

## **Appendix A**

### **Data Inventory List**



# Memorandum

Date: January 25, 2010

To: City of Spokane Valley Community Development

From: John Patrouch, PE  
Noah Herlocker

Subject: **City of Spokane Valley Data Inventory**

## **Purpose**

This memorandum provides information on the inventory data and an analysis of data gaps. Within the framework of the Shoreline Management Act and Guidelines, the shoreline inventory establishes a baseline that shoreline development and restoration can be measured against to achieve no net loss. WAC 173-26-201(E) states “Local governments should use the characterization and analysis called for in this section to prepare master program policies and regulations designed to achieve no net loss of ecological functions necessary to support shoreline resources and to plan for the restoration of the ecosystem-wide processes and individual ecological functions on a comprehensive basis over time.”

This memo outlines individual shoreline inventory elements, existing data sources that address those elements, and an initial assessment of fieldwork needed to gather information for those elements not adequately covered by existing sources.

## **Discussion of Data Sources**

### *City of Spokane Valley*

The City of Spokane Valley (COSV) has GIS data relevant to landuse, zoning, roads, utilities, critical areas, aquifer recharge and other planning and natural use data layers. The City information is up to date and is well coordinated with other local and state agencies.

### *Spokane County Conservation District (SCCD)*

The Conservation District performed an inventory and assessment of streams in Spokane County that was completed in 2005. This report contains data relevant to the City inventory. The potential limiting factor of this data is that it is specific to a reach but not down to the river mile, with some exceptions. High quality areas were inventoried and listed by river mile. Each data category was also put in GIS layers.

### *Avista Corp.*

The assessment work conducted for Avista’s 2005 relicensing application provides detailed information within the inventory area. However, the defined project area for the relicensing does not include the entire length of the river within City limits therefore some reaches are not covered. What stream segments are covered varies in each report.

### *Spokane County*

Spokane County is in the process of performing studies at Saltese Flats. There is valuable information contained in these reports about Shelley Lake. Spokane County also has layers available for sewer plans and existing septic tanks located within the shoreline area.

*Shelley Lake Homeowners Association*

The Shelley lake HOA provided Habitat Management Plans and permitting documents, including and Environmental Impact Statement that was done for the development of this land. This information provides much of the available background information on Shelley Lake.

*Agencies (Ecology, DNR, WDFW, EPA, USFWS, NRCS)*

Each agency has reports/documents and GIS data relevant to the agency’s purpose. The level of detail varies. Examples include the Natural Resources Conservation Service and the Spokane County Soil Survey, the Washington State Fish and Wildlife and the Priority Habitat and Species data base, etc. Much of the information for the gravel pits is available from the DNR permit, reclamation plans, and associated documentation.

The following functional groups were taken from the *Costal Training Program – Preparing Shoreline Characterizations for SMP Updates*. These groups provide and outline for the information needed for the data inventory. The **fieldwork** designation in the data source column identifies elements that at will be assessed in the field to supplement existing information.

**Specific Inventory Elements and Sources**

COSV – Inventory Data		
Functional Group	Data Element	Data Source
Hydrology	PFC rating	SCCD Report & GIS
	Rosgen stream type	SCCD Report & GIS
Geology	lithology	USGS GIS
	geohazard	City GIS - Critical Areas
Soils	permeability	Soil Survey (report & GIS)
	runoff characteristics	Soil Survey (report & GIS)
	erosion hazard	Soil Survey (report & GIS)
	hydric soils	Soil Survey (report & GIS)
Biological	upland vegetation	General description per reach from SCCD report. WDFW Priority Habitat GIS, DNR Natural Heritage GIS. <b>Fieldwork needed.</b>
	riparian vegetation	General description per reach reach and specific high quality areas by river mile SCCD report. Good detail from Avista for river. <b>Fieldwork needed.</b>
	wetlands	Good detail from Avista except Upriver Dam to Monroe St. USFWS National Wetlands Inventory. <b>Fieldwork needed.</b>
	wildlife/fish	Good detail from Avista. WDFW Priority Habitat GIS. Northwest Habitat Institute has broad brush information. <b>Fieldwork needed.</b>
	wildlife/avian	Some detail from Avista for Nine Mile Dam Pool and Monroe/Upper Falls Pool. WDFW Priority Habitat. Audubon Group information. <b>Fieldwork needed.</b>
	wildlife/terrestrial	Some detail from Avista. WDFW Priority Habitat. Local landowners. <b>Fieldwork needed.</b>
Land Use & Cultural	boat launches	Avista Relicensing - Final Recreation Facility Inventory and User Survey
	known cultural sites	Centennial Trail cultural resource inventory. WA Dept of Archaeology and Historic Preservation GIS
	roads	City GIS

COSV – Inventory Data		
Functional Group	Data Element	Data Source
	railroads	City GIS
	bridge/fence crossings	Aerial photos
	shore protection (eg rip rap)	Aerial photos and field verification. <b>Fieldwork needed.</b>
	effluent pipes	DOE permitted facilities GIS
	DOE permitted facilities	Ecology GIS
	impervious surfaces	City GIS
	zoning	City GIS
	current landuse	Aerial Photos, City GIS, <b>Fieldwork needed.</b>
	historical landuse	Aerial Photos, old USGS maps, Boutwell books
	essential facilities	City GIS/Aerial Photos/Discussions/City
	Shorelines of Statewide Significance	Ecology GIS. Spokane River meets criteria
	unique features	SCCD inventory of high quality areas, <b>Fieldwork needed.</b>
	environmental contamination	Ecology Records/GIS Database. Discussions with staff
	Docks	Avista Recreation Report. Aerial Photos
	Public Access Points	Avista Recreation Report
	Restoration Opportunities	Restoration potential per reach from SCCD report & GIS. City and Ecology consultation. <b>Fieldwork needed</b>

Spokane River – Ecosystem Wide		
Updrift and basin characteristics influencing SMA shoreline ecosystem	Applicable	Data Source
Dams		Avista GIS, many reports on Aquifer and River.
Irrigation channels	No	
High water demand agricultural landuse	No	
Mining/dredging operations		DNR permits, pit reclamation plans.
Low flows		Avista/Upriver dam operation, Aquifer Influence, USGS gauges
Record of dredge projects, maintenance dredging or disposal activities		Ecology heavy metals beach cleanups.
Levees	No	
Fills in floodplain		USGS Surficial Geology of Spokane River GIS data
Recent changes to flood/erosion zones	No?	Aerial photo comparisons.
Transportation facilities intersecting floodplain		City GIS
Incised channels	No	
Development within channel migration zones	No?	Aerial Photo/City Zoning/Landuse
Impervious surface in watershed		City GIS
Large undisturbed wetland complexes and beaver dams		National Wetlands Inventory, EWU Inventory, <b>Fieldwork.</b>
Unconstrained sources of upstream sediment		Shelley Lake/Saltse Creek
Areas zoned for growth on erodible soils		City GIS
Fragmented vegetation		Aerial Photos, <b>Fieldwork.</b>

Spokane River – Ecosystem Wide		
Updrift and basin characteristics influencing SMA shoreline ecosystem	Applicable	Data Source
Dams		Avista GIS, many reports on Aquifer and River.
Upland logging	No	
Water quality exceedences (303d, 305b listings)		Ecology GIS
Designated state or federal cleanup sites		Ecology/EPA Records
Urban/commercial/industrial landuse adjacent to upland aquatic lands		City GIS, Aerial Photos
Upstream ports or marinas	No	
Livestock intensive agricultural landuse	No	
High pesticide/fertilizer demand agricultural landuse	No	
Direct upstream input from outflow pipes		DOE & IDEQ Records (City of Liberty Lake, Kaiser, Inland Paper, Idaho Sources)
Presence of older septic systems		Spokane Regional Health District, Spokane County
Areas zoned for growth atop aquifer recharge areas		City GIS
Interruption of aquatic migratory corridors		WDFW, Avista Studies, User Groups
Interruption of terrestrial migratory corridors		WDFW Priority Habitat and Species/DNR Natural Heritage
Loss of native species abundance/distribution		WDFW Priority Habitat and Species/DNR Natural Heritage, User groups.
Identified conservation, protected areas		WDFW Priority Habitat and Species/DNR Natural Heritage

GIS Database - Initial Database Request							
	1/25/2010						
Category	Dataset/Layers	Geometry	Author	Date	Status	Metadata	Comment
Natural Environment	<b>Jurisdictional River Boundaries</b>						
	High Water Line	Line	SV	Sep-09	P	X	Digitized by the City for use in the field inventory
	Wetland Areas	Polygon	SV		P	X	Author?
	SMA	Polygon	SV	9-Oct	P		Mike Folsom
	Floodplain Info	Polygon	FEMA		P	X	100-year floodplain
	<b>Natural Resource Field Inventory</b>						
	Study Segments for SMP	Line	URS	Oct-09	P		Portions of the river that are separated for the purpose of discussion in the Shoreline Inventory & Analysis Report
	Erosion	Line	URS	Oct-09	P		Areas of erosion inventoried in October 2009
	Restoration and Conservation	Polygon	URS	Oct-09	P		Restoration Areas, Conservation Areas, and other unique features inventoried by URS in September 2009
	Photo Points (?)	Point	URS	Oct-09	P		
	OHWM	Line	Folsom	Oct-09	P		Field approximated and drawn on high-resolution aerial photos by Mike Folsom in September 2009
	Vegetation Zones	Polygon	Folsom	Oct-09	P		Field approximated and drawn on high-resolution aerial photos by Mike Folsom in September 2009
	<b>Cultural Resources</b>						
	CT Study	?	CT		U		
	Tribal	?			U		
	State Historic Preservation Office	?	SHPO		NL		Not sure what they will provide us with due to confidentiality.
	Historic Districts	?			U		
	<b>Critical Areas</b>						As per Spokane Valley Municipal Code Title 21.40
	Erodible Soils	Polygon	SV		P	X	
	RHA	Polygon	SV		P	X	
	Aquifer Recharge	Polygon	DOE		P	X	
	Geologically Hazardous Areas	Polygon	SV		P	X	
	Frequently Flooded Areas	Polygon	?		P	X	
	<b>Zoning/Land Use</b>						Need to delineate areas.
	City Limits	Polygon	SV		P	X	
	UGA	Polygon	SV		P	X	
	Tax parcels	Polygon	County		P	X	Public/private delineate, also ownership
	City Parks	Polygon	SV		P	X	Is this part of Land use mapping?
	Land Use	Polygon	SV		P	X	need to determine areas by reach
	Zoning	Polygon	SV		P	X	need to determine areas by reach
Railroad Right of Ways	Polygon	State		P	X	General Information, areas along shoreline	
<b>Environmental Compliance</b>							
2008 303d List		DOE		U		Need to delineate areas and points	
TMDL?		DOE		U		Should see if this is available as a shapefile	

GIS Database - Initial Database Request							
	1/25/2010						
Category	Dataset/Layers	Geometry	Author	Date	Status	Metadata	Comment
	DOE Permit Sites	Point	DOE		P		Is the same as the metal contamination clean up areas (EPA)?
	Fills in Floodplain				U		
	<b>SCCD PFC Data</b>						Need to delineate linear feet (percentage)
	PFC Ratings	Polygon	SCCD		P		
	Development Impacts	Polygon	SCCD		P		
	Reach Breaks	Line	SCCD		P		
	Ecological Condition	Polygon	SCCD		P		
	Erosion	Line	SCCD		P		
	Restoration Potential	Polygon	SCCD		P		
	<b>Vegetation</b>						
	Vegetation Plots			Folsom		P	
	Vegetation Zones	Polygon		Folsom	Oct-09	P	Field approximated and drawn on high-resolution aerial photos by Mike Folsom in September 2009
	Noxious Weeds			Folsom		P	
	Photo Points			Folsom		P	
	<b>Wildlife Habitat</b>						
	PHS- Terrestrial	Polygon		WDFW		P	X
	Natural Heritage - Current	Polygon		DNR		P	X
	Natural Heritage - Historic	Polygon		DNR		P	X
	3rd Party Sightings	?		?		P	
	Audoban	?		Audoban		P	Norma Treyfa - Audubon Society
	High Value Angling Spots	Point		Local Anglers		P	Stann Grater/Bill Abrahamse/Judy kaufman
	WDFW	?		Karin Divens		U	Not PHS- This will be additional observations from the local district biologists made specifically for the SMP update process.
	<b>Fisheries</b>						
	Avista Info	Points		Avisat		P	Recreation sites, fish studies
	PHS - Fish	Polygon		WDFW		P	
	WRIA Info			DOE			Reports. No GIS data
	<b>Physical Environment</b>						
	Geological Map	Polygon		NRCS		P	Need to delineate areas of various soils in jurisdiction
	NRCS Soils			NRCS		P	USGS 1:2400 scale topo or better?
	Topography			USGS		P	Need to digitize and delineate by LF
<b>Built Structures</b>							
Fences	Polyline		URS		P	URS Field Inventory	
Bridges	Polygon		URS		P	URS Field Inventory	
Bulkheads	Polygon		URS		P	URS Field Inventory	

GIS Database - Initial Database Request							
	1/25/2010						
Category	Dataset/Layers	Geometry	Author	Date	Status <sup>1</sup>	Metadata	Comment
Built Environment	Docks	Polygon	URS		ND		Aerial Photos
	<b>Transportation &amp; Access</b>						
	Streets	Line	SV		P		
	Formal Trails	Line			P		
	Centennial Trail	Line	Avista		P		
	Informal Trails	Line			P		
	Formal Access	Line	Avista		P		
	Informal Access	Line	URS		P		Digitized by URS based on field inventory
	<b>Wastewater</b>						
	Sewer	Line	County		P		
	Pump Stations	Point			U		
	Force Mains	Point			U		
	Septic Tanks	Point	County		P		
	<b>Water</b>						
	Transmission	Line			U		
	Distribution	Line			P		
	Wells	Point			P		
	Booster Pumps	Point			U		
	Reservoirs	Polygon			U		
	Wellhood Protection	Polygon	County		P		
	<b>Electric</b>						
	Substations	Point	BPA/Avista		P		
	Power Lines	Line	BPA/Avista		P		
	<b>Comm</b>						
	Att Fiber Optics	Line			U		No gis Data
	Quest	Line			U		No gis Data
	Verizon	Line			U		No gis Data
	<b>Stormwater</b>						
	Outfalls	Point			P		URS Field Inventory and City Records
	Impervious	Polygon	COSV	Oct-09	P		

<sup>1</sup> Status: "P" = In Possession/Complete, "ND" = Need to Digitize, "NL" = Need to Locate, "U" = Unknown





City of Spokane Valley Shoreline Master Program Update  
Existing Data Inventory - Documents

Title	Author/Sponsor	Date	River System	Hydrology	Geology	Soils	Biology	Land Use/Cultural	Report Obtained	Significant Resource	Notes
Report on Temperature Analysis for Spokane River Recreation PM&E	Avista	2004	Spokane								N/A
Upper Spokane River Rainbow Trout Spawning and Fry Emergence Protection Plan	Avista	2004	Spokane								N/A
Final Phase 2 Erosion Assessment Report	Avista	2004	Spokane			X			PDF on file		Does not address study area
Phase 2, Spokane River Water Temperature Report	Avista	2004	Spokane								N/A
Water Budget and Identification of Beneficial Uses	Avista	2003	Spokane								N/A
1997-1999 Upper Spokane River Rainbow Trout Spawning & Fry Emergence Study	Avista	2000	Spokane								N/A
Magnitude and Frequency of Floods in Washington, US Geological Survey Water-Resources Investigations Report 97-4277	U.S. Geological Survey	1998	Spokane								N/A
An overview of aquatic habitat and fish related impacts of the Spokane River Hydroelectric Project in Washington	Avista Corporation and Washington Department of Fish and Wildlife	2004	Spokane				X				Review
Ramping Rate Evaluation, Spokane River Hydroelectric Project. Doc.No. 2004-0513	Avista, Parametrix, Washington Department of Fish and Wildlife, and Idaho Department of Fish and Game.. Avista	2004	Spokane								N/A
Fishery assessment of the upper Spokane River	Bailey, G. C. and J. Saltes/State of Washington, Water Research Center, Washington State University	1982	Spokane				X				review, some useful info
Surficial geology along the Spokane River, Washington and its relationship to the metal content of sediments (Idaho-Washington state line to Hangman creek confluence). Open-File Report 02-126	United States Geological Survey	2002	Spokane		X	X					review
Spokane River water quality monitoring program annual data(April 2001-March 2002) and final monitoring report (April 1999-March 2002)	CH2M HILL/Avista Utilities	2002	Spokane								N/A
State of Washington natural heritage plan	Washington State Department of Natural Resources	1987	Spokane				X				Review
An assessment of outdoor recreation in Washington State: A state comprehensive outdoor recreation planning document 2002-2007	Interagency Committee for Outdoor Recreation	2002	Spokane					X			review, maybe general
1992 Angler Survey for the Spokane River, Washington	Johnson E. E., R.W. Smith and D.K. Selle/Washington Water Power Co.	1992					X	X			Review, might be useful
Watershed approach to water quality management needs assessment for the Spokane Water Quality Management Area (WRIA 54-57)	Knight, D.T./WA DOE	2004	Spokane	X							review
Priority habitats and species database: Data compilation for the Intermountain Province.	Washington Department of Fish and Wildlife	2003	Spokane				X				review







City of Spokane Valley Shoreline Master Program Update

Data Gap Analysis - Needs Inventory  
 Spokane Valley Shorelines  
 Prepared by URS 10/6/09

Data Source			Data Studies		Gravel Pit Permits and Reclamation Plans			
Author/Sponsor			Document/Report		Document/Report			
Type			Reach #		Reach #			
			Park Road Pit	Sullivan Road Pit	SR	Shelley Lake	Park Road Pit	Sullivan Road Pit
Reach Specific Information	Hydrology	PFC rating						
		Rosgen stream type						
	Hydrogeology	lithology						
		geohazard						
	Soils	permeability						
		runoff characteristics						
		erosion hazard						
		hydric soils						
	Biological	upland vegetation						
		riparian vegetation						
		wetlands						
		wildlife/fish						
	Land Use & Cultural	wildlife/avian						
		wildlife/terrestrial						
		boat launches						
		known cultural sites						
		roads						
		railroads						
		bridge/fence crossings						
		shore protection (eg rip rap)						
		effluent pipes						
		DOE permitted facilities						
		impervious surfaces						
		zoning						
		current landuse						
		historical landuse						
	essential facilities							
	Shorelines of Statewide Significance							
	unique features							
	environmental contamination							
Docks								
Public Access Points								
Opportunities								
Basin Characteristics Influencing Shoreline Ecosystem (features within the basin or along non SMA waters that drain into SMA shorelines)	dams							
	irrigation channels							
	high water demand agricultural landuse							
	mining/dredging operations							
	low flows							
	record of dredge projects, maintenance dredging or disposal activities							
	levees							
	fills in floodplain							
	recent changes to flood/erosion zones							
	transportation facilities intersecting floodplain							
	incised channels							
	development within channel migration zones							
	impervious surface in watershed							
	large undisturbed wetland complexes and beaver dams							
	unconstrained sources of upstream sediment							
	areas zoned for growth on erodible soils							
	fragmented vegetation							
	upland logging							
	water quality exceedences (303 listings)							
	designated state or federal cleanup sites							
	urban/commercial/industrial landuse adjacent to upland aquatic lands							
	upstream ports or marinas							
	livestock intensive agricultural landuse							
	high pesticide/fertilizer demand agricultural landuse							
	direct upstream input from outflow pipes							
	presence of older septic systems							
	areas zoned for growth atop highly erodible soils or slopes							
	areas zoned for growth atop aquifer recharge areas							
	fragmented riparian vegetation							
	interruption of aquatic migratory corridors							
interruption of terrestrial migratory corridors								
loss of native species abundance/distribution								
identified conservation, protected areas								