

APPENDIX B I-405 STREAM SURVEY SUMMARY

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**Upper Rolling Hills Creek
Habitat Survey Summary Sheet**

Large Woody Debris Metrics		In-Stream Habitat Type Metrics	
Channel Zone 1 - Number of LWD	0	Stream Discharge	.184 cfs
Channel Zone 1 - % of total LWD	0%	HUs Per Mile	69.09
Channel Zone 2 - Number of LWD	6	Pools per Mile	8.64
Channel Zone 2 - % of total LWD	60%	Mean Residual Pool Depth (inches)	6.69
Channel Zone 3 - Number of LWD	4	SD of Residual Pool Depth	
Channel Zone 3 - % of total LWD	40%	Mean Channel Alteration	Marginal
Total number of LWD	10	Mean Left Bank Stability	Marginal
Number of Key LWD Pieces	0	Mean Right Bank Stability	Marginal
% Key LWD Pieces	0%	Mean Bank Stability	Marginal
LWD Pieces per Mile	86.36	Mean Left Bank Vegetative Protection	Marginal
		Mean Right Bank Vegetative Protection	Marginal
		Mean Vegetative Protection Overall	Marginal
Existing Stream Geomorphology Metrics		Mean Left Bank Riparian Zone Width	Marginal
Mean Wetted Width (feet)	4.72	Mean Right Bank Riparian Zone Width	Suboptimal
Mean Bankfull Width (feet)	8.17	Mean Riparian Zone Width	Suboptimal
Mean Bankfull Height (feet)	0.92		
Mean Stream Depth (inches)	2.64		
Mean Reach Slope	3.08%	Substrate Composition Metrics	
Mean Left Bank Angle	49.09°	Dominant Substrate Class Size	Sand
Mean Right Bank Angle	50.45°	% Boulder (250 to 4000 MM)	0%
SD of Wetted Width (feet)	1.71	% Cobble (64 to 255 MM)	0%
SD of Bankfull Width (feet)	2.40	% Coarse Gravel (16 to 64 MM)	27%
SD of Bankfull Height (feet)	0.16	% Fine Gravel (2 to 16 MM)	25%
SD of Stream Depth (inches)	1.64	% Sand (.06 to 2 MM)	38%
SD of Left Bank Angle	33.68°	% Silt/Sand/Muck	7%
SD of Right Bank Angle	30.53°	% Hardpan	0%
Total Stream Length Surveyed (feet)	611.41	% Wood	0%
		Mean % Embeddedness	50.91%
		SD of % Embeddedness	46.40%
Quality of Pool Metrics			
Mean Pool Quality Index	3.00		
SD of Pool Quality Index		Riparian Vegetation Metrics	
Total Number of Pools	1	% Canopy Vegetation Cover	Heavy (40-70%)
		% Mid Layer Vegetation Cover	Very Heavy (>75%)
Canopy Cover Measurements			
% Canopy Cover	97.09%		

**Lower Rolling Hills Creek
Habitat Survey Summary Sheet**

Large Woody Debris Metrics		In-Stream Habitat Type Metrics	
Channel Zone 1 - Number of LWD	0	Stream Discharge	1.437 cfs
Channel Zone 1 - % of total LWD	0%	HUs Per Mile	101.80
Channel Zone 2 - Number of LWD	0	Pools per Mile	59.39
Channel Zone 2 - % of total LWD	0%	Mean Residual Pool Depth (inches)	11.53
Channel Zone 3 - Number of LWD	0	SD of Residual Pool Depth (inches)	4.21
Channel Zone 3 - % of total LWD	0%	Mean Channel Alteration	Poor
Total number of LWD	0	Mean Left Bank Stability	Poor
Number of Key LWD Pieces	0	Mean Right Bank Stability	Poor
% Key LWD Pieces	0%	Mean Bank Stability	Poor
LWD Pieces per Mile		Mean Left Bank Vegetative Protection	Poor
		Mean Right Bank Vegetative Protection	Poor
		Mean Vegetative Protection Overall	Poor
Existing Stream Geomorphology Metrics		Mean Left Bank Riparian Zone Width	Poor
Mean Wetted Width (feet)	7.51	Mean Right Bank Riparian Zone Width	Poor
Mean Bankfull Width (feet)	10.99	Mean Riparian Zone Width	Poor
Mean Bankfull Height (feet)	2.23		
Mean Stream Depth (inches)	7.19		
Mean Reach Slope	1%	Substrate Composition Metrics	
Mean Left Bank Angle	93°	Dominant Substrate Class Size	Fine Gravel
Mean Right Bank Angle	47°	% Bedrock (smooth)	3%
SD of Wetted Width (feet)	1.02	% Boulder (250 to 4000 MM)	0%
SD of Bankfull Width (feet)	1.84	% Cobble (64 to 255 MM)	15%
SD of Bankfull Height (feet)	0.33	% Coarse Gravel (16 to 64 MM)	5%
SD of Stream Depth (inches)	4.56	% Fine Gravel (2 to 16 MM)	35%
SD of Left Bank Angle	32°	% Sand (.06 to 2 MM)	28%
SD of Right Bank Angle	26°	% Silt/Sand/Muck	15%
Total Stream Length Surveyed (feet)	622.41	% Hardpan	0%
		% Wood	4%
		Mean % Embeddedness	69%
Quality of Pool Metrics		SD of % Embeddedness	34%
Mean Pool Quality Index	5.86		
SD of Pool Quality Index	0.69		
Total Number of Pools	7	Riparian Vegetation Metrics	
		% Canopy Vegetation Cover	Sparse (<10%)
Canopy Cover Measurements		% Mid Layer Vegetation Cover	Moderate (10-40%)
% Canopy Cover	89%		

**Trib to Cedar
Habitat Survey Summary Sheet**

Large Woody Debris Metrics		In-Stream Habitat Type Metrics	
Channel Zone 1 - Number of LWD	0	Stream Discharge	
Channel Zone 1 - % of total LWD	0%	HUs Per Mile	16.98
Channel Zone 2 - Number of LWD	2	Pools per Mile	0
Channel Zone 2 - % of total LWD	25%	Mean Residual Pool Depth (inches)	
Channel Zone 3 - Number of LWD	6	SD of Residual Pool Depth (inches)	
Channel Zone 3 - % of total LWD	75%	Mean Channel Alteration	Suboptimal
Total number of LWD	8	Mean Left Bank Stability	Marginal
Number of Key LWD Pieces	0	Mean Right Bank Stability	Marginal
% Key LWD Pieces	0%	Mean Bank Stability	Marginal
LWD Pieces per Mile	135.82	Mean Left Bank Vegetative Protection	Marginal
		Mean Right Bank Vegetative Protection	Marginal
Existing Stream Geomorphology Metrics		Mean Vegetative Protection Overall	Marginal
Mean Wetted Width (feet)	1.61	Mean Left Bank Riparian Zone Width	Suboptimal
Mean Bankfull Width (feet)	5.15	Mean Right Bank Riparian Zone Width	Suboptimal
Mean Bankfull Height (feet)	1.15	Mean Riparian Zone Width	Suboptimal
Mean Stream Depth (inches)	0.67		
Mean Reach Slope	9.69%	Substrate Composition Metrics	
Mean Left Bank Angle	42.50	Dominant Substrate Class Size	Fine Gravel
Mean Right Bank Angle	33.33	% Boulder (250 to 4000 MM)	0%
SD of Wetted Width (feet)	0.23	% Cobble (64 to 255 MM)	0%
SD of Bankfull Width (feet)	0.98	% Coarse Gravel (16 to 64 MM)	3%
SD of Bankfull Height (feet)	0.39	% Fine Gravel (2 to 16 MM)	50%
SD of Stream Depth (inches)	0.34	% Sand (.06 to 2 MM)	47%
SD of Left Bank Angle	18.91	% Silt/Sand/Muck	0%
SD of Right Bank Angle	23.80	% Hardpan	0%
Total Stream Length Surveyed (feet)	311.01	% Wood	0%
		Mean % Embeddedness	62.67%
Quality of Pool Metrics		SD of % Embeddedness	37.87%
Mean Pool Quality Index			
SD of Pool Quality Index		Riparian Vegetation Metrics	
Total Number of Pools	0	% Canopy Vegetation Cover	Heavy (40-70%)
		% Mid Layer Vegetation Cover	Very Heavy (>75%)
Canopy Cover Measurements			
% Canopy Cover	95.08%		

**Gilliam Creek
Habitat Survey Summary Sheet**

Large Woody Debris Metrics		In-Stream Habitat Type Metrics	
Channel Zone 1 - Number of LWD	6	Stream Discharge	4.436 cfs
Channel Zone 1 - % of total LWD	15%	HUs Per Mile	75.31
Channel Zone 2 - Number of LWD	20	Pools per Mile	24.36
Channel Zone 2 - % of total LWD	50%	Mean Residual Pool Depth (inches)	15.35
Channel Zone 3 - Number of LWD	14	SD of Residual Pool Depth (inches)	9.25
Channel Zone 3 - % of total LWD	35%	Mean Channel Alteration	Marginal
Total number of LWD	40	Mean Left Bank Stability	Marginal
Number of Key LWD Pieces	0	Mean Right Bank Stability	Marginal
% Key LWD Pieces	0%	Mean Bank Stability	Marginal
LWD Pieces per Mile	88.60	Mean Left Bank Vegetative Protection	Poor
		Mean Right Bank Vegetative Protection	Poor
		Mean Vegetative Protection Overall	Poor
Existing Stream Geomorphology Metrics		Mean Left Bank Riparian Zone Width	Marginal
Mean Wetted Width (feet)	10.47	Mean Right Bank Riparian Zone Width	Marginal
Mean Bankfull Width (feet)	18.14	Mean Riparian Zone Width	Marginal
Mean Bankfull Height (feet)	3.02		
Mean Stream Depth (inches)	14.57	Substrate Composition Metrics	
Mean Reach Slope	1%	Dominant Substrate Class Size	Fine Gravel
Mean Left Bank Angle	64°	% Bedrock (smooth)	0%
Mean Right Bank Angle	55°	% Boulder (250 to 4000 MM)	3%
SD of Wetted Width (feet)	1.71	% Cobble (64 to 255 MM)	7%
SD of Bankfull Width (feet)	3.38	% Coarse Gravel (16 to 64 MM)	3%
SD of Bankfull Height (feet)	0.46	% Fine Gravel (2 to 16 MM)	20%
SD of Stream Depth (inches)	6.96	% Sand (.06 to 2 MM)	31%
SD of Left Bank Angle	28°	% Silt/Sand/Muck	26%
SD of Right Bank Angle	25°	% Hardpan	6%
Total Stream Length Surveyed (feet)	2383.97	% Wood	4%
		Mean % Embeddedness	63%
Quality of Pool Metrics		SD of % Embeddedness	44%
Mean Pool Quality Index	5.18		
SD of Pool Quality Index	1.4	Riparian Vegetation Metrics	
Total Number of Pools	11	% Canopy Vegetation Cover	Heavy (40-75%)
		% Mid Layer Vegetation Cover	Very Heavy (>75%)
Canopy Cover Measurements			
% Canopy Cover	90%		

**Tributary to Gilliam Creek
Habitat Survey Summary Sheet**

Large Woody Debris Metrics		In-Stream Habitat Type Metrics	
Channel Zone 1 - Number of LWD	0	Stream Discharge	N/A
Channel Zone 1 - % of total LWD	0%	HUs Per Mile	120.10
Channel Zone 2 - Number of LWD	0	Pools per Mile	0
Channel Zone 2 - % of total LWD	0%	Mean Residual Pool Depth (inches)	N/A
Channel Zone 3 - Number of LWD	0	SD of Residual Pool Depth (inches)	N/A
Channel Zone 3 - % of total LWD	0%	Mean Channel Alteration	Suboptimal
Total number of LWD	0	Mean Left Bank Stability	Suboptimal
Number of Key LWD Pieces	0	Mean Right Bank Stability	Suboptimal
% Key LWD Pieces	0%	Mean Bank Stability	Suboptimal
LWD Pieces per Mile	0.00	Mean Left Bank Vegetative Protection	Poor
		Mean Right Bank Vegetative Protection	Poor
		Mean Vegetative Protection Overall	Poor
Existing Stream Geomorphology Metrics		Mean Left Bank Riparian Zone Width	Poor
Mean Wetted Width (feet)	4.48	Mean Right Bank Riparian Zone Width	Poor
Mean Bankfull Width (feet)	9.58	Mean Riparian Zone Width	Poor
Mean Bankfull Height (feet)	4.58		
Mean Stream Depth (inches)	11.72		
Mean Reach Slope	6%	Substrate Composition Metrics	
Mean Left Bank Angle	39°	Dominant Substrate Class Size	Silt/Sand/Muck
Mean Right Bank Angle	16°	% Bedrock (smooth)	0%
SD of Wetted Width (feet)	0.46	% Boulder (250 to 4000 MM)	0%
SD of Bankfull Width (feet)	N/A	% Cobble (64 to 255 MM)	0%
SD of Bankfull Height (feet)	0.46	% Coarse Gravel (16 to 64 MM)	10%
SD of Stream Depth (inches)	2.14	% Fine Gravel (2 to 16 MM)	0%
SD of Left Bank Angle	30°	% Sand (.06 to 2 MM)	0%
SD of Right Bank Angle	08°	% Silt/Sand/Muck	90%
Total Stream Length Surveyed (feet)	43.97	% Hardpan	0%
		% Wood	0%
		% Other	0%
Quality of Pool Metrics		Mean % Embeddedness	90%
Mean Pool Quality Index	N/A	SD of % Embeddedness	32%
SD of Pool Quality Index	N/A		
Total Number of Pools	0		
		Riparian Vegetation Metrics	
Canopy Cover Measurements		% Canopy Vegetation Cover	Moderate (10-40%)
% Canopy Cover	82%	% Mid Layer Vegetation Cover	Very Heavy (>75%)

**Green River
Habitat Survey Summary Sheet**

Large Woody Debris Metrics		In-Stream Habitat Type Metrics	
Channel Zone 1 - Number of LWD	3	Stream Discharge	N/A
Channel Zone 1 - % of total LWD	38%	HUs Per (Mile)	2.68
Channel Zone 2 - Number of LWD	5	Pools per (Mile)	N/A
Channel Zone 2 - % of total LWD	63%	Mean Residual Pool Depth (inches)	N/A
Channel Zone 3 - Number of LWD	0	SD of Residual Pool Depth (inches)	N/A
Channel Zone 3 - % of total LWD	0%	Mean Channel Alteration	Poor
Total number of LWD	8	Mean Left Bank Stability	Optimal
Number of Key LWD Pieces	0	Mean Right Bank Stability	Optimal
% Key LWD Pieces	0%	Mean Bank Stability	Optimal
LWD Pieces per Mile	21.46	Mean Left Bank Vegetative Protection	Poor
		Mean Right Bank Vegetative Protection	Poor
		Mean Vegetative Protection Overall	Poor
Existing Stream Geomorphology Metrics		Mean Left Bank Riparian Zone Width	Poor
Mean Wetted Width (feet)	92.89	Mean Right Bank Riparian Zone Width	Poor
Mean Bankfull Width (feet)	99.68	Mean Riparian Zone Width	Poor
Mean Bankfull Height (feet)	2.53		
Mean Stream Depth (inches)	27.95		
Mean Reach Slope	N/A	Substrate Composition Metrics	
Mean Left Bank Angle	47°	Dominant Substrate Class Size	Boulder
Mean Right Bank Angle	38°	% Bedrock (smooth)	4%
SD of Wetted Width (feet)	9.68	% Boulder (250 to 4000 MM)	39%
SD of Bankfull Width (feet)	10.14	% Cobble (64 to 255 MM)	0%
SD of Bankfull Height (feet)	0.43	% Coarse Gravel (16 to 64 MM)	4%
SD of Stream Depth (inches)	3.34	% Fine Gravel (2 to 16 MM)	0%
SD of Left Bank Angle	11°	% Sand (.06 to 2 MM)	21%
SD of Right Bank Angle	15°	% Silt/Sand/Muck	32%
Total Stream Length Surveyed (feet)	1968.60	% Hardpan	0%
		% Wood	0%
		Mean % Embeddedness	59%
Quality of Pool Metrics		SD of % Embeddedness	44%
Mean Pool Quality Index	N/A		
SD of Pool Quality Index	N/A		
Total Number of Pools	N/A	Riparian Vegetation Metrics	
		% Canopy Vegetation Cover	Moderate (10-40%)
Canopy Cover Measurements		% Mid Layer Vegetation Cover	Very Heavy (>75%)
% Canopy Cover	15%		

**Panther Creek
Habitat Survey Summary Sheet**

Large Woody Debris Metrics		In-Stream Habitat Type Metrics	
Channel Zone 1 - Number of LWD	0	Stream Discharge	0.147 cfs
Channel Zone 1 - % of total LWD	0%	HUs Per Mile	22.51
Channel Zone 2 - Number of LWD	0	Pools per Mile	5.63
Channel Zone 2 - % of total LWD	0%	Mean Residual Pool Depth (inches)	9.84
Channel Zone 3 - Number of LWD	0	SD of Residual Pool Depth (inches)	N/A
Channel Zone 3 - % of total LWD	0%	Mean Channel Alteration	Poor
Total number of LWD	0	Mean Left Bank Stability	Suboptimal
Number of Key LWD Pieces	0	Mean Right Bank Stability	Suboptimal
% Key LWD Pieces	0%	Mean Bank Stability	Suboptimal
LWD Pieces per Mile		Mean Left Bank Vegetative Protection	Poor
		Mean Right Bank Vegetative Protection	Poor
		Mean Vegetative Protection Overall	Poor
Existing Stream Geomorphology Metrics		Mean Left Bank Riparian Zone Width	Marginal
Mean Wetted Width (feet)	3.22	Mean Right Bank Riparian Zone Width	Poor
Mean Bankfull Width (feet)	11.94	Mean Riparian Zone Width	Poor
Mean Bankfull Height (feet)	2.82		
Mean Stream Depth (inches)	5.51		
Mean Reach Slope	2%	Substrate Composition Metrics	
Mean Left Bank Angle	71°	Dominant Substrate Class Size	Silt/Sand/Muck
Mean Right Bank Angle	45°	% Bedrock (smooth)	0%
SD of Wetted Width (feet)	0.52	% Boulder (250 to 4000 MM)	4%
SD of Bankfull Width (feet)	4.10	% Cobble (64 to 255 MM)	8%
SD of Bankfull Height (feet)	0.69	% Coarse Gravel (16 to 64 MM)	0%
SD of Stream Depth (inches)	2.51	% Fine Gravel (2 to 16 MM)	8%
SD of Left Bank Angle	36°	% Sand (.06 to 2 MM)	12%
SD of Right Bank Angle	20°	% Silt/Sand/Muck	68%
Total Stream Length Surveyed (feet)	938.37	% Hardpan	0%
		% Wood	0%
		% Other	0%
Quality of Pool Metrics		Mean % Embeddedness	87%
Mean Pool Quality Index	4	SD of % Embeddedness	6%
SD of Pool Quality Index	N/A		
Total Number of Pools	1		
		Riparian Vegetation Metrics	
Canopy Cover Measurements		% Canopy Vegetation Cover	Absent
% Canopy Cover	53%	% Mid Layer Vegetation Cover	Moderate (10-40%)

**Tributary to Rolling Hills Creek
Habitat Survey Summary Sheet**

Large Woody Debris Metrics		In-Stream Habitat Type Metrics	
Channel Zone 1 - Number of LWD	0	Stream Discharge	N/A
Channel Zone 1 - % of total LWD	0%	HUs Per Mile	64.37
Channel Zone 2 - Number of LWD	0	Pools per Mile	0.00
Channel Zone 2 - % of total LWD	0%	Mean Residual Pool Depth (inches)	N/A
Channel Zone 3 - Number of LWD	0	SD of Residual Pool Depth (inches)	N/A
Channel Zone 3 - % of total LWD	0%	Mean Channel Alteration	Poor
Total number of LWD	0	Mean Left Bank Stability	Poor
Number of Key LWD Pieces	0	Mean Right Bank Stability	Poor
% Key LWD Pieces	0%	Mean Bank Stability	Poor
LWD Pieces per Mile		Mean Left Bank Vegetative Protection	Poor
		Mean Right Bank Vegetative Protection	Poor
		Mean Vegetative Protection Overall	Poor
Existing Stream Geomorphology Metrics		Mean Left Bank Riparian Zone Width	Poor
Mean Wetted Width (feet)	8.56	Mean Right Bank Riparian Zone Width	Poor
Mean Bankfull Width (feet)	12.24	Mean Riparian Zone Width	Poor
Mean Bankfull Height (feet)	1.84		
Mean Stream Depth (inches)	6.89		
Mean Reach Slope	4%	Substrate Composition Metrics	
Mean Left Bank Angle	46°	Dominant Substrate Class Size	Silt/Sand/Muck
Mean Right Bank Angle	57°	% Bedrock (smooth)	0%
SD of Wetted Width (feet)	14.17	% Boulder (250 to 4000 MM)	0%
SD of Bankfull Width (feet)	15.62	% Cobble (64 to 255 MM)	3%
SD of Bankfull Height (feet)	0.52	% Coarse Gravel (16 to 64 MM)	10%
SD of Stream Depth (inches)	4.48	% Fine Gravel (2 to 16 MM)	3%
SD of Left Bank Angle	16°	% Sand (.06 to 2 MM)	17%
SD of Right Bank Angle	11°	% Silt/Sand/Muck	60%
Total Stream Length Surveyed (feet)	410.13	% Hardpan	7%
		% Wood	0%
		Mean % Embeddedness	83%
Quality of Pool Metrics		SD of % Embeddedness	34%
Mean Pool Quality Index	N/A		
SD of Pool Quality Index	N/A		
Total Number of Pools	0	Riparian Vegetation Metrics	
		% Canopy Vegetation Cover	Sparse (<10%)
Canopy Cover Measurements		% Mid Layer Vegetation Cover	Heavy (40-75%)
% Canopy Cover	77%		

**Springbrook Creek
Habitat Survey Summary Sheet**

Large Woody Debris Metrics		In-Stream Habitat Type Metrics	
Channel Zone 1 - Number of LWD	0	Stream Discharge	16.907 cfs
Channel Zone 1 - % of total LWD	0%	HUs Per Mile	34.35
Channel Zone 2 - Number of LWD	0	Pools per Mile	6.87
Channel Zone 2 - % of total LWD	0%	Mean Residual Pool Depth (inches)	43.50
Channel Zone 3 - Number of LWD	0	SD of Residual Pool Depth (inches)	1.95
Channel Zone 3 - % of total LWD	0%	Mean Channel Alteration	Marginal
Total number of LWD	0	Mean Left Bank Stability	Marginal
Number of Key LWD Pieces	0	Mean Right Bank Stability	Suboptimal
% Key LWD Pieces	0%	Mean Bank Stability	Marginal
LWD Pieces per Mile		Mean Left Bank Vegetative Protection	Marginal
		Mean Right Bank Vegetative Protection	Marginal
		Mean Vegetative Protection Overall	Marginal
Existing Stream Geomorphology Metrics		Mean Left Bank Riparian Zone Width	Marginal
Mean Wetted Width (feet)	45.44	Mean Right Bank Riparian Zone Width	Marginal
Mean Bankfull Width (feet)	56.93	Mean Riparian Zone Width	Marginal
Mean Bankfull Height (feet)	2.33		
Mean Stream Depth (inches)	14.54		
Mean Reach Slope	1%	Substrate Composition Metrics	
Mean Left Bank Angle	53°	Dominant Substrate Class Size	Silt/Sand/Muck
Mean Right Bank Angle	67°	% Bedrock (smooth)	0%
SD of Wetted Width (feet)	15.72	% Boulder (250 to 4000 MM)	0%
SD of Bankfull Width (feet)	16.80	% Cobble (64 to 255 MM)	2%
SD of Bankfull Height (feet)	1.25	% Coarse Gravel (16 to 64 MM)	9%
SD of Stream Depth (inches)	8.71	% Fine Gravel (2 to 16 MM)	13%
SD of Left Bank Angle	22°	% Sand (.06 to 2 MM)	24%
SD of Right Bank Angle	28°	% Silt/Sand/Muck	46%
Total Stream Length Surveyed (feet)	1537.15	% Hardpan	0%
		% Wood	2%
		% Other	4%
Quality of Pool Metrics		Mean % Embeddedness	78%
Mean Pool Quality Index	6.5	SD of % Embeddedness	37%
SD of Pool Quality Index	0.7		
Total Number of Pools	2		
		Riparian Vegetation Metrics	
Canopy Cover Measurements		% Canopy Vegetation Cover	Heavy (40-75%)
% Canopy Cover	84%	% Mid Layer Vegetation Cover	Very Heavy (>75%)

**Thunder Hills Creek
Habitat Survey Summary Sheet**

Large Woody Debris Metrics		In-Stream Habitat Type Metrics	
Channel Zone 1 - Number of LWD	0	Stream Discharge	N/A
Channel Zone 1 - % of total LWD	0%	HUs Per Mile	55.52
Channel Zone 2 - Number of LWD	3	Pools per Mile	12.81
Channel Zone 2 - % of total LWD	60%	Mean Residual Pool Depth (inches)	13.26
Channel Zone 3 - Number of LWD	2	SD of Residual Pool Depth (inches)	4.98
Channel Zone 3 - % of total LWD	40%	Mean Channel Alteration	Poor
Total number of LWD	5	Mean Left Bank Stability	Optimal
Number of Key LWD Pieces	0	Mean Right Bank Stability	Optimal
% Key LWD Pieces	0%	Mean Bank Stability	Optimal
LWD Pieces per Mile		Mean Left Bank Vegetative Protection	Poor
		Mean Right Bank Vegetative Protection	Poor
		Mean Vegetative Protection Overall	Poor
Existing Stream Geomorphology Metrics		Mean Left Bank Riparian Zone Width	Marginal
Mean Wetted Width (feet)	6.00	Mean Right Bank Riparian Zone Width	Marginal
Mean Bankfull Width (feet)	8.27	Mean Riparian Zone Width	Marginal
Mean Bankfull Height (feet)	1.71		
Mean Stream Depth (inches)	3.85		
Mean Reach Slope	4%	Substrate Composition Metrics	
Mean Left Bank Angle	61°	Dominant Substrate Class Size	Other
Mean Right Bank Angle	69°	% Bedrock (smooth)	8%
SD of Wetted Width (feet)	2.72	% Boulder (250 to 4000 MM)	2%
SD of Bankfull Width (feet)	4.13	% Cobble (64 to 255 MM)	10%
SD of Bankfull Height (feet)	1.18	% Coarse Gravel (16 to 64 MM)	20%
SD of Stream Depth (inches)	2.93	% Fine Gravel (2 to 16 MM)	14%
SD of Left Bank Angle	27°	% Sand (.06 to 2 MM)	10%
SD of Right Bank Angle	26°	% Silt/Sand/Muck	2%
Total Stream Length Surveyed (feet)	1236.28	% Hardpan	0%
		% Wood	0%
		% Other	34%
Quality of Pool Metrics		Mean % Embeddedness	22%
Mean Pool Quality Index	5	SD of % Embeddedness	7%
SD of Pool Quality Index	2.65		
Total Number of Pools	3		
		Riparian Vegetation Metrics	
Canopy Cover Measurements		% Canopy Vegetation Cover	Sparse (<10%)
% Canopy Cover	74%	% Mid Layer Vegetation Cover	Heavy (40-75%)

**Cottage Creek
Habitat Survey Summary Sheet**

Large Woody Debris Metrics		In-Stream Habitat Type Metrics	
Channel Zone 1 - Number of LWD	0	Stream Discharge	N/A
Channel Zone 1 - % of total LWD	0%	HUs Per Mile	434.96
Channel Zone 2 - Number of LWD	0	Pools per Mile	0.00
Channel Zone 2 - % of total LWD	0%	Mean Residual Pool Depth (inches)	N/A
Channel Zone 3 - Number of LWD	0	SD of Residual Pool Depth (inches)	N/A
Channel Zone 3 - % of total LWD	0%	Mean Channel Alteration	N/A
Total number of LWD	0	Mean Left Bank Stability	N/A
Number of Key LWD Pieces	0	Mean Right Bank Stability	N/A
% Key LWD Pieces	0%	Mean Bank Stability	N/A
LWD Pieces per Mile	0.00	Mean Left Bank Vegetative Protection	N/A
		Mean Right Bank Vegetative Protection	N/A
		Mean Vegetative Protection Overall	N/A
Existing Stream Geomorphology Metrics		Mean Left Bank Riparian Zone Width	N/A
Mean Wetted Width (feet)	N/A	Mean Right Bank Riparian Zone Width	N/A
Mean Bankfull Width (feet)	N/A	Mean Riparian Zone Width	N/A
Mean Bankfull Height (feet)	N/A		
Mean Stream Depth (inches)	N/A	Substrate Composition Metrics	
Mean Reach Slope	N/A	Dominant Substrate Class Size	N/A
Mean Left Bank Angle	N/A	% Bedrock (smooth)	N/A
Mean Right Bank Angle	N/A	% Boulder (250 to 4000 MM)	N/A
SD of Wetted Width (feet)	N/A	% Cobble (64 to 255 MM)	N/A
SD of Bankfull Width (feet)	N/A	% Coarse Gravel (16 to 64 MM)	N/A
SD of Bankfull Height (feet)	N/A	% Fine Gravel (2 to 16 MM)	N/A
SD of Stream Depth (inches)	N/A	% Sand (.06 to 2 MM)	N/A
SD of Left Bank Angle	N/A	% Silt/Sand/Muck	N/A
SD of Right Bank Angle	N/A	% Hardpan	N/A
Total Stream Length Surveyed (feet)	12.14	% Wood	N/A
		Mean % Embeddedness	N/A
Quality of Pool Metrics		SD of % Embeddedness	N/A
Mean Pool Quality Index	0		
SD of Pool Quality Index	0	Riparian Vegetation Metrics	
Total Number of Pools	0	% Canopy Vegetation Cover	N/A
		% Mid Layer Vegetation Cover	N/A
Canopy Cover Measurements			
% Canopy Cover	N/A		