Exhibit 1   Stream Visual Assessment Protocol 2 Summary Sheet

Stream Visual Assessment Protocol 2 Summary Sheet

Owner's name _____   Evaluator's name_____

Stream name _____   Tributary to: _____HUC: ____

1. Preliminary Assessment

A. Watershed Description

<div style="color:red; border:1px solid red;">
Information in this section may not be needed for Alaska situations, or may not be available in Alaska data sets. Planners should complete the data fields if possible, or record other relevant data that may not be captured on this form.
</div>

Ecoregion or MLRA_____ Watershed Drainage area (acres or mi^2)_____

Watershed management structures: (no.): dams___ water controls _____ irrigation diversions___

No. of miles of contiguous riparian cover/mile of entire stream in watershed (estimated)_____

Land use within watershed (%): cropland _____ hayland _____ grazing/pasture _____ forest ____

         urban _____ industrial _____ other (specify) _____

Agronomic practices in uplands include: _____

Confined animal feeding operations (no.) _____ Conservation (acres) _____industrial(acres) _____

Number of stream miles on property_____ Number of total stream miles_____

Stream hydrology: _____intermittent; months of year wetted : _____

         _____perennial; months of year at baseflow:_____

B. Stream/Reach Description:

Stream Gage Location/Discharge: _____/_____ft^3/s

Applicable Reference Stream: _____ Reference Stream Location: ____/_____

Information Sources:

2. Field Assessment

A. Preliminary Field Data

Date of assessment_____ Weather conditions today_____
<div align="right">(ambient temp.\ % cloud cover)</div>

Weather conditions over past 2 to 5 days: _____.
<div align="center">(No. of days precip/average daytime temp.)</div>

Reach location (UTM or Lat./Long.) _____/_____ Channel type/classification scheme_____/_____

Riparian Cover Type(s): Tree_____ %   Shrub_____%   Herbaceous _____%   Bare _____%

Bank Profile: Stratified____ Homogeneous_____ Cohesive Soil____ Noncohesive Soil _____

Gradient (√ one): Low (0-2%)____   Moderate (>2<4%)____ High (>4%) ____

Bankfull channel width _____ft   Reach length _____ft   Flood plain width_____ft

Average riparian zone width_____ ft   Method used (e.g., Range finder): _____

Average height of woody shrubs _____   Method used (e.g., Range finder): _____

Flood plain wetlands, if present _____ acres/reach

Dominant substrate (%): boulder _____   cobble _____   gravel _____ sand_____ fine sediments _____

(> 250 mm)	(60-250mm)	(2-60 mm)	(2-.06 mm)	(< .06 mm)
>Basketball	>Baseball	>Sand		

Photo Point Locations and Descriptions:

Photo Pt. #	GPS Coordinates/Waypoints	Description
1		
2		
3		

SVAP Start Time/Water Temp: _____/_____SVAP End Time/Water Temp: _____/_____

Notes:

Stream/Reach Name:

Landowner's Name: Evalulator's Name:

SVAP 2 Field Data Sheet

Date_____.

1. Channel Condition

Natural, stable channel with established bank	*If channel is incising (appears to be downcutting or degrading), score this element based on the descriptions in this upper section of the matrix:*		
No discernible signs of incision or aggradation; active channel and floodplain connected throughout reach, and flooded at natural intervals; streambanks low with few or no bank failures; Stage I : Score 10 Stage V: Score 9 (terrace)	Evidence of past incision and some recovery; some bank erosion possible; active channel and floodplain are connected in most areas, inundated seasonally; streambanks may be low or appear to be steepening; top of point bars are below active floodplain. Stage I: Score 8 Stage V: Score 7-8 Stage IV: Score 6	Active incision evident; plants are stressed , dying or falling in channel; active channel appears to be disconnected from the floodplain, with infrequent or no inundation; steep banks, bank failures evident or imminent ; point bars located adjacent to steep banks. Stage IV: Score 5 Stage III: Score 4 Stage II: Score 3	Headcuts or surface cracks on banks; active incision; vegetation very sparse; little or no connection between floodplain and stream channel, and no inundation; steep streambanks and failures prominent; point bars, if present, located adjacent to steep banks. Stage II or III, scores ranging from 2 to 0, depending on severity.

10	9	*If channel is aggrading (appears to be filling in and is relatively wide and shallow), score this element based on the descriptions in this lower section of the matrix:*							

Channel evolution model

I Stable Flood plain Q₂ Terrace₁
II Incision Flood plain Q₁₀ Headcutting
III Widening +Q₁₀ Bank failure
IV Stabilizing +Q₁₀ Terrace₁
V Stable Terrace₂ Flood plain Q₂

Lateral migration & bank erosion are within the range of natural variability. If present, multiple channels separated by bars are characteristic of stream riach & not threatening spauning habitat quality.	Moderate lateral migration and bank erosion, slightly beyoun range of natural variability; deposition of sediments causing channel to be very shallow in places & there is potential for threatening infrastructure or diminishing spawning habitat quality.	Severe lateral channel migration & bank erosion; deposition of sediments causing channel to be very shallow in places threatening infrastructure &/or impacting historical spawning habitat quality.

8	7	6	5	4	3	2	1	0

Comments:

2. Hydrologic Alteration

Bankfull and higher flows occur according to the natural flow regime, generally every year, AND no dams, dikes, water control structures, or development in the floodplain; AND natural flow regime prevails.	Bankfull and higher flows occur only once every 2 to 3 years, or less often than the local natural flow regime. Development in the floodplain, stream water withdrawals,, or water control structures may be present but do not significantly alter the natural flow regime.	Bankfull and higher flows occur only once every 6 to 10 years. Development in the floodplain, stream water withdrawals, or water control structures alter the natural flow regime.	Bankfull and higher flows rarely occur or occur more frequently than once/year. Stream water withdrawals completely de-water channel; and/or stormwater or urban runoff discharges directly to stream and severely alters the natural flow regime.

10	9	8	7	6	5	4	3	2	1	0

Comments: AK SVAP does not include language about bankfull occurring more frequently. Incised systems where bankfull flows cannot access the floodplain are a sign of degradation BUT more frequent flooding is also a sign of degradation- whether it be from more impervious surface causing higher flows in a bedrock or concrete lined channel or areas where anthropogenic changes to the stream channel are causing it to aggrade and flood more regularly.

3. Bank Condition - Score each bank separately.

Banks apear stable; protected by roots of natural vegetation, wood, and rock; no man-made structures present on bank; no bank failures; no recreational access.	Banks appear moderately stable, protected by roots of natural vegetation, wood, rock or a combination of materials; limited number of structures present on bank; evidence of erosion or bank failures, some with re-establishment of vegetation; recreational use and/or livestock does not negatively impact bank condition.	Banks appear moderately unstable; very little protection of banks by roots of natural wood, vegetation, or rock; man-made structures cover more than half of reach or entire bank; excessive bank erosion or active bank failures; recreational and/or livestock use contributing to bank instability.	Banks appear unstable; no bank protection with roots, wood, rock or vegetation; riprap, and/or other structures dominate banks; numerous active bank failures; recreational and/or livestock use contributing to bank instability.

Right Bank	10	9	8	7	6	5	4	3	2	1	0
Left Bank	10	9	8	7	6	5	4	3	2	1	0

Comments: Left & right bank determined by looking downstream. Score for this element = left bank score + right bank score divided by 2.

4. Riparian Area Quantity - Score each bank separately. Rate entire property.

Natural plant community extends at least two bankfull widths or covers the entire active floodplain and contiguous throughout property.	Natural plant community extends at least one bankfull width or covers 1/2 to 2/3 of active floodplain and is contiguous throughout property. Vegetation gaps do not exceed 10% of the estimated length of the stream on the property.	Natural plant community extends at least one-half of the bankfull width or covers at least 1/2 of active floodplain. Vegetation gaps do not exceed 30% of the estimated length of the stream on the property.	Natural plant community extends at least 1/3 of the bankfull width or covers ¼ of active floodplain. Vegetation gaps exceed 30% of the estimated length of the stream on the property.	Natural plant community extends less than 1/3 of the bankfull width or less than ¼ of active floodplain. Vegetation gaps exceed 30% of the estimated length of the stream on the property.

Right	10	9	8	7	6	5	4	3	2	1	0
Left Bank	10	9	8	7	6	5	4	3	2	1	0

Comments: Left & right bank determined by looking downstream. Score for this element = left bank score + right bank score divided by 2. IF the score of one bank is 7 or greater & the score of the other bank is 4 or less, subtract 2 pts from the final score.

5. Riparian Area Quality – Score entire property. Rate entire property

Natural and diverse riparian vegetation with composition, density and age structure appropriate for the site. No invasive species or concentrated flows through area.		Natural and diverse riparian vegetation with composition, density and age structure appropriate for the site. Invasive species present in small numbers (20% cover or less).			Natural vegetation compromised. Evidence of concentrated flows running through the riparian area. Invasive species common (>20%<50% cover).			Little or no natural vegetation. Evidence of concentrated flows running through the riparian area. Invasive species widespread (>50% cover).		
Right Bank	10	9	8	7	6	5	4	3	2	1	0
Left Bank	10	9	8	7	6	5	4	3	2	1	0

Comments: Left & right bank determined by looking downstream. Score for this element = left bank score + right bank score divided by 2.

6. Water Appearance

Water is very clear, or clarity appropriate to site (3-6'). No motor oil sheen on surface; no evidence of water contimination in stream.			Water appears lightly turbid or cloudy, especially after storm event, but water clears rapidly (>1.5-3'); no motor oil sheen on surface; no evidence of water contamination in stream.			Uncharacteristically turbid most of the time (0.5-1.5') and/or presence of motor oil sheen on surface in slackwater areas.			Uncharacteristically high turbidity most of the time (<0.5') and/or considerable amount of motor oil sheen present throughout reach.	
10	9	8	7	6	5	4	3	2	1	0

Comments:

7(a). Pools – *Low-Gradient* Streams (<2% slope)

More than 2 deep pools separated by riffles, each with greater than 30% of the pool bottom obscured by depth, wood, or other cover. Shallow pools also present.		One or 2 deep pools separated by riffles, each with greater than 30% of the pool bottom obscured by depth wood, or other cover; at least one shallow pool present.			Pools present but shallow (< 2 times maximum depth of the upstream riffle). Only 10 – 30% of pool bottoms are obscured due to depth or wood cover.			Pools absent, but some slow water habitat is available; no cover discernible. OR Reach is dominated by shallow continuous pools or slow water.		
10	9	8	7	6	5	4	3	2	1	0

7(b). Pools – *High-Gradient* Streams (>2% slope)

More than 3 deep pools separated by boulders or wood, each with greater than 30% of the pool bottom obscured by depth, wood, or other cover. For small streams, pool bottoms may not be completely obscured by depth, but pools are deep enough to provide adequate cover for resident fish. Shallow pools also present.		Two to 3 deep pools, each with greater than 30% of the pool bottom obscured by depth wood, or other cover; at least one shallow pool present. For small streams, pool bottoms may not be completely obscured by depth, but pools are deep enough to provide *some* cover for resident fish. At least one shallow pool also present.			Pools present but shallow relatively shallow, with only 10 – 30% of pool bottoms obscured by depth, wood, or other cover. For small streams, pool bottoms may not be completely obscured by depth, but pools are deep enough to provide minimal cover for resident fish. No shallow pools present.			Pools absent.		
10	9	8	7	6	5	4	3	2	1	0

Comments:

8. Barriers to Aquatic Species Movement   Fish Barriers

No artificial barriers that prohibit movement of aquatic organisms/fish during any time of the year.	Physical structures, water withdrawals and/or water quality seasonally restrict movement of aquatic species/fish. (9,8,7)	Physical structures, water withdrawals and/or water quality restrict movement of aquatic species *throughout the year*. Not used in AK SVAP (6,5,4,3)	Physical structures, water withdrawals and/or water quality prohibit movement of aquatic species/fish.
10	5		0

Comments: National language extends this element past fish to include all aquatic organisms. As well AK only has 3 categories- national tries to distiguish between "seasonal" barriers (restricts movement during water withdrawl season- which may not be applicable in AK?) and restricts/or is a partial barrier throughout the year- for example jump height criteria is not being met at a culvert- but fish are found above the site so clearly fish are able to negotiate the culvert at some time periods - or some more athletic fish are passing, but it is causing delay of some. Are 3 categories sufficient given AK resource concerns or is there value in splitting seasonal and year round passage restrictions?

9. Fish Habitat Complexity

10 or more habitat features available, at least one of which is considered optimal in reference sites (e.g., large wood in forested streams.)	8 to 9 habitat features available.	6 to 7 habitat features available.	4 to 5 habitat features available.	<4 habitat features available.
10	9	8	7	6	5	4	3	2	1	0

1)Logs, large wood: 2/rch. **2)**Small wood accumulations: 1/rch. **3)**Deep pools: 2/rch. **4)**Secondary pools: 4/rch. **5)**Overhanging veg: 3/rch. **6)**Large boulders: 3/rch if no wood, 2/rch if wood present. **7)**Small boulder clusters: 3/rch. **8)**Cobble riffles: 2/rch. **9)**Undercut banks: 3/rch or 25% of bank area. **10)**Thick root mats: 3/rch. **11)**Macrophyte beds: 1/rch. **12)**Off-channel habitats: 2/rch. **13)**Other locally important habitat features. *(describe in comments field)*

Comments:

10. Aquatic Invertebrate Habitat

At least 9 types of habitat present; a combination of wood with riffles should be present and suitable in addition to other types of habitat. (If non-forested stream, consider reference site's optimal habitat type needed for this high score.)	8 to 6 types of habitat; site may be in need of more wood or reference habitat features, and stable wood-riffle sections.	5 to 4 types of habitat present	3 to 2 types habitat present	None to 1 type of habitat present
10	9	8	7	6	5	4	3	2	1	0

1)Logs, large wood: 2/subreach. **2)**Large boulders w/in riffles: 2/subreach if now wood, 1/subreach if wood present. **3)**Small boulder clusters: 2/subreach. **4)**Fine woody debris: 2/subreach. **5)**Overhanging vegetation: 1/subreach. **6)**Cobble riffles: 1/subreach. **7)**Undercut banks: 1/subreach or 25% of bank area. **8)**Pools: no minimum. **9)**Thick root mats: 1/subreach. **10)**Macrophyte beds: 1/subreach. **11)**Other locally important habitat features. *(describe in comments field).*
Subreach= 5X active channel width

Comments:

11. Aquatic Invertebrate Community

Invertebrate community is diverse and well represented by Group I or intolerant species; One or two species do not dominate.	Invertebrate community is well represented by Group II or facultative species, and Group I species are also present; one or two species do not dominate.	Invertebrate community is composed mainly of Groups II and III, and/or 1 or 2 species of any group may dominate.	Invertebrate community composition is predominantly Group III species and/or only 1 or 2 species of any group is present and abundance is low.
10	9	8	7	6	5	4	3	2	1	0

Comments:

12. Riffle Embeddedness

Gravel or cobble substrates are <10% embedded.	Gravel or cobble substrates are 10-20%	Gravel or cobble substrates are 21-30%	Gravel or cobble substrates are 31-40%	Gravel or cobble substrates are >40% embedded.
10	9	8	7	6	5	4	3	2	1	0

Comments:

B. Element Scores

Element	Score	Element	Score
1. Channel Condition		14. Aquatic Invertebrate Community	
2. Hydrologic Alteration		15. Riffle Embeddedness	
3. Bank Condition		16. Salinity	
4. Riparian Area Quantity		**A. Sum of all elements scored**	
5. Riparian Area Quality		**B. Number of elements scored**	
6. Canopy Cover			
7. Water Appearance			
8. Nutrient Enrichment		**Overall score: A/B** _____	
9. Manure or Human Waste			
10. Pools		1 to 2.9 Severely Degraded	
11. Barriers to Movement		3 to 4.9 Poor	
12. Fish Habitat Complexity		5 to 6.9 Fair	
13. Aquatic Invertebrate Habitat		7 to 8.9 Good	
		9 to 10 Excellent	

Suspected causes for SVAP scores <5:

Recommendations for further assessment or actions:

Additional Information: