr	Private	Culvert	OK	100				
1285132	1.1	Goodwin Cr	Sumas R	Private	Culvert	RR	67	2	0	RSFS	8.24
1285133	1.1	Goodwin Cr	Sumas R	Private	Culvert	RR	67	1	1	RSFS	8.11
1285134	1.1	Goodwin Cr	Sumas R	Private	Culvert	OK	100				
1285135	1.1	Goodwin Cr	Sumas R	Private	Culvert	RR	0	0	2	RSFS	6.15
1285136	1.1	Unnamed	Breckenridge Cr	Private	Culvert	OK	100				
1285137	1.2	Breckenridge Cr	Sumas R	Private	Culvert	OK	100				
1285138	1.1	Kinney Cr	Sumas R	Private	Culvert	OK	100				
1285139	1.1	Kinney Cr	Sumas R	Private	Culvert	UD					
1285140	1.1	Kinney Cr	Sumas R	Private	Culvert	RR	33	3	0	RSFS	15.61
1285141	1.3	Kinney Cr	Sumas R	Private	Culvert	RR	33	2	1	RSFS	15.47
1285143	1.1	Squaw Cr	Johnson Cr	Private	Culvert	OK	100				
1285144	1.1	Squaw Cr	Johnson Cr	Private	Culvert	OK	100				
1285145	1.1	Squaw Cr	Johnson Cr	Private	Culvert	OK	100				
1285146	1.1	Squaw Cr	Johnson Cr	Private	Culvert	RR	33	1	0	RSFS	16.20
1285147	1.1	Squaw Cr	Johnson Cr	Private	Culvert	OK	100				

[1] Sequencer: 1:2 – One culvert of two, 1:3 - One culvert of three, etc.

[2] Repair Status: OK – No action needed, RR – Repair required, LG – Habitat gain is less than 200 m., UD – Habitat gain undetermined, FX – Fixed, Blank – No fish use potential.

[3] Survey Type: TD – Threshold Determination, LME – Lineal Map Estimate, ETD – Expanded threshold determination, UETD – Unexpanded Threshold Determination, FS, PS – Full habitat Survey, RSFS – Reduced Sampling Physical Survey.

Site ID	Sequencer[1]	Stream	Tributary To	Owner Type	Feature	Repair[2] Status	% Passable	Additional Barriers		Survey Type[3]	Total PI
								Upstream	Downstream		
1285148	1.1	Squaw Cr	Johnson Cr	Private	Culvert	OK	100				
1285149	1.1	Squaw Cr	Johnson Cr	Private	Culvert	OK	100				
1285151	1.1	Pangborn Cr	Johnson Cr	Private	Culvert	OK	100				
1285152	1.1	Pangborn Cr	Johnson Cr	Private	Culvert	OK	100				
1285153	1.1	Pangborn Cr	Johnson Cr	Private	Culvert	OK	100				
1285154	1.1	Pangborn Cr	Johnson Cr	Private	Culvert	OK	100				
370124	1.1	Van Volkenberg Cr	Johnson Cr	County	Culvert	OK	100				
370135	1.1	Arnold Sl	Saar Cr	County	Culvert	OK	100				
370136	1.1	Arnold Sl	Saar Cr	County	Culvert	RR	67			TD	
370150	1.1	Unnamed	Goodwin Cr	County	Culvert	RR	67			TD	
370165	1.1	Pangborn Cr	Johnson Cr	County	Culvert	OK	100				
370166	1.1	Unnamed	Johnson Cr	County	Culvert	OK	100				
370167	1.1	Bone Cr	Sumas R	County	Culvert	OK	100				
370219	1.2	Bone Cr	Sumas R	County	Culvert	OK	100				
370220	1.1	Unnamed	Bone Cr	County	Culvert	LG	67			TD	
370242	1.1	Breckenridge Cr	Sumas R	County	Culvert	OK	100				
370243	1.1	Gold Cr	Breckenridge Cr	County	Culvert	OK	100				
370244	1.1	Unnamed	Goodwin Cr	County	Culvert	OK	100				
370245	1.1	Power Cr	Goodwin Cr	County	Culvert	OK	100				
370246	1.1	Unnamed	Power Cr	County	Culvert	LG	67			TD	
370247	1.1	Goodwin Cr	Sumas R	County	Culvert	OK	100				
370249	1.1	Hoff Cr	Sumas R	County	Culvert	OK	100				
370250	1.1	Unnamed	Sumas R	County	Culvert	RR	0			TD	

[1] Sequencer: 1:2 – One culvert of two, 1:3 - One culvert of three, etc.

[2] Repair Status: OK – No action needed, RR – Repair required, LG – Habitat gain is less than 200 m., UD – Habitat gain undetermined, FX – Fixed, Blank – No fish use potential.

[3] Survey Type: TD – Threshold Determination, LME – Lineal Map Estimate, ETD – Expanded threshold determination, UETD – Unexpanded Threshold Determination, FS, PS – Full habitat Survey, RSFS – Reduced Sampling Physical Survey.

Site ID	Sequencer[1]	Stream	Tributary To	Owner Type	Feature	Repair[2] Status	% Passable	Additional Barriers		Survey Type[3]	Total PI
								Upstream	Downstream		
370251	1.1	Unnamed	Sumas R	County	Culvert	RR	33			TD	
370262	1.1	Unnamed	Johnson Cr	County	Culvert	OK	100				
370266	1.1	Squaw Cr	Johnson Cr	County	Culvert	RR	33	0	1	ETD	11.91
370268	1.1	Johnson Cr	Sumas R	County	Culvert	OK	100				
370283	1.1	Bone Cr	Sumas R	County	Culvert	OK	100				
370285	1.2	Unnamed	Arnold SL	County	Culvert	RR	67			TD	
370293	1.1	Bone Cr	Sumas R	County	Culvert	OK	100				
370303	1.1	Arnold Sl	Saar Cr	County	Culvert	UD					
370344	1.2	Johnson Cr	Sumas R	County	Culvert	OK	100				
370345	1.1	Heath Ditch	Johnson Cr	County	Culvert	RR	67			TD	
370346	1.1	Kinney Cr	Sumas R	County	Culvert	OK	100				
370355	1.1	Unnamed	Dale Cr	County	Culvert	OK	100				
370366	1.1	Goodwin Cr	Sumas R	County	Culvert	OK	100				
370395	1.1	Arnold Sl	Saar Cr	County	Culvert	OK	100				
370404	1.1	Unnamed	Kinney Cr	County	Culvert	RR	0	0	3	RSFS	7.15
370411	1.1	Kinney Cr	Sumas R	County	Culvert	RR	0	1	2	RSFS	8.92
370412	1.1	Unnamed	Kinney Cr	County	Culvert	RR	67			TD	
370420	1.1	Kinney Cr	Sumas R	County	Culvert	OK	100				
370436	1.1	Sumas R	Fraser R	County	Culvert	OK	100				
370437	1.2	Goodwin Cr	Sumas R	County	Culvert	OK	100				
370438	1.1	Unnamed	Goodwin Cr	County	Culvert	OK	100				
370439	1.1	Hoff Cr	Sumas R	County	Culvert	RR	67			TD	
370444	1.1	Sumas R	Fraser R	County	Culvert	OK	100				

[1] Sequencer: 1:2 – One culvert of two, 1:3 - One culvert of three, etc.

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[3] Survey Type: TD – Threshold Determination, LME – Lineal Map Estimate, ETD – Expanded threshold determination, UETD – Unexpanded Threshold Determination, FS, PS – Full habitat Survey, RSFS – Reduced Sampling Physical Survey.

Site ID	Sequencer[1]	Stream	Tributary To	Owner Type	Feature	Repair[2] Status	% Passable	Additional Barriers		Survey Type[3]	Total PI
								Upstream	Downstream		
370447	1.1	Unnamed	Squaw Cr	County	Culvert	OK	100				
370471	1.1	Unnamed	Arnold SL	County	Culvert	RR	67			TD	
370472	1.1	Arnold Sl	Saar Cr	County	Culvert	OK	100				
370498	1.2	Sumas R	Fraser R	County	Culvert	OK	100				
370499	1.2	Unnamed	Sumas R	County	Culvert	RR	33			TD	
370505	1.1	Kinney Cr	Sumas R	County	Culvert	OK	100				
370513	1.1	Unnamed	Saar Cr	County	Culvert	LG	67			TD	
370514	1.1	Unnamed	Swift Cr	County	Culvert	OK	100				
370515	1.1	Unnamed	Swift Cr	County	Culvert	RR	67			TD	
370517	1.1	Unnamed	Saar Cr	County	Culvert	RR	67			TD	
370549	1.1	Unnamed	Johnson Cr	County	Culvert	RR	67			TD	
370550	1.2	Heath Ditch	Johnson Cr	County	Culvert	RR	67			TD	
370551	1.1	Unnamed	Heath Cr	County	Culvert	LG					
370552	1.1	Unnamed	Squaw Cr	County	Culvert	LG				TD	
370553	1.1	Unnamed	Squaw Cr	County	Culvert	OK	100				
370554	1.2	Unnamed	Johnson Cr	County	Culvert	RR	67			TD	
370565	1.2	Johnson Cr	Sumas R	County	Culvert	OK	100				
370566	1.2	Squaw Cr	Johnson Cr	County	Culvert	RR	67			TD	
370567	1.1	Clearbrook Cr	Johnson Cr	County	Culvert	RR	67			TD	
370568	1.2	Pangborn Cr	Johnson Cr	County	Culvert	OK	100	0	0		
990397	1.2	Squaw Cr	Sumas R	State	Culvert	OK	100				
990512	1.1	Unnamed	Sumas R	State	Culvert	UD					
995588	1.1	Unnamed	Swift Cr	State	Culvert						

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[3] Survey Type: TD – Threshold Determination, LME – Lineal Map Estimate, ETD – Expanded threshold determination, UETD – Unexpanded Threshold Determination, FS, PS – Full habitat Survey, RSFS – Reduced Sampling Physical Survey.

Site ID	Sequencer[1]	Stream	Tributary To	Owner Type	Feature	Repair[2] Status	% Passable	Additional Barriers		Survey Type[3]	Total PI
								Upstream	Downstream		
995589	1.1	Unnamed	Swift Cr	State	Culvert						
995590	1.1	Unnamed	Swift Cr	State	Culvert						
995591	1.1	Unnamed	Swift Cr	State	Culvert						
995771	1.1	Unnamed	Saar Cr	State	Culvert	UD					
995772	1.1	Unnamed	Saar Cr	State	Culvert	UD					
995773	1.1	Unnamed	Saar Cr	State	Culvert						
995774	1.1	Unnamed	Saar Cr	State	Culvert	RR	33	1	2	UETD	
995785	1.2	Unnamed	Sumas R	State	Culvert	OK	100				
995786	1.1	Unnamed	Sumas R	State	Culvert						
995787	1.1	Bone Cr	Sumas R	State	Culvert	OK	100				
996060	1.1	Unnamed	Saar Cr	Private	Culvert	RR	0			TD	
996061		Unnamed	Saar Cr	Private	Dam	RR	0			TD	
996166	1.1	Unnamed	Squaw Cr	State	Culvert	OK	100				
996167	1.1	Unnamed	Squaw Cr	State	Culvert	OK	100				
996170	1.1	Unnamed	Saar Cr	Private	Culvert	UD	33			TD	
MB6	1.1	Morovitz Cr	Swift Cr	Federal	Culvert	RR	67			TD	

[1] Sequencer: 1:2 – One culvert of two, 1:3 - One culvert of three, etc.

[2] Repair Status: OK – No action needed, RR – Repair required, LG – Habitat gain is less than 200 m., UD – Habitat gain undetermined, FX – Fixed, Blank – No fish use potential.

[3] Survey Type: TD – Threshold Determination, LME – Lineal Map Estimate, ETD – Expanded threshold determination, UETD – Unexpanded Threshold Determination, FS, PS – Full habitat Survey, RSFS – Reduced Sampling Physical Survey.

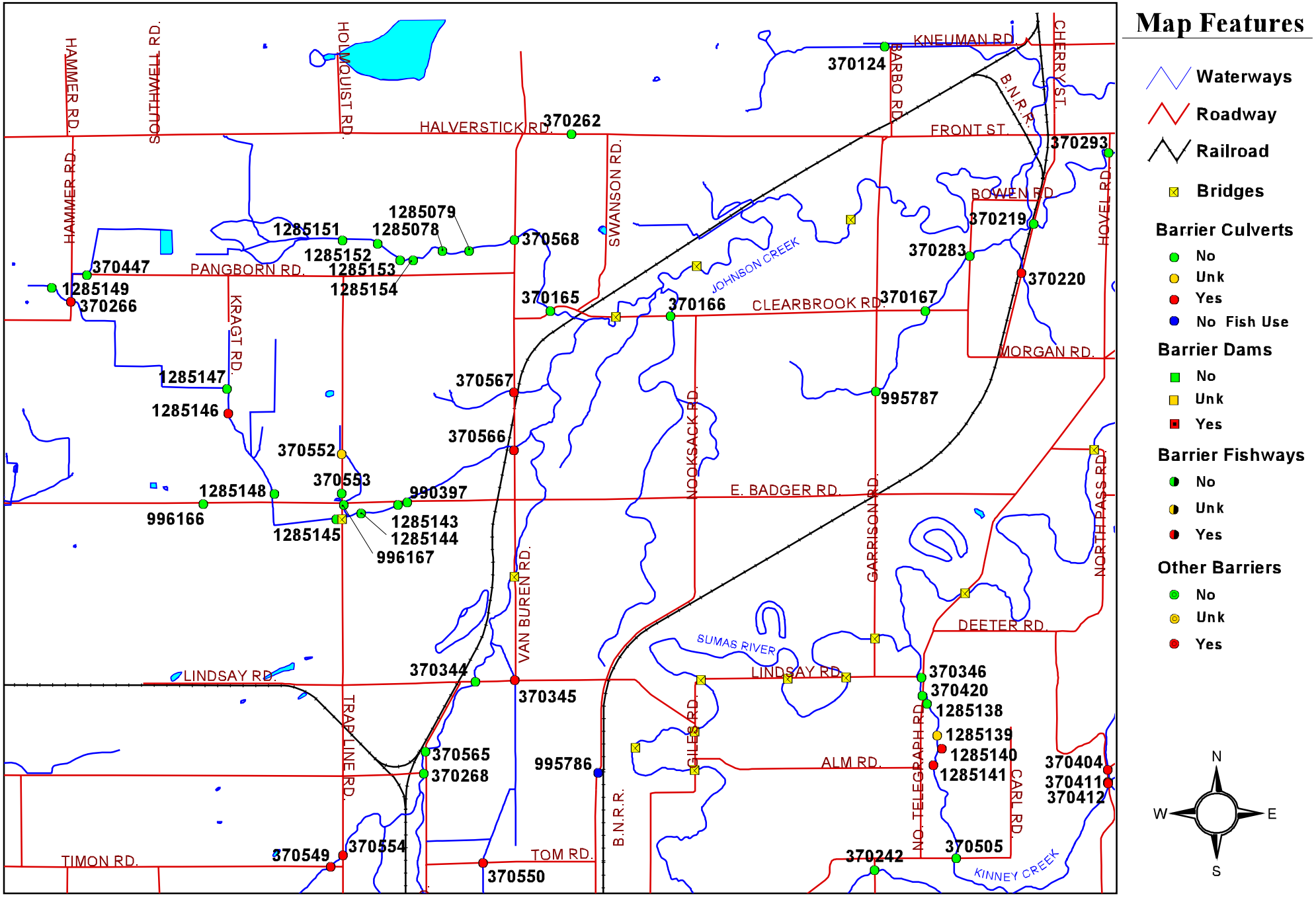

Figure 1. Johnson Creek Features

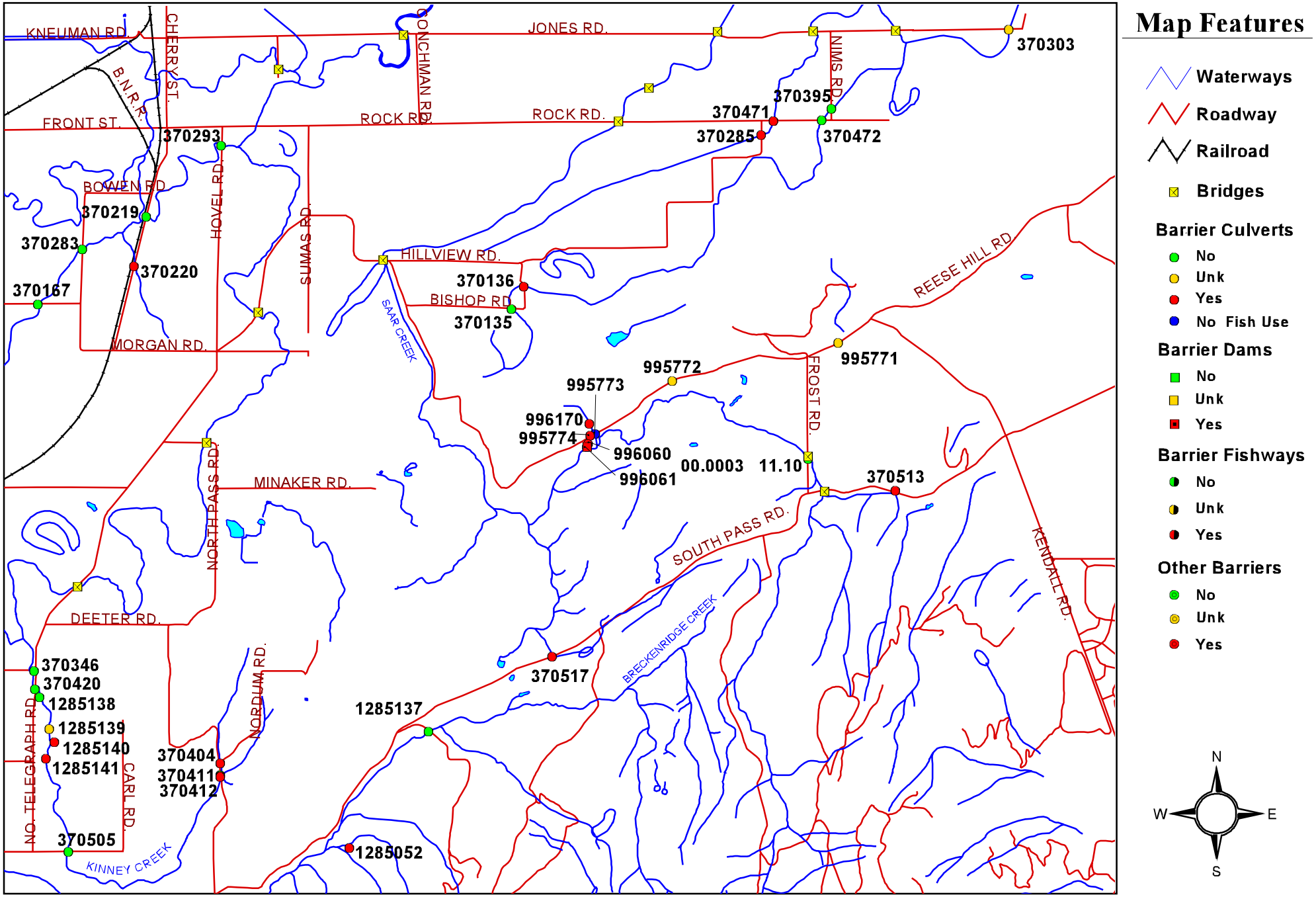

Figure 2. Kinney and Saar Creek Features

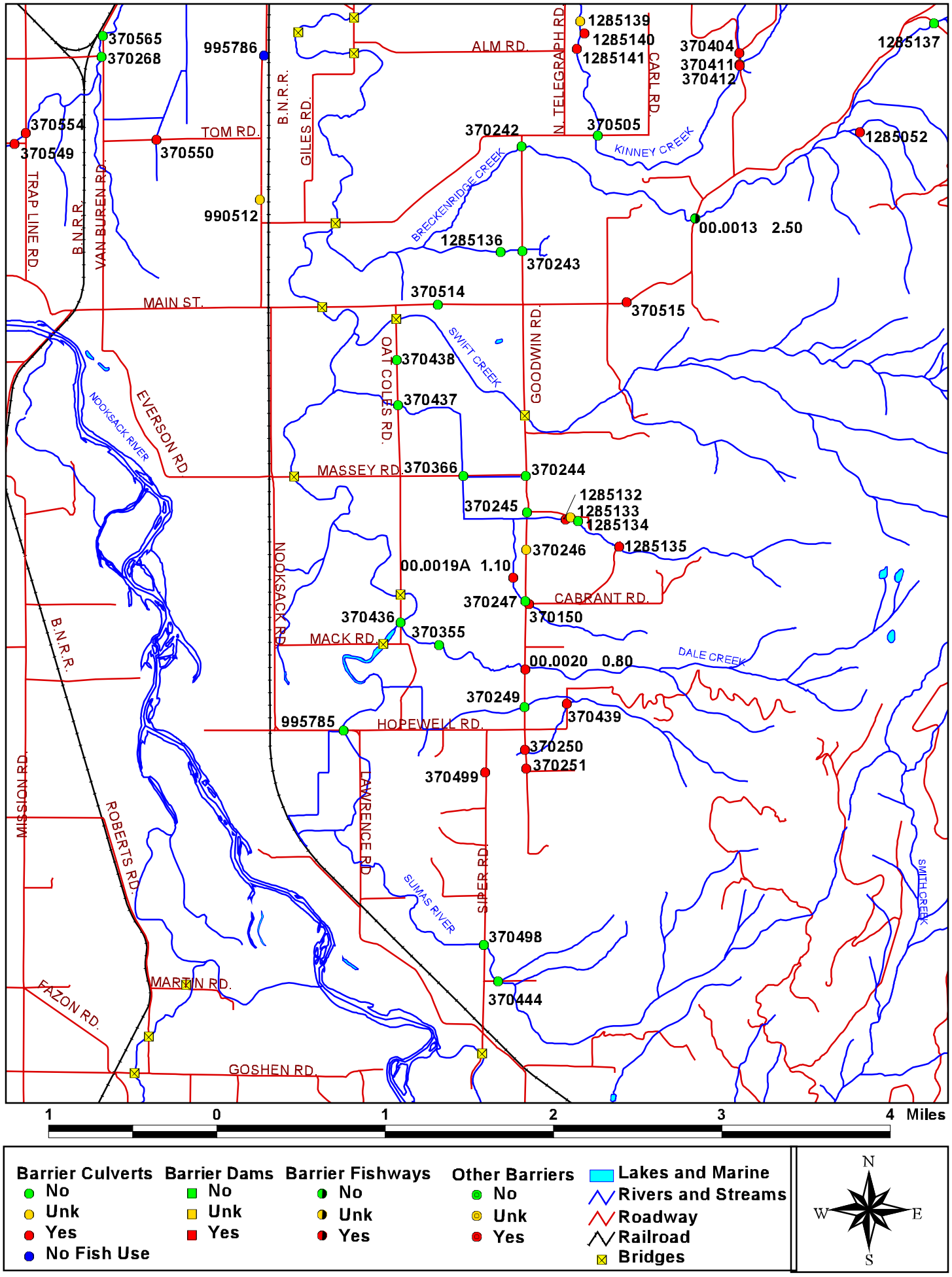

Figure 3. Upper Sumas River Features.

Sumas Culvert Barriers:

PI TOTAL: **16.20**

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	1285146	Shape:	RND
Stream:	Squaw Cr	Material:	CST
Trib To:	Johnson Cr	Span (m):	1.22
Owner:	Private	Length (m):	6.10
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Slope	Lineal Gain (m):	3,384
Ds Barriers:	0	Spawn Area (m2):	0
Us Barriers:	1	Rear Area (m2):	2,860

PI TOTAL: **15.61**

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	1285140	Shape:	ELL
Stream:	Kinney Cr	Material:	CST
Trib To:	Sumas R	Span (m):	1.70
Owner:	Private	Length (m):	6.20
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Gradient	Lineal Gain (m):	5,171
Ds Barriers:	0	Spawn Area (m2):	8,188
Us Barriers:	3	Rear Area (m2):	7,634

PI TOTAL: **15.47**

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	1285141	Shape:	RND
Stream:	Kinney Cr	Material:	CST
Trib To:	Sumas R	Span (m):	0.76
Owner:	Private	Length (m):	5.50
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Slope	Lineal Gain (m):	5,024
Ds Barriers:	1	Spawn Area (m2):	0
Us Barriers:	2	Rear Area (m2):	7,349

PI TOTAL: **15.47**

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	1285141	Shape:	RND
Stream:	Kinney Cr	Material:	CST
Trib To:	Sumas R	Span (m):	0.76
Owner:	Private	Length (m):	5.40
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Slope	Lineal Gain (m):	5,024
Ds Barriers:	1	Spawn Area (m2):	0
Us Barriers:	2	Rear Area (m2):	7,349

Culvert Shape: RND = Round, BOX = Rectangular, ARCH = Bottomless arch, SQSH = Pipe arch, ELL = Ellipse, OTH = Other.

Culvert Material: PCC = Pre-cast concrete, CPC = Cast in place concrete, CST = Corrugated steel, SST = Smooth Steel, CAL = Corrugated aluminum, SPS = Structuural plate steel, SPA = Structural plate aluminum, PVC = Plastic, TMB = Timber, MRY = Masonary, OTH = Other

Sumas Culvert Barriers:

PI TOTAL: **15.47**

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	1285141	Shape:	RND
Stream:	Kinney Cr	Material:	CST
Trib To:	Sumas R	Span (m):	0.62
Owner:	Private	Length (m):	5.70
BARRIER STATUS		**HABITAT GAIN**	
Problem:	slope	Lineal Gain (m):	5,024
Ds Barriers:	1	Spawn Area (m2):	0
Us Barriers:	2	Rear Area (m2):	7,349

PI TOTAL: **11.91**

No Image Available

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370266	Shape:	RND
Stream:	Squaw Cr	Material:	PCC
Trib To:	Johnson Cr	Span (m):	0.91
Owner:	County	Length (m):	12.19
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Slope	Lineal Gain (m):	1,028
Ds Barriers:	1	Spawn Area (m2):	0
Us Barriers:	0	Rear Area (m2):	836

PI TOTAL: **10.74**

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	1285052	Shape:	RND
Stream:	Unnamed	Material:	CST
Trib To:	Breckenridge Cr	Span (m):	0.61
Owner:	Private	Length (m):	4.96
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Outfall drop and slo	Lineal Gain (m):	852
Ds Barriers:	0	Spawn Area (m2):	1,749
Us Barriers:	0	Rear Area (m2):	1,145

PI TOTAL: **8.92**

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370411	Shape:	RND
Stream:	Kinney Cr	Material:	PCC
Trib To:	Sumas R	Span (m):	0.76
Owner:	County	Length (m):	14.33
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Outfall drop	Lineal Gain (m):	1,938
Ds Barriers:	2	Spawn Area (m2):	0
Us Barriers:	1	Rear Area (m2):	545

Culvert Shape: RND = Round, BOX = Rectangular, ARCH = Bottomless arch, SQSH = Pipe arch, ELL = Ellipse, OTH = Other.

Culvert Material: PCC = Pre-cast concrete, CPC = Cast in place concrete, CST = Corrugated steel, SST = Smooth Steel, CAL = Corrugated aluminum, SPS = Structuural plate steel, SPA = Structural plate aluminum, PVC = Plastic, TMB = Timber, MRY = Masonary, OTH = Other

Sumas Culvert Barriers:

PI TOTAL: 8.24

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	1285132	Shape:	RND
Stream:	Goodwin Cr	Material:	CST
Trib To:	Sumas R	Span (m):	1.10
Owner:	Private	Length (m):	4.20
BARRIER STATUS		**HABITAT GAIN**	
Problem:	bedload blockage	Lineal Gain (m):	1,485
Ds Barriers:	0	Spawn Area (m2):	1,852
Us Barriers:	2	Rear Area (m2):	1,360

PI TOTAL: 8.11

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	1285133	Shape:	RND
Stream:	Goodwin Cr	Material:	PCC
Trib To:	Sumas R	Span (m):	0.92
Owner:	Private	Length (m):	6.60
BARRIER STATUS		**HABITAT GAIN**	
Problem:	velocity	Lineal Gain (m):	1,432
Ds Barriers:	1	Spawn Area (m2):	0
Us Barriers:	1	Rear Area (m2):	1,289

PI TOTAL: 7.15

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370404	Shape:	RND
Stream:	Unnamed	Material:	CAL
Trib To:	Kinney Cr	Span (m):	0.61
Owner:	County	Length (m):	20.73
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Outfall drop	Lineal Gain (m):	945
Ds Barriers:	3	Spawn Area (m2):	0
Us Barriers:	0	Rear Area (m2):	225

PI TOTAL: 6.15

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	1285135	Shape:	RND
Stream:	Goodwin Cr	Material:	CST
Trib To:	Sumas R	Span (m):	1.20
Owner:	Private	Length (m):	9.25
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Outfall drop, slope	Lineal Gain (m):	939
Ds Barriers:	2	Spawn Area (m2):	0
Us Barriers:	0	Rear Area (m2):	762

Culvert Shape: RND = Round, BOX = Rectangular, ARCH = Bottomless arch, SQSH = Pipe arch, ELL = Ellipse, OTH = Other.

Culvert Material: PCC = Pre-cast concrete, CPC = Cast in place concrete, CST = Corrugated steel, SST = Smooth Steel, CAL = Corrugated aluminum, SPS = Structuural plate steel, SPA = Structural plate aluminum, PVC = Plastic, TMB = Timber, MRY = Masonary, OTH = Other

Sumas Culvert Barriers:

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370251	Shape:	RND
Stream:	Unnamed	Material:	PCC
Trib To:	Sumas R	Span (m):	0.91
Owner:	County	Length (m):	20.42
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Slope	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370345	Shape:	RND
Stream:	Heath Ditch	Material:	CAL
Trib To:	Johnson Cr	Span (m):	1.52
Owner:	County	Length (m):	24.69
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Slope	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

No Image Available

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370285	Shape:	RND
Stream:	Unnamed	Material:	CAL
Trib To:	Arnold SL	Span (m):	0.91
Owner:	County	Length (m):	12.19
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Depth	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

No Image Available

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370285	Shape:	RND
Stream:	Unnamed	Material:	CAL
Trib To:	Arnold SL	Span (m):	0.91
Owner:	County	Length (m):	12.19
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Depth	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

Culvert Shape: RND = Round, BOX = Rectangular, ARCH = Bottomless arch, SQSH = Pipe arch, ELL = Ellipse, OTH = Other.

Culvert Material: PCC = Pre-cast concrete, CPC = Cast in place concrete, CST = Corrugated steel, SST = Smooth Steel, CAL = Corrugated aluminum, SPS = Structuural plate steel, SPA = Structural plate aluminum, PVC = Plastic, TMB = Timber, MRY = Masonary, OTH = Other

Sumas Culvert Barriers:

PI TOTAL:

GENERAL INFORMATION

Site ID:	370250
Stream:	Unnamed
Trib To:	Sumas R
Owner:	County

CULVERT ATTRIBUTES

Shape:	RND
Material:	CAL
Span (m):	0.91
Length (m):	24.38

BARRIER STATUS

Problem:	Outfall drop
Ds Barriers:	
Us Barriers:	

HABITAT GAIN

Lineal Gain (m):	
Spawn Area (m2):	
Rear Area (m2):	

PI TOTAL:

No Image Available

GENERAL INFORMATION

Site ID:	370243
Stream:	Gold Cr
Trib To:	Breckenridge Cr
Owner:	County

CULVERT ATTRIBUTES

Shape:	BOX
Material:	PCC
Span (m):	1.83
Length (m):	12.50

BARRIER STATUS

Problem:	
Ds Barriers:	
Us Barriers:	

HABITAT GAIN

Lineal Gain (m):	
Spawn Area (m2):	
Rear Area (m2):	

PI TOTAL:

GENERAL INFORMATION

Site ID:	370220
Stream:	Unnamed
Trib To:	Bone Cr
Owner:	County

CULVERT ATTRIBUTES

Shape:	RND
Material:	CST
Span (m):	0.76
Length (m):	11.58

BARRIER STATUS

Problem:	Depth
Ds Barriers:	
Us Barriers:	

HABITAT GAIN

Lineal Gain (m):	
Spawn Area (m2):	
Rear Area (m2):	

PI TOTAL:

No Image Available

GENERAL INFORMATION

Site ID:	00.0019A 1.10
Stream:	Unnamed
Trib To:	Goodwin Cr
Owner:	Private

CULVERT ATTRIBUTES

Shape:	RND
Material:	CST
Span (m):	0.70
Length (m):	7.01

BARRIER STATUS

Problem:	outfall drop
Ds Barriers:	
Us Barriers:	

HABITAT GAIN

Lineal Gain (m):	
Spawn Area (m2):	
Rear Area (m2):	

Culvert Shape: RND = Round, BOX = Rectangular, ARCH = Bottomless arch, SQSH = Pipe arch, ELL = Ellipse, OTH = Other.

Culvert Material: PCC = Pre-cast concrete, CPC = Cast in place concrete, CST = Corrugated steel, SST = Smooth Steel, CAL = Corrugated aluminum, SPS = Structuural plate steel, SPA = Structural plate aluminum, PVC = Plastic, TMB = Timber, MRY = Masonary, OTH = Other

Sumas Culvert Barriers:

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370136	Shape:	RND
Stream:	Arnold Sl	Material:	CAL
Trib To:	Saar Cr	Span (m):	0.91
Owner:	County	Length (m):	18.59
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Depth	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	00.0020 0.80	Shape:	RND
Stream:	Dale Cr	Material:	CST
Trib To:	Sumas R	Span (m):	1.83
Owner:	County	Length (m):	21.64
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Outfall drop	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370150	Shape:	RND
Stream:	Unnamed	Material:	PCC
Trib To:	Goodwin Cr	Span (m):	0.91
Owner:	County	Length (m):	22.25
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Slope	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370517	Shape:	RND
Stream:	Unnamed	Material:	PCC
Trib To:	Saar Cr	Span (m):	0.91
Owner:	County	Length (m):	17.37
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Depth	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

Culvert Shape: RND = Round, BOX = Rectangular, ARCH = Bottomless arch, SQSH = Pipe arch, ELL = Ellipse, OTH = Other.

Culvert Material: PCC = Pre-cast concrete, CPC = Cast in place concrete, CST = Corrugated steel, SST = Smooth Steel, CAL = Corrugated aluminum, SPS = Structuural plate steel, SPA = Structural plate aluminum, PVC = Plastic, TMB = Timber, MRY = Masonary, OTH = Other

Sumas Culvert Barriers:

PI TOTAL:

No Image Available

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	996170	Shape:	RND
Stream:	Unnamed	Material:	PVC
Trib To:	Saar Cr	Span (m):	0.46
Owner:	Private	Length (m):	17.90
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Slope;Outfall	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	996060	Shape:	RND
Stream:	Unnamed	Material:	PVC
Trib To:	Saar Cr	Span (m):	0.61
Owner:	Private	Length (m):	12.20
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Slope	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	995774	Shape:	RND
Stream:	Unnamed	Material:	PCC
Trib To:	Saar Cr	Span (m):	0.61
Owner:	State	Length (m):	39.08
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Slope	Lineal Gain (m):	
Ds Barriers:	2	Spawn Area (m2):	
Us Barriers:	1	Rear Area (m2):	

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370567	Shape:	RND
Stream:	Clearbrook Cr	Material:	PCC
Trib To:	Johnson Cr	Span (m):	0.91
Owner:	County	Length (m):	14.63
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Depth	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

Culvert Shape: RND = Round, BOX = Rectangular, ARCH = Bottomless arch, SQSH = Pipe arch, ELL = Ellipse, OTH = Other.

Culvert Material: PCC = Pre-cast concrete, CPC = Cast in place concrete, CST = Corrugated steel, SST = Smooth Steel, CAL = Corrugated aluminum, SPS = Structuural plate steel, SPA = Structural plate aluminum, PVC = Plastic, TMB = Timber, MRY = Masonary, OTH = Other

Sumas Culvert Barriers:

PI TOTAL:

No Image Available

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370566	Shape:	RND
Stream:	Squaw Cr	Material:	PCC
Trib To:	Johnson Cr	Span (m):	1.22
Owner:	County	Length (m):	14.02
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Velocity	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

No Image Available

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370566	Shape:	RND
Stream:	Squaw Cr	Material:	PCC
Trib To:	Johnson Cr	Span (m):	1.22
Owner:	County	Length (m):	14.02
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Velocity	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370554	Shape:	RND
Stream:	Unnamed	Material:	PCC
Trib To:	Johnson Cr	Span (m):	0.46
Owner:	County	Length (m):	10.67
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Slope	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370554	Shape:	RND
Stream:	Unnamed	Material:	PCC
Trib To:	Johnson Cr	Span (m):	0.46
Owner:	County	Length (m):	10.67
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Double pipe	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

Culvert Shape: RND = Round, BOX = Rectangular, ARCH = Bottomless arch, SQSH = Pipe arch, ELL = Ellipse, OTH = Other.

Culvert Material: PCC = Pre-cast concrete, CPC = Cast in place concrete, CST = Corrugated steel, SST = Smooth Steel, CAL = Corrugated aluminum, SPS = Structuural plate steel, SPA = Structural plate aluminum, PVC = Plastic, TMB = Timber, MRY = Masonary, OTH = Other

Sumas Culvert Barriers:

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370550	Shape:	RND
Stream:	Heath Ditch	Material:	CAL
Trib To:	Johnson Cr	Span (m):	0.91
Owner:	County	Length (m):	13.41
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Slope	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370412	Shape:	RND
Stream:	Unnamed	Material:	PCC
Trib To:	Kinney Cr	Span (m):	0.61
Owner:	County	Length (m):	14.02
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Outfall drop	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370549	Shape:	RND
Stream:	Unnamed	Material:	PCC
Trib To:	Johnson Cr	Span (m):	0.61
Owner:	County	Length (m):	9.75
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Depth	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

No Image Available

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370436	Shape:	SQSH
Stream:	Sumas R	Material:	CST
Trib To:	Fraser R	Span (m):	1.52
Owner:	County	Length (m):	12.19
BARRIER STATUS		**HABITAT GAIN**	
Problem:		Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

Culvert Shape: RND = Round, BOX = Rectangular, ARCH = Bottomless arch, SQSH = Pipe arch, ELL = Ellipse, OTH = Other.

Culvert Material: PCC = Pre-cast concrete, CPC = Cast in place concrete, CST = Corrugated steel, SST = Smooth Steel, CAL = Corrugated aluminum, SPS = Structuural plate steel, SPA = Structural plate aluminum, PVC = Plastic, TMB = Timber, MRY = Masonary, OTH = Other

Sumas Culvert Barriers:

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370515	Shape:	RND
Stream:	Unnamed	Material:	PCC
Trib To:	Swift Cr	Span (m):	0.61
Owner:	County	Length (m):	27.13
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Slope	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

No Image Available

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370513	Shape:	RND
Stream:	Unnamed	Material:	PCC
Trib To:	Saar Cr	Span (m):	0.61
Owner:	County	Length (m):	11.28
BARRIER STATUS		**HABITAT GAIN**	
Problem:	depth and velocity	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370499	Shape:	RND
Stream:	Unnamed	Material:	PCC
Trib To:	Sumas R	Span (m):	0.46
Owner:	County	Length (m):	9.45
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Outfall drop	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370499	Shape:	RND
Stream:	Unnamed	Material:	PCC
Trib To:	Sumas R	Span (m):	0.46
Owner:	County	Length (m):	9.45
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Outfall drop	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

Culvert Shape: RND = Round, BOX = Rectangular, ARCH = Bottomless arch, SQSH = Pipe arch, ELL = Ellipse, OTH = Other.

Culvert Material: PCC = Pre-cast concrete, CPC = Cast in place concrete, CST = Corrugated steel, SST = Smooth Steel, CAL = Corrugated aluminum, SPS = Structuural plate steel, SPA = Structural plate aluminum, PVC = Plastic, TMB = Timber, MRY = Masonary, OTH = Other

Sumas Culvert Barriers:

PI TOTAL:

No Image Available

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370498	Shape:	RND
Stream:	Sumas R	Material:	PCC
Trib To:	Fraser R	Span (m):	0.91
Owner:	County	Length (m):	12.50
BARRIER STATUS		**HABITAT GAIN**	
Problem:		Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

No Image Available

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370498	Shape:	RND
Stream:	Sumas R	Material:	PCC
Trib To:	Fraser R	Span (m):	0.91
Owner:	County	Length (m):	13.72
BARRIER STATUS		**HABITAT GAIN**	
Problem:		Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

No Image Available

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370471	Shape:	SQSH
Stream:	Unnamed	Material:	CST
Trib To:	Arnold SL	Span (m):	1.52
Owner:	County	Length (m):	10.97
BARRIER STATUS		**HABITAT GAIN**	
Problem:	depth	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

No Image Available

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370444	Shape:	RND
Stream:	Sumas R	Material:	PCC
Trib To:	Fraser R	Span (m):	0.91
Owner:	County	Length (m):	15.85
BARRIER STATUS		**HABITAT GAIN**	
Problem:		Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

Culvert Shape: RND = Round, BOX = Rectangular, ARCH = Bottomless arch, SQSH = Pipe arch, ELL = Ellipse, OTH = Other.

Culvert Material: PCC = Pre-cast concrete, CPC = Cast in place concrete, CST = Corrugated steel, SST = Smooth Steel, CAL = Corrugated aluminum, SPS = Structuural plate steel, SPA = Structural plate aluminum, PVC = Plastic, TMB = Timber, MRY = Masonary, OTH = Other

Sumas Culvert Barriers:

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370439	Shape:	RND
Stream:	Hoff Cr	Material:	CAL
Trib To:	Sumas R	Span (m):	1.22
Owner:	County	Length (m):	12.19
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Slope	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

No Image Available

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	MB6	Shape:	SQSH
Stream:	Morovitz Cr	Material:	SPS
Trib To:	Swift Cr	Span (m):	2.32
Owner:	Federal	Length (m):	21.95
BARRIER STATUS		**HABITAT GAIN**	
Problem:	Slope, outfall drop,	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

PI TOTAL:

GENERAL INFORMATION		CULVERT ATTRIBUTES	
Site ID:	370550	Shape:	RND
Stream:	Heath Ditch	Material:	PCC
Trib To:	Johnson Cr	Span (m):	0.91
Owner:	County	Length (m):	12.80
BARRIER STATUS		**HABITAT GAIN**	
Problem:	slope	Lineal Gain (m):	
Ds Barriers:		Spawn Area (m2):	
Us Barriers:		Rear Area (m2):	

Culvert Shape: RND = Round, BOX = Rectangular, ARCH = Bottomless arch, SQSH = Pipe arch, ELL = Ellipse, OTH = Other.

Culvert Material: PCC = Pre-cast concrete, CPC = Cast in place concrete, CST = Corrugated steel, SST = Smooth Steel, CAL = Corrugated aluminum, SPS = Structuural plate steel, SPA = Structural plate aluminum, PVC = Plastic, TMB = Timber, MRY = Masonary, OTH = Other

Sumas Barrier Dams:

PI TOTAL:

GENERAL INFORMATION

Site ID:	996061
Stream:	Unnamed
Trib To:	Saar Cr
Owner:	Private

DAM ATTRIBUTES

Dam Name:	
Height (m):	1
Span:	Full

BARRIER STATUS

Fish passage (%):	0
Ds Barriers:	
Us Barriers:	

HABITAT GAIN

Lineal Gain (m):	
Spawn Area (m2):	
Rear Area (m2):	