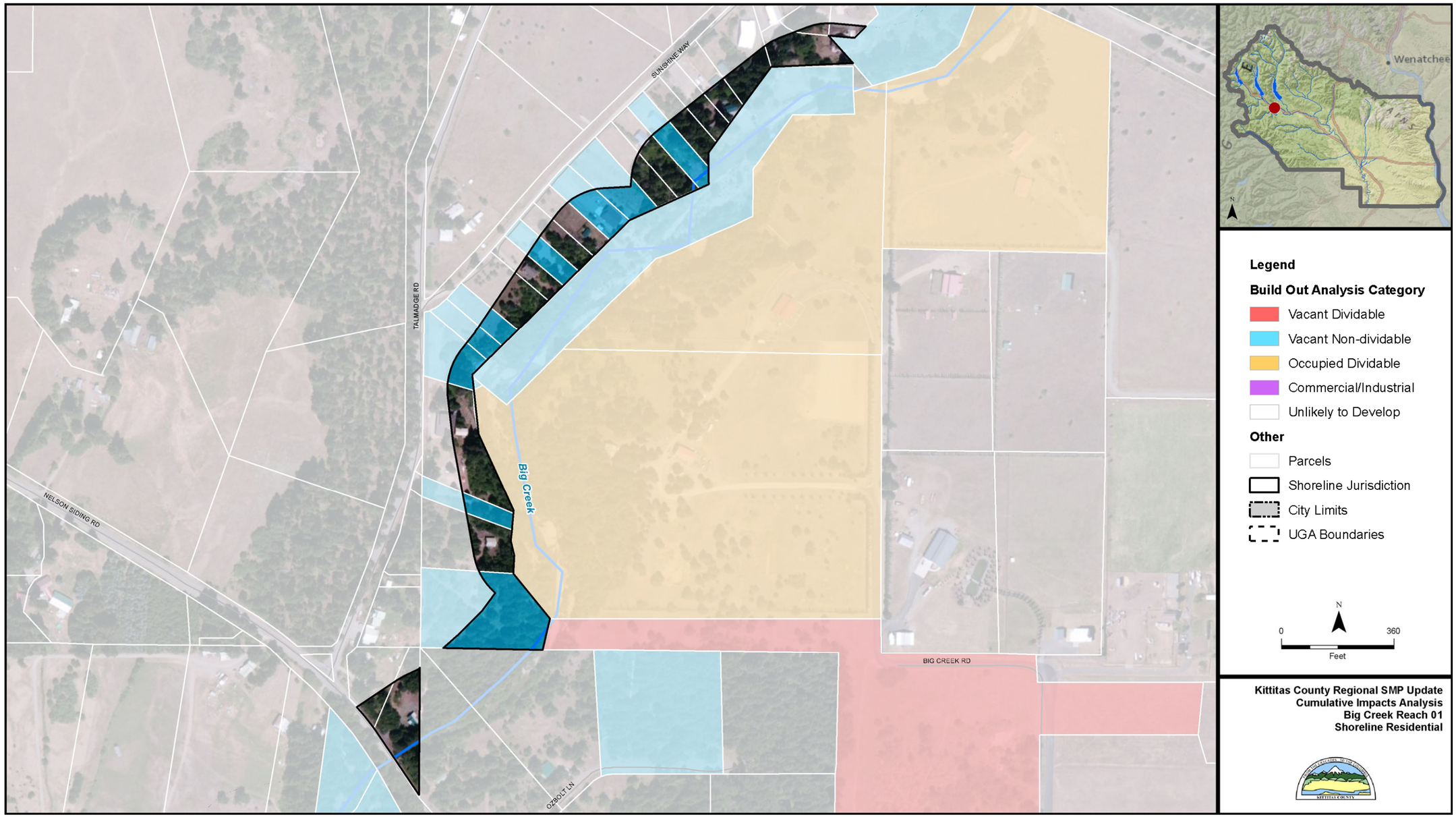
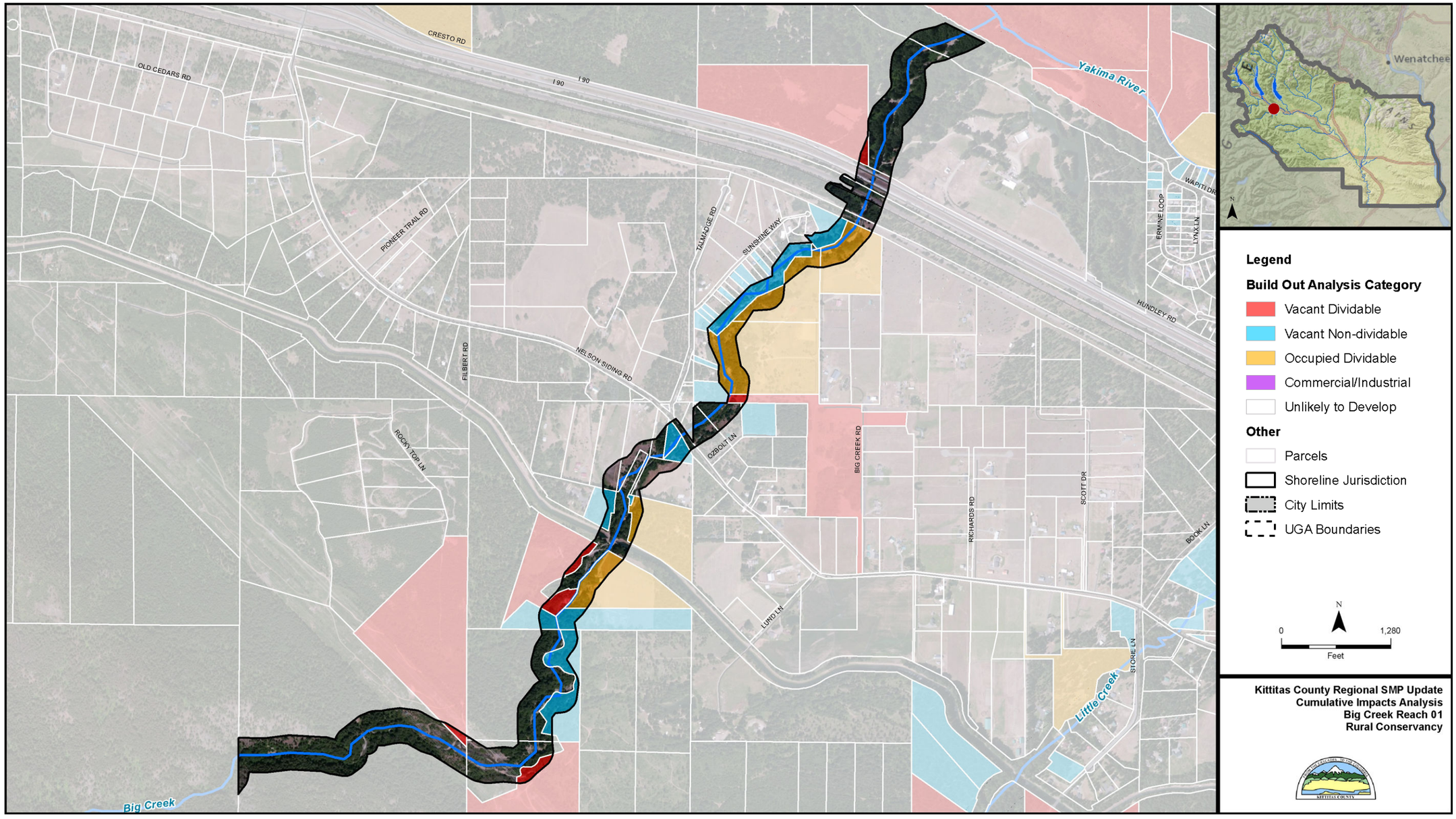
Big Creek – Shoreline Residential SED



Big Creek – Shoreline Residential SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The lower portion of Big Creek, below the National Forest boundary, is listed by Ecology (2008) for high water temperatures. A lack of forest cover/stream shading in the lower reach may contribute to high stream temperatures. Excess sediment runoff from adjacent shorelands has also been reported.	According to the build-out analysis, there is potential for approximately 9 new single family residences on existing lots (each approximately 0.5-acre in area) within the Shoreline Residential SED. Additionally, property owners may wish to construct hard armoring in the future to protect structures built within channel migration-prone areas.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could degrade the water quality of the stream.	Residential development is a permitted use in Shoreline Residential SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Investigate securing water rights to improve stream flows (Sponsor: Washington Water Trust)	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat Big Creek provides habitat for several salmon species, including spawning habitat for spring Chinook and summer steelhead. Fish habitat limiting factors in the lower reach include low instream flows, altered riparian vegetation, and low levels of large woody debris.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. Constructing new shoreline armoring may impact habitat-forming processes within the creek and degrade fish habitat.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Hydrology There are several irrigation diversions on the creek and periodic low flow issues. A channel migration zone is identified along the lower portion of the reach, as well as the identified FEMA 100-year floodplain. There is existing residential development within these hazard areas.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could also increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Big Creek – Rural Conservancy SED



Big Creek – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The lower portion of Big Creek, below the National Forest boundary, is listed by Ecology (2008) for high water temperatures. Excess sediment runoff from adjacent shorelands has also been reported.	According to the build-out analysis, there is potential for 10 new lots/homes created by subdividing existing parcels into 5-acre lots (per current zoning regulations) and an additional approximately 4 homes on existing lots within the Rural Conservancy SED.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could degrade the water quality of the stream.	Residential development is a permitted use in Rural Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Investigate securing water rights to improve stream flows (Sponsor: Washington Water Trust) • Ensure long-term protection of stream corridors via acquisitions, easements, and other agreements with willing landowners (Sponsors: Forterra and others)	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat Big Creek provides habitat for several salmon species, including spawning habitat for spring Chinook and summer steelhead. Fish habitat limiting factors include low instream flows, altered riparian vegetation along the lower reach, and low levels of large woody debris. The upper portion of the creek is generally well-forested.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development, including lot creation, must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B). Development and uses within the Rural Conservancy SED should be situated to avoid or minimize impacts to native vegetation communities (Section 4.5.C)	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Hydrology There are several irrigation diversions on the creek and associated, periodic low flow issues. A channel migration zone is identified along the lower portion of the reach, as well as the identified FEMA 100-year floodplain. There is existing residential development within these hazard areas.	*See above*	Construction of new homes and other structures within the active channel migration zone could alter stream condition and fish habitat, as well as increase flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase flooding problems within the reach.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). Subdivisions must have lots that contain at least one site, including access and utility locations that is suitable for use or development and is not located entirely within a floodway or channel migration zone. The new lots must adhere to the standard shoreline buffer without buffer averaging or reduction (Section 4.2.C). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Cherry Creek – Rural Conservancy SED

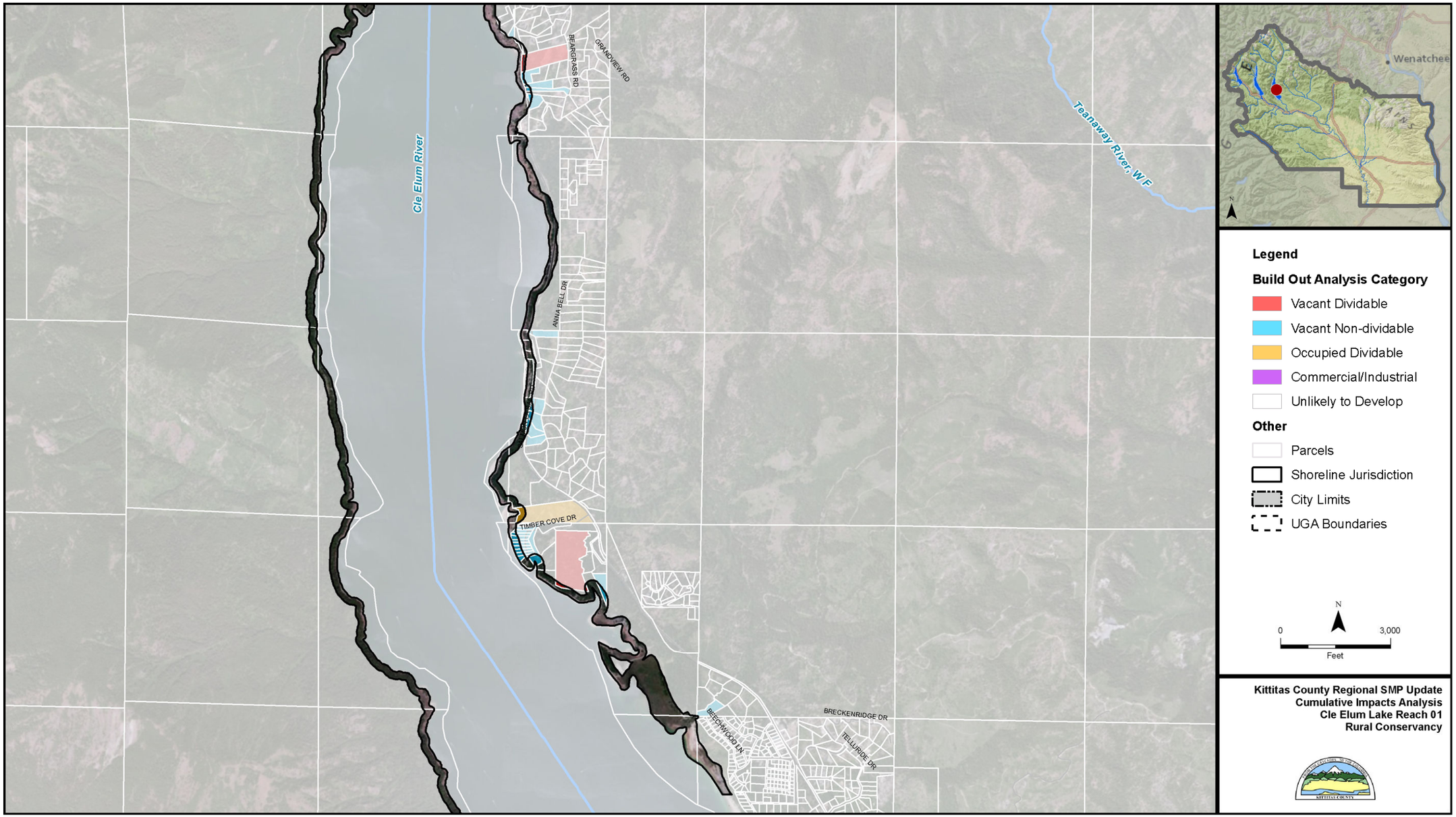
Cherry Creek – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality Cherry Creek has a minimal functional buffer and flows through lands in intensive agricultural production. The Creek is listed by Ecology (2008) for high water temperatures and pH. A TMDL has been implemented for fecal coliform, suspended sediment, turbidity, and temperature.	According to the build-out analysis, potential foreseeable future development is limited to one 2.5-acre parcel located along No. 6 Road, with potential for 1 new single family residence. The remainder of the reach is zoned for commercial agriculture.	Clearing vegetation for a home site within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. However, risks to water quality resulting from new development are relatively low due to the limited development potential within the reach.	Residential development is a permitted use in Rural Conservancy SED (Section 3.10).	• Revegetate the riparian corridor (*no identified sponsor)*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat Cherry Creek provides habitat for several salmonid species, including spawning and rearing habitat for spring Chinook and rearing habitat for summer steelhead. However, fish habitat has been extensively altered by stream channelization, and riparian areas have been largely converted to agricultural uses.	*See above*	The area of potential new development is currently within intensive agricultural production; therefore, risks to habitat are relatively low.	A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21). Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Hydrology Over half of the reach is located within the FEMA 100-year floodplain. Streamflows are highly altered by irrigation activities.	*See above*	Construction of a new home a within the floodplain could increase flooding problems within the reach. However, risks to hydrologic functions are relatively low due to the limited development potential within the reach.	New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Cle Elum Lake – Shoreline Residential SED

Cle Elum Lake – Shoreline Residential SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The lake is listed by Ecology (2008) for high water temperatures. Otherwise, the lake water quality is very good, as the tributary watersheds are forested and relatively undeveloped.	According to the build-out analysis, potential foreseeable future development within the Shoreline Residential SED consists of approximately 9 new single family residences on existing lots (each approximately 1-acre in area). In addition, there are potential for new docks along the shoreline, adjoining both existing and potential new residences.	Clearing vegetation for home sites along the lakeshore would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the lake. Use of fertilizers and herbicides within new landscaping areas could also degrade the water quality of the lake.	Residential development and private docks are permitted uses in Shoreline Residential SED (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21). Materials used for decking or other structural components must be approved by state agencies for contact with water to avoid discharge of pollutants (Section 4.6.B, Regulation #5).	• Construction of permanent upstream and downstream passage facilities (Sponsors: Reclamation and Yakama Nation)	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat The lake provides habitat for a variety of salmonid species, including spawning habitat for sockeye salmon. Much of the lakeshore is densely forested, and a priority elk winter concentration area is located east and south of the lake.	*See above*	Clearing vegetation for home sites along the lake shore could reduce water shading and wildlife habitat. Constructed of new docks and associated motor boat usage could shade out aquatic plants and disturb littoral habitat.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). Grating must cover the entire surface area (100%) of the pier, ramp, and/or float. The open area of grating must be at least 50% as rated by the manufacturer (Section 5.5.B). To prevent damage to shallow water habitat, piers or ramps must extend at least 40 feet perpendicular from the ordinary high water mark (OHWM). Docks must be positioned at least 40 feet horizontally from the OHWM (Section 5.5.B). Single-use and joint-use piers and ramps are limited to 4 feet in width. Single-use floats are limited to 160 square feet in size (Section 5.5.B).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Cle Elum Lake – Shoreline Residential SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology Cle Elum Lake is a reservoir that supplies irrigation water as part of the Yakima Project. The lake level is controlled by a 165-foot dam.	*See above*	The lake is a large reservoir controlled by a dam; it is unlikely the forecasted potential new residential development would significantly alter the hydrology of the lake.	Not applicable.	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Cle Elum Lake – Rural Conservancy SED

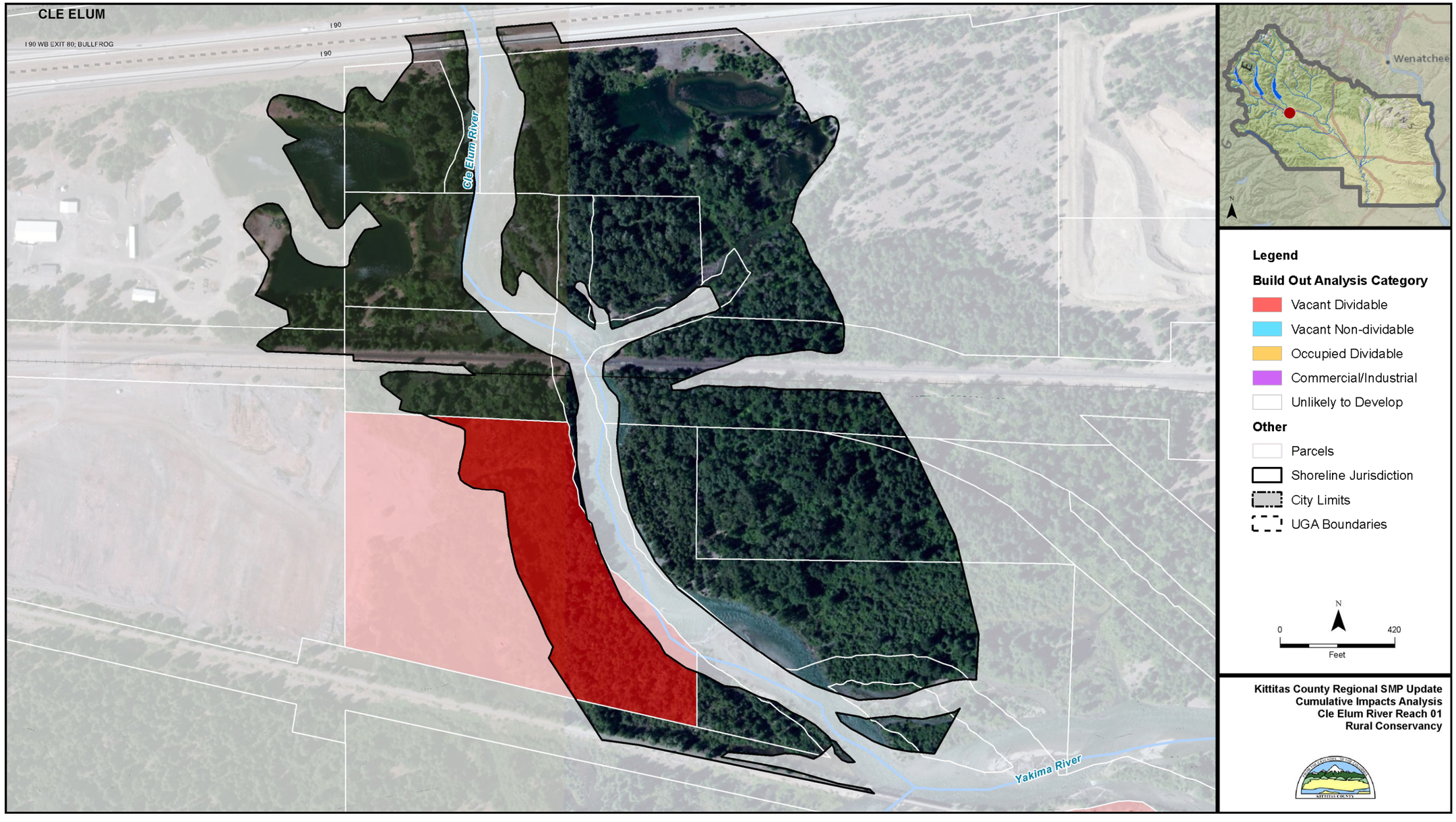


Cle Elum Lake – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The lake is listed by Ecology (2008) for high water temperatures. Otherwise, the lake water quality is very good, as the tributary watersheds are forested and relatively undeveloped.	According to the build-out analysis, potential foreseeable future development within the Rural Conservancy SED is limited to a few areas on the east shore of the lake. There is potential for approximately 9 new single family residences on existing lots (each approximately 1-acre in area) and potential for an additional 4 new single family residences created by subdividing existing parcels into 5 acre lots (per current zoning regulations). In addition, there are potential for new docks along the shoreline, adjoining both existing and potential new residences.	Clearing vegetation for home sites along the lakeshore would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the lake. Use of fertilizers and herbicides within new landscaping areas could also degrade the water quality of the lake.	Residential development and private docks are permitted uses in Rural Conservancy SED (Section 3.10). New residential development of two or more dwellings must provide joint use or community dock facilities unless joint use is demonstrated to not be feasible (Section 5.5.B). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21). Materials used for decking or other structural components must be approved by state agencies for contact with water to avoid discharge of pollutants (Section 4.6.B,).	• Construction of permanent upstream and downstream passage facilities (Sponsors: Reclamation and Yakama Nation) • Decommission and revegetate unused roads along the shorelines (*no identified sponsor*)	There is a fairly low level of anticipated new development, and a 100-foot buffer would be required in this SED. No cumulative impacts to water quality are anticipated.

Cle Elum Lake – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Habitat The lake provides habitat for a variety of salmonid species, including spawning habitat for sockeye salmon. Much of the lakeshore is densely forested, and a priority elk winter concentration area is located east and south of the lake.	*See above*	Clearing vegetation for home sites along the lake shore could reduce water shading and wildlife habitat. Constructed of new docks and associated motor boat usage could shade out aquatic plants and disturb littoral habitat.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). Development and uses within the Rural Conservancy SED should be situated to avoid or minimize impacts to native vegetation communities (Section 4.5.C) New lots must adhere to the standard shoreline buffer without buffer averaging or reduction (Section 4.2.C). Grating must cover the entire surface area (100%) of the pier, ramp, and/or float. The open area of grating must be at least 50% as rated by the manufacturer (Section 5.5.B). To prevent damage to shallow water habitat, piers or ramps must extend at least 40 feet perpendicular from the ordinary high water mark (OHWM). Docks must be positioned at least 40 feet horizontally from the OHWM (Section 5.5.B). Single-use and joint-use piers and ramps are limited to 4 feet in width. Single-use floats are limited to 160 square feet in size and 320 square feet for joint-use (Section 5.5.B).	*See above*	Cumulative impacts to habitat are not expected due to the limited potential for new development.

Cle Elum Lake – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology Cle Elum Lake is a reservoir that supplies irrigation water as part of the Yakima Project. The lake level is controlled by a 165-foot dam.	*See above*	The lake is a large reservoir controlled by a dam; it is unlikely the forecasted potential new residential development would significantly alter the hydrology of the lake.	Not applicable.	*See above*	No cumulative impacts to hydrology are anticipated from the expected new development.

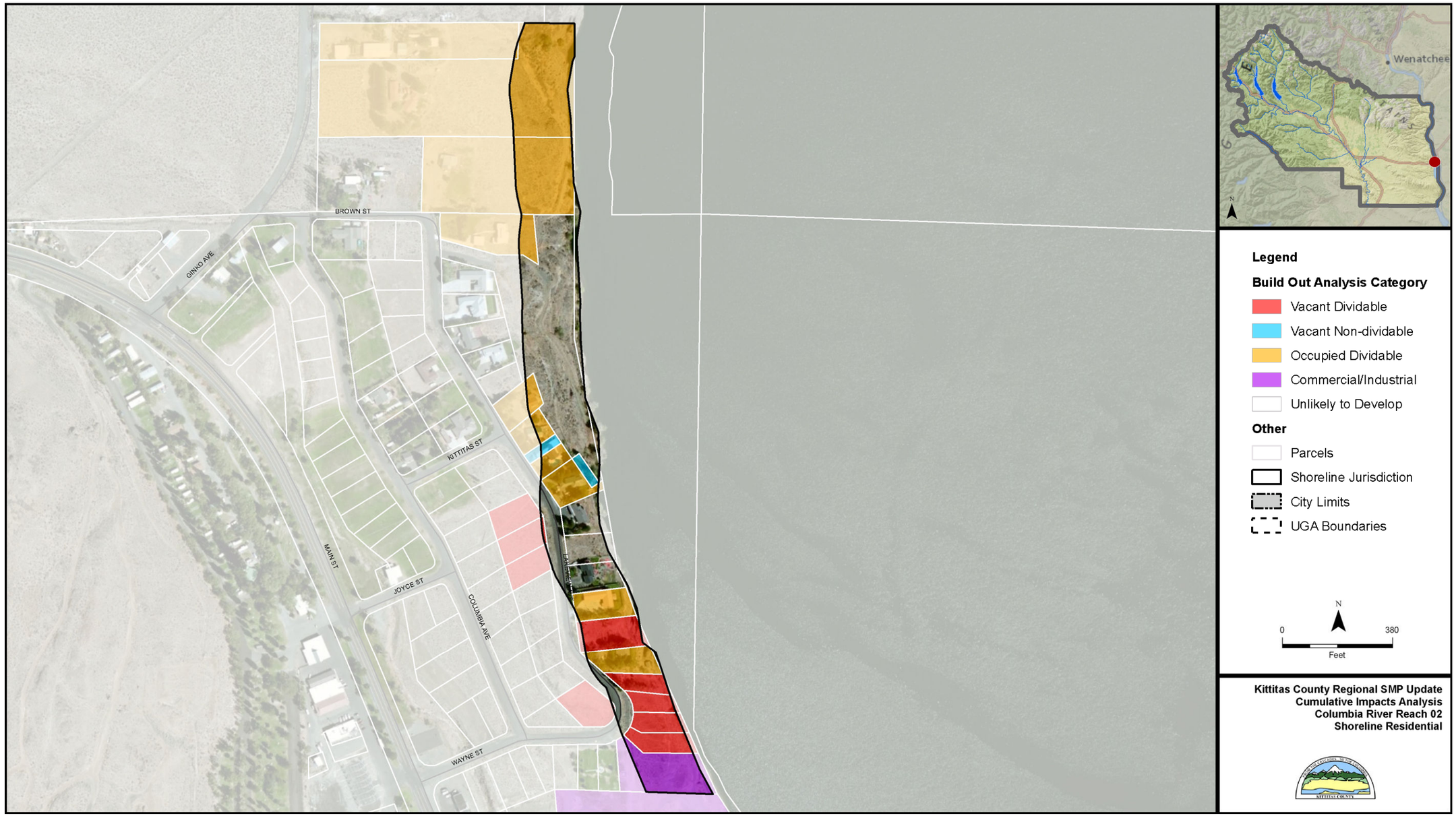
Cle Elum River (Lower) – Rural Conservancy SED



Cle Elum River (Lower) – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The lower Cle Elum River is listed by Ecology (2008) for elevated water temperatures. Otherwise, water quality is very good, as the tributary watersheds are forested and relatively undeveloped.	According to the build-out analysis, potential foreseeable future development along the lower Cle Elum River is limited to one subdividable parcel located south of I-90 along the west bank. The parcel could be divided into four, 5-acre single-family lots (per current zoning regulations).	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could degrade the water quality of the stream.	Residential development is a permitted use in Rural Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Reconnect side channel and increase channel complexity (sponsor: Kittitas Conservation Trust)	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat The river provides habitat for a variety of salmonid species, including spawning habitat for spring Chinook and summer steelhead. The lower Cle Elum River is a high-density Chinook salmon spawning area. Much of the riparian corridor is densely forested, and priority elk winter concentration and wood duck nesting habitat is mapped. Much of the riparian area upstream of I-90 is protected in conservation easements.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). Development and uses within the Rural Conservancy SED should be situated to avoid or minimize impacts to native vegetation communities (Section 4.5.C) New residential development, including lot creation, must not require shoreline stabilization measures during the life of the development/use (Section 5.14.B).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Cle Elum River (Lower) – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology A channel migration zone is identified throughout much of the reach, as well as the identified FEMA 100-year floodplain. Hydrology within the river is significantly altered by upstream water storage.	*See above*	Construction of new homes and other structures within the active channel migration zone could alter stream condition and fish habitat, as well as increase flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). Subdivisions must have lots that contain at least one site, including access and utility locations that is suitable for use or development and is not located entirely within a floodway or channel migration zone. The new lots must adhere to the standard shoreline buffer without buffer averaging or reduction (Section 4.2.C). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

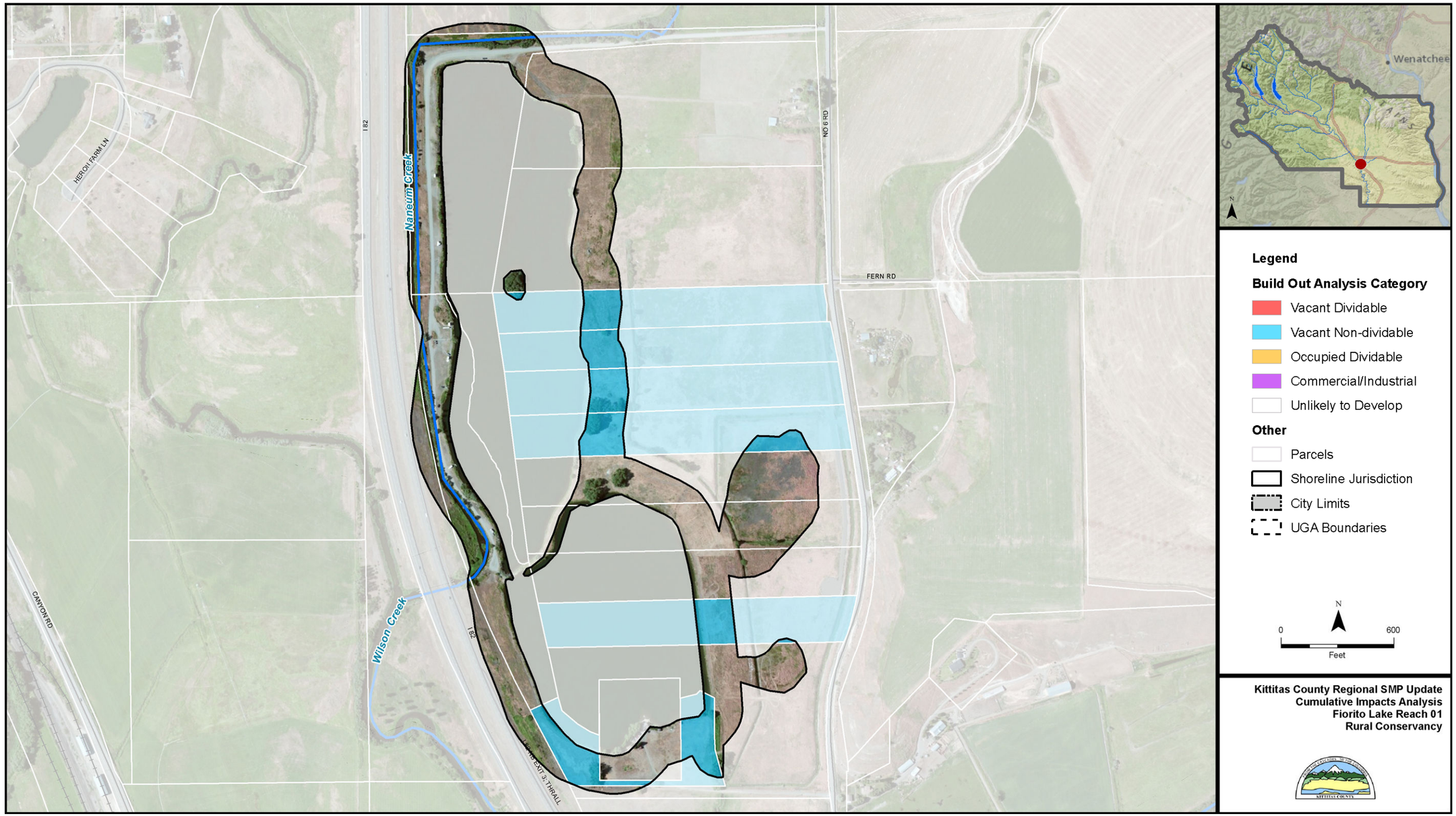
Columbia River, Reach 2 – Shoreline Residential SED



Columbia River, Reach 2 – Shoreline Residential SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The reach is listed by Ecology (2008) for elevated water temperatures, and a TMDL has been implemented for total dissolved gas.	According to the build-out analysis, potential foreseeable future development within the reach is limited to the Vantage Limited Areas of More Intensive Rural Development (LAMIRD). There is potential for approximately 2 new single family residences on existing lots (each approximately 0.1-acre in area), and an additional 37 lots/parcels created by subdividing existing parcels (into 7,200 SF lots, per current zoning regulations).	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the river. Use of fertilizers and herbicides within new landscaping areas could also degrade the water quality of the river. However, given the large size of the river and the relatively limited area of development, risks to water quality are relatively low.	Residential development and private docks are permitted uses in Shoreline Residential SED (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21). Materials used for decking or other structural components must be approved by state agencies for contact with water to avoid discharge of pollutants (Section 4.6.B).	• Prevent and control invasive species infestation at boat launches (*no identified sponsor*)	Given the large size of the river and the relatively limited areas of potential development, no cumulative impacts to water quality are anticipated.

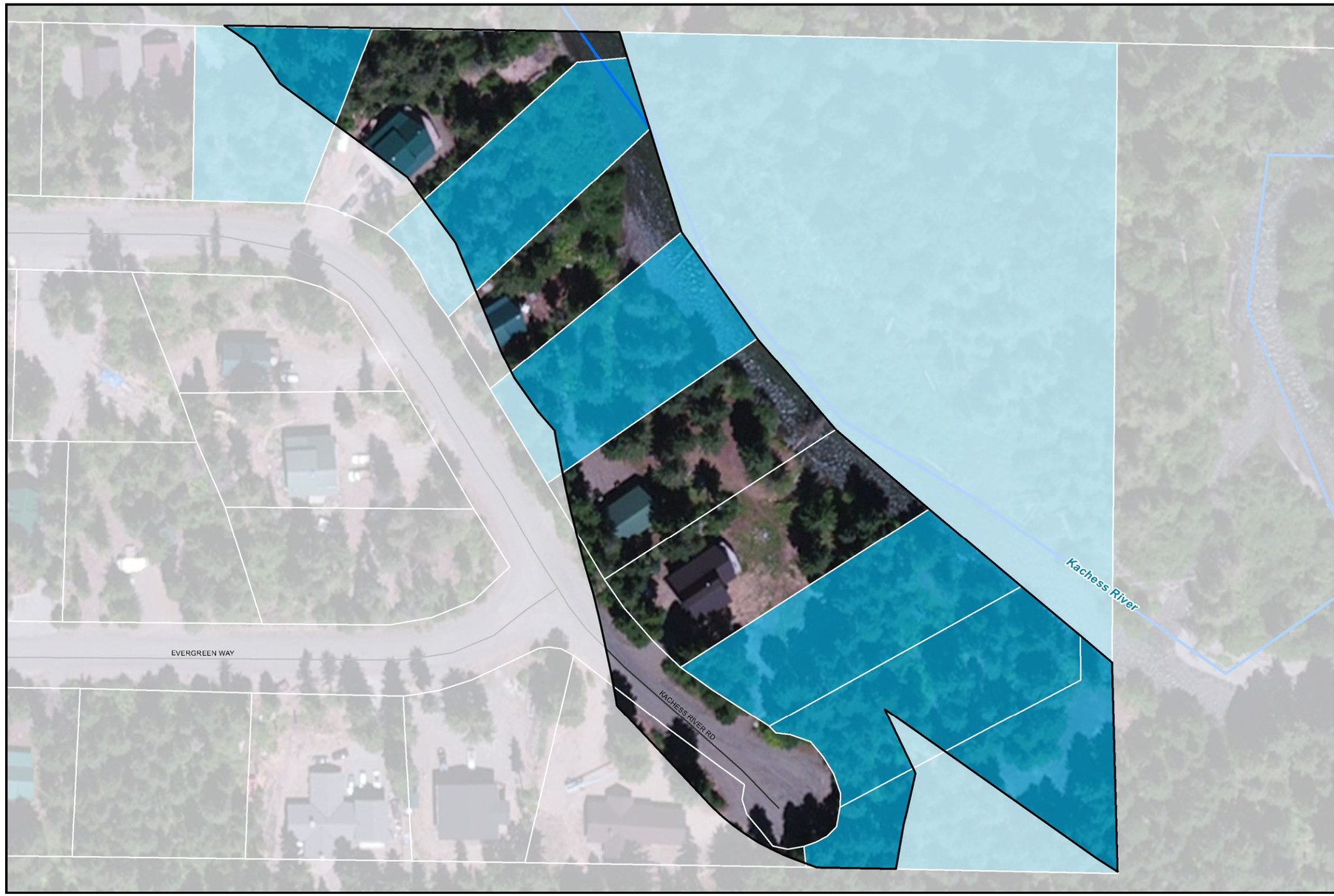
Columbia River, Reach 2 – Shoreline Residential SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Habitat The reach provides habitat for a variety of salmonids and other priority fish species, including rearing habitat for summer steelhead. Within the Vantage vicinity, priority common loon habitat is identified. Within Vantage, the reach consists of developed areas, with areas of shrub habitat bordering the river.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. Dock construction and associated motor boat usage could shade out aquatic plants and disturb littoral habitat.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New lots must adhere to the standard shoreline buffer without buffer averaging or reduction (Section 4.2.C). Grating must cover the entire surface area (100%) of the pier, ramp, and/or float. The open area of grating must be at least 50% as rated by the manufacturer (Section 5.5.B). To prevent damage to shallow water habitat, piers or ramps must extend at least 40 feet perpendicular from the ordinary high water mark (OHWM). Docks must be positioned at least 40 feet horizontally from the OHWM (Section 5.5.B). Single-use and joint-use piers and ramps are limited to 4 feet in width. Single-use floats are limited to 160 square feet in size and 320 square feet for joint-use (Section 5.5.B).	*See above*	The developable lands within the SED are generally cleared or otherwise altered. No cumulative impacts to habitat are anticipated.
Hydrology The reach primarily is within a reservoir, which is controlled by the Wanapum dam.	*See above*	The Columbia River is extremely large and this portion of the river is controlled by a dam; therefore, it is unlikely the forecasted potential new residential development would significantly alter the hydrology of the river.	Not applicable.	*See above*	The river is controlled by a dam in this location; it is unlikely for the potential new development to significantly alter the hydrology of the river. No cumulative impacts to hydrology are anticipated.

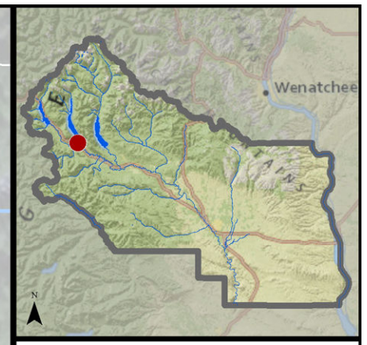
Fiorito Lake – Rural Conservancy SED



Fiorito Lake – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality Fiorito Lake is listed by Ecology (2008) for the presence of exotic invasive species. The lake has a minimal functional buffer, particularly along the west shore bordering I-90.	According to the build-out analysis, there is potential for approximately 6 new single family residences on existing lots (each approximately 10-acre in area) along the east side of the lake.	An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the lake. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Rural Conservancy SED (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Control invasive aquatic weeds in the lake (*no identified sponsor*)	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat The lake is annually stocked with rainbow trout by WDFW. The surrounding lakeshore is highly altered by surrounding agricultural activities and I-90.	*See above*	The area of potential new development is currently within agricultural production; therefore, risks to habitat are relatively low.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Hydrology The lake is a former gravel pit that drains to Naneum Creek. The FEMA 100-year floodplain is identified throughout much of the reach.	*See above*	Risks to hydrologic functions are low due to the status of the lake as a former gravel pit, and the relatively limited development potential within the reach.	Not applicable.	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Kachess River (Lower) – Shoreline Residential SED





Legend

Build Out Analysis Category

- Vacant Dividable
- Vacant Non-dividable
- Occupied Dividable
- Commercial/Industrial
- Unlikely to Develop

Other

- Parcels
- Shoreline Jurisdiction
- City Limits
- UGA Boundaries

N

0 100

Feet

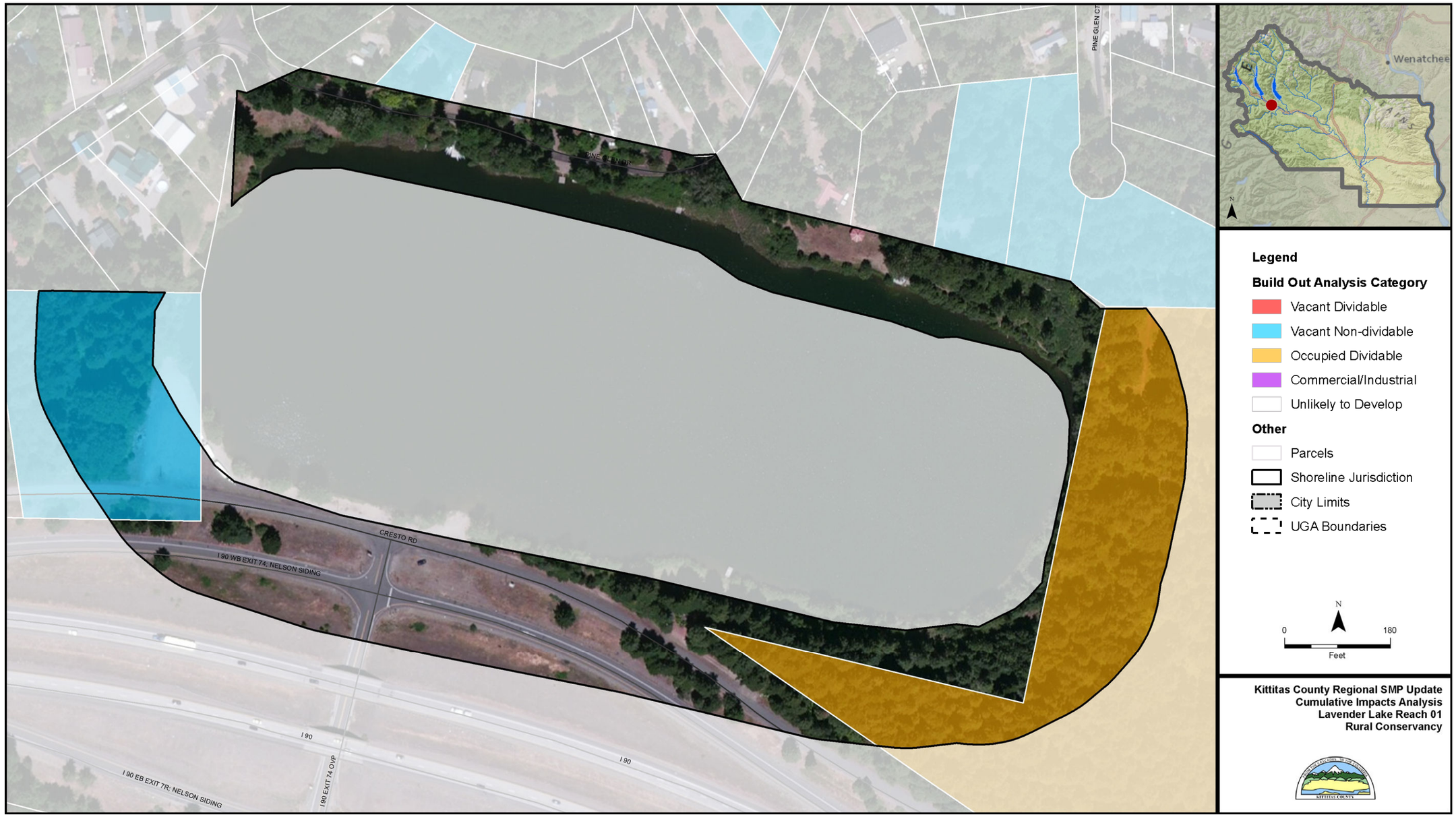
Kittitas County Regional SMP Update
Cumulative Impacts Analysis
Kachess River Reach 01
Shoreline Residential

Kachess River (Lower) – Shoreline Residential SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The lower Kachess River has periodic low dissolved oxygen levels. Otherwise, water quality is very good, as the tributary watersheds are forested and relatively undeveloped.	According to the build-out analysis, there is potential for approximately 6 new single family residences on existing lots (each approximately 0.5-acre in size) along Kachess River Road.	Clearing vegetation for home sites within the riparian zone would reduce water shading. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Shoreline Residential SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	No restoration opportunities identified.	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat The river provides habitat for a variety of salmonid species, including anadromous species, and has a generally densely-forested riparian corridor.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Hydrology The majority of the reach is located within the identified FEMA 100-year floodplain. Hydrology within the river is significantly altered by upstream water storage.	*See above*	New structures built within the floodplain could increase downstream flooding problems.	New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Lavender Lake – Shoreline Residential SED

Lavender Lake – Shoreline Residential SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality Lavender Lake is listed by Ecology (2008) for the presence of exotic invasive species. Approximately half of the lake shore has a minimal functional buffer, particularly along the south shore bordering I-90.	According to the build-out analysis, there is potential for 3 new single family residences within the Shoreline Residential SED on existing lots (each approximately 1-acre in area).	An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the lake. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Shoreline Residential SED (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	No restoration opportunities identified.	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat The lake is annually stocked with rainbow trout by WDFW. Some areas of intact forest habitat are located at the east and west ends of the lake.	*See above*	Clearing vegetation for home sites within along the lakeshore could reduce water shading and wildlife habitat.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Hydrology The lake is a former gravel pit with no permanent surface water outlet.	*See above*	Risks to hydrologic functions are low due to the status of the lake as a former gravel pit and the lack of a surface water outlet.	Not applicable.	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Lavender Lake – Rural Conservancy SED

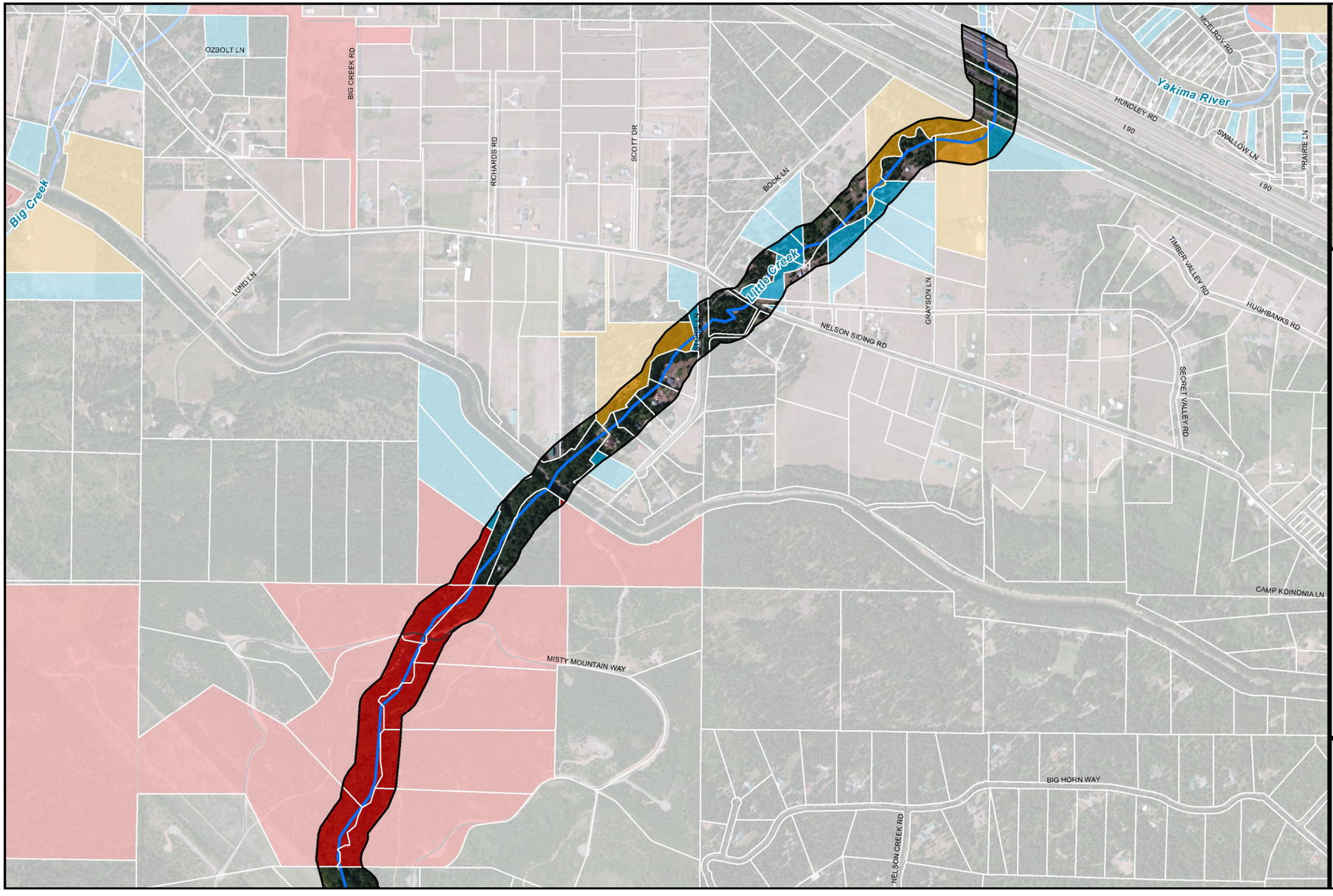


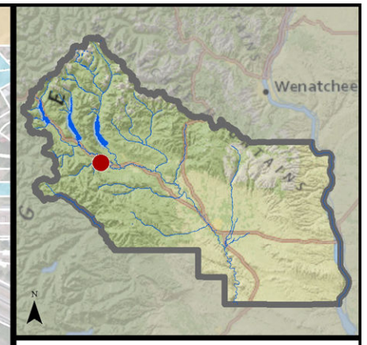
Lavender Lake – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality Lavender Lake is listed by Ecology (2008) for the presence of exotic invasive species. Approximately half of the lake shore has a minimal functional buffer, particularly along the south shore bordering I-90.	According to the build-out analysis, there is potential for 3 new single family residences within the Rural Conservancy SED: one residence on an existing 3-acre lot, and two additional lots/residences created by subdividing an existing parcel into 5-acre lots (per current zoning regulations).	An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the lake. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Rural Conservancy SED (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	No restoration opportunities identified.	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat The lake is annually stocked with rainbow trout by WDFW. Some areas of intact forest habitat are located at the east and west ends of the lake.	*See above*	Clearing vegetation for home sites within along the lakeshore could reduce water shading and wildlife habitat.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New lots must adhere to the standard shoreline buffer without buffer averaging or reduction (Section 4.2.C).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Hydrology The lake is a former gravel pit with no permanent surface water outlet.	*See above*	Risks to hydrologic functions are low due to the status of the lake as a former gravel pit and the lack of a surface water outlet.	Not applicable.	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Little Creek – Shoreline Residential SED

Little Creek – Shoreline Residential SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The lower portion of Little Creek is listed by Ecology (2008) for high water temperatures. A lack of forest cover/stream shading in the lower reach may contribute to high stream temperatures. Excess sediment runoff from adjacent shorelines has also been reported.	According to the build-out analysis, there is potential for approximately 6 new single family residences on existing lots (ranging in area from approximately 0.2 to 3 acres) within the Shoreline Residential SED. Additionally, property owners may wish to construct hard armoring in the future to protect structures built close to the shoreline.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Shoreline Residential SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	No restoration opportunities identified.	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat Little Creek provides habitat for several salmon species, including spawning and rearing habitat for spring Chinook. Fish habitat limiting factors in the lower reach include low instream flows, altered riparian vegetation, and low levels of large woody debris. Historically, a significant amount of wetland habitat was located along the lower reach, but much of this area has been altered by development.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. Constructing new shoreline armoring may impact habitat-forming processes within the creek and degrade fish habitat.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Hydrology There are several irrigation diversions on the creek and periodic low flow issues. The identified FEMA 100-year floodplain is identified along the lower portion of the reach, and there is existing residential development within this hazard area.	*See above*	Construction of new homes and other structures within the active channel migration zone could alter stream condition and fish habitat, as well as increase flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Little Creek – Rural Conservancy SED





Legend

Build Out Analysis Category

- Vacant Dividable
- Vacant Non-dividable
- Occupied Dividable
- Commercial/Industrial
- Unlikely to Develop

Other

- Parcels
- Shoreline Jurisdiction
- City Limits
- UGA Boundaries

N

0 1,120

Feet

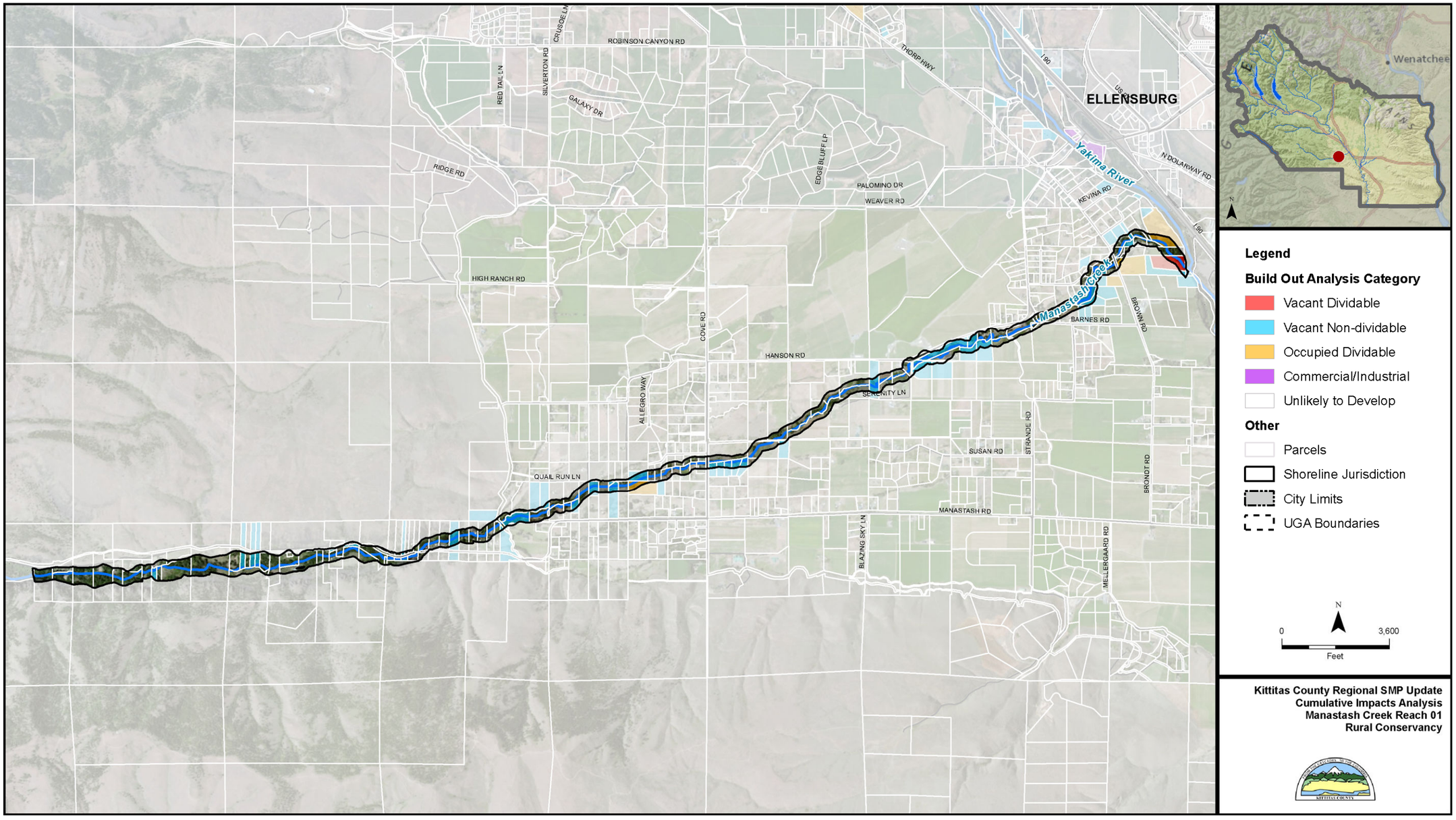
Kittitas County Regional SMP Update
Cumulative Impacts Analysis
Little Creek Reach 01
Rural Conservancy

Little Creek – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The lower portion of Little Creek is listed by Ecology (2008) for high water temperatures. A lack of forest cover/stream shading in the lower reach may contribute to high stream temperatures. Excess sediment runoff from adjacent shorelines has also been reported.	According to the build-out analysis, there is significant potential for new residential development within the Rural Conservancy SED of Little Creek. Foreseeable future development includes approximately 11 new residences on existing lots (each approximately 3 acres in area) and an additional 39 residences/lot created by subdividing existing parcels into 5-acre lots (per current zoning regulations). Currently, the County is reviewing 3 subdivision proposals in the Misty Mountain Way vicinity. These proposals show a total of 7 new residences on approximately 5-acre lots. Additionally, property owners may wish to construct hard armoring in the future to protect structures built close to the shoreline.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Rural Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Investigate securing water rights to improve instream flows (*no identified sponsor*)	New rural-density residential development, with modern septic systems, would be unlikely to significantly degrade the water quality of the creek. In addition, the presence of a wide CMZ along the creek will likely result in large setbacks from the creek. No anticipated cumulative impacts to water quality are anticipated.

Little Creek – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Habitat Little Creek provides habitat for several salmon species, including spawning and rearing habitat for spring Chinook. Fish habitat limiting factors in the lower reach include low instream flows, altered riparian vegetation, and low levels of large woody debris. Historically, a significant amount of wetland habitat was located along the lower reach, but much of this area has been altered by development.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. Constructing new shoreline armoring may impact habitat-forming processes within the creek and degrade fish habitat.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed (Section 4.5.B). Development and uses within the Rural Conservancy SED should be situated to avoid or minimize impacts to native vegetation communities (Section 4.5.C) New residential development, including lot creation, must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B).	*See above*	The presence of a wide CMZ along the creek will likely result in large building setbacks, which would minimize the amount of potential forest cover loss within shoreline jurisdiction. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no anticipated cumulative impacts to habitat are anticipated.

Little Creek – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology There are several irrigation diversions on the creek and periodic low flow issues. The identified FEMA 100-year floodplain is identified along the lower portion of the reach, and there is existing residential development within this hazard area.	*See above*	Construction of new homes and other structures within the active channel migration zone could alter stream condition and fish habitat, as well as increase flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). Subdivisions must have lots that contain at least one site, including access and utility locations that is suitable for use or development and is not located entirely within a floodway. The new lots must adhere to the standard shoreline buffer without buffer averaging or reduction (Section 4.2.C). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	The presence of a wide CMZ along the creek will likely result in large building setbacks. New structures may be constructed in the floodplain, but compensatory floodplain storage would be required. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no cumulative impacts to hydrology are anticipated.

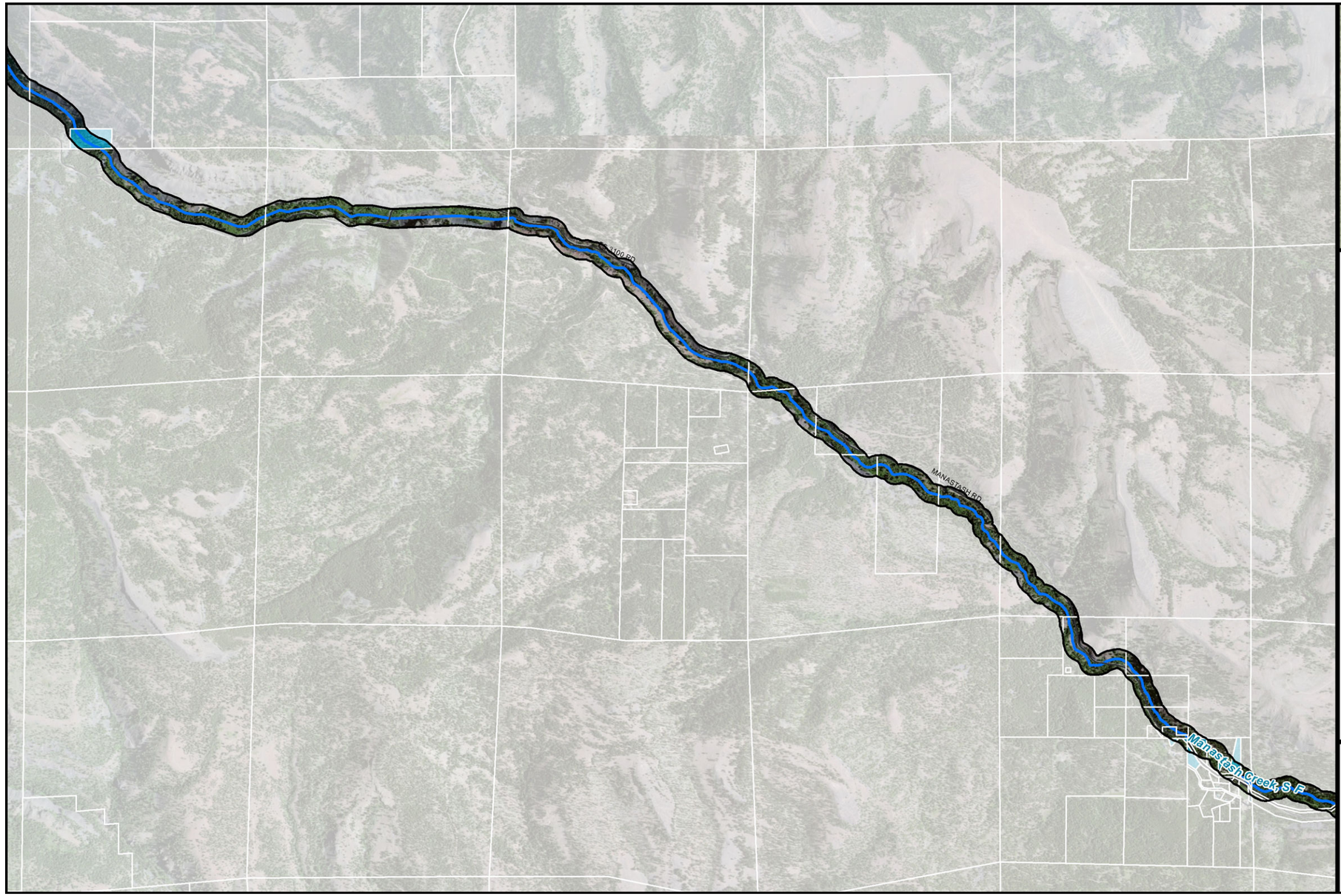
Manastash Creek – Rural Conservancy SED

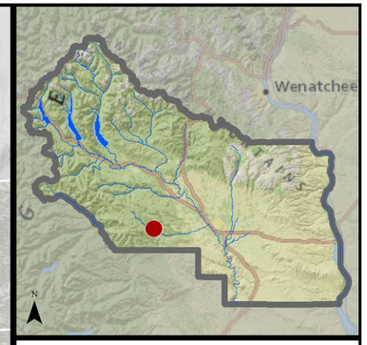


Manastash Creek – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality Portions of Manastash Creek are listed by Ecology (2008) for high water temperatures, low dissolved oxygen, fecal coliform, and pH. There is a minimal functional buffer along the creek, particularly downstream of Manastash Canyon where the creek flows across agricultural land.	According to the build-out analysis, there is significant potential for new residential development along Manastash Creek. Foreseeable future development includes approximately 36 new single family residences on existing lots (ranging from approximately 1.5 to 9 acres in area) and an additional 7 residences/lots created by subdividing existing parcels into 5-acre lots (per current zoning regulations). Additionally, property owners may wish to construct hard armoring in the future to protect structures built close to the shoreline against channel migration and flooding hazards.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Rural Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Decommission and revegetate unused roads (no identified sponsor) • Secure water rights to improve instream flows (Sponsors: KCCD and others) • Consolidated Pipline and Manastash Water Ditch Association Pipeline Construction (Sponsor: KCCD) • Reed Diversion Removal Design (Sponsor: KCCD) • Anderson Diversion Irrigation Water Acquisition (Sponsor: KCCD) • Manastash Creek Sprinkler Conversion (Sponsor: KCCD)	New rural-density residential development, with modern septic systems, would be unlikely to significantly degrade the water quality of the creek. In addition, the presence of a wide CMZ along the creek will likely result in large setbacks from the creek. No anticipated cumulative impacts to water quality are anticipated.
Habitat Manastash Creek provides habitat for resident salmonid species, and there are reports of coho rearing habitat at the downstream end. Anadromous fish use is limited by extremely low instream flows that occur in the summer, primarily the result of irrigation diversions. Much of the downstream portion of the creek is highly modified and flows across agricultural land, while the upstream end has a more intact riparian vegetation community. Priority habitats mapped along the creek include mule deer winter range and cliffs/bluffs.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. Constructing new shoreline armoring may impact habitat-forming processes within the creek and degrade fish habitat.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). Development and uses within the Rural Conservancy SED should be situated to avoid or minimize impacts to native vegetation communities (Section 4.5.C) New residential development, including lot creation, must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B).	*See above*	The presence of a wide CMZ along the creek will likely result in large building setbacks, which would minimize the amount of potential forest cover loss within shoreline jurisdiction. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no anticipated cumulative impacts to habitat are anticipated.

Manastash Creek – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology There are substantial channel migration, alluvial fan, and flood hazard areas mapped along the creek, and significant residential development is located within these areas. Destructive flood and channel migration events have recently occurred along the creek. There are several irrigation diversions located along the creek, which contribute to very low summer instream flows in the lower portion of the creek.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems, which is already a significant problem along the creek.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). Subdivisions must have lots that contain at least one site, including access and utility locations that is suitable for use or development and is not located entirely within a floodway or channel migration zone. The new lots must adhere to the standard shoreline buffer without buffer averaging or reduction (Section 4.2.C). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	The presence of a wide CMZ along the creek will likely result in large building setbacks. New structures may be constructed in the floodplain, but compensatory floodplain storage would be required. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no cumulative impacts to hydrology are anticipated.

Manastash Creek, South Fork – Rural Conservancy SED





Legend

Build Out Analysis Category

- Vacant Dividable
- Vacant Non-dividable
- Occupied Dividable
- Commercial/Industrial
- Unlikely to Develop

Other

- Parcels
- Shoreline Jurisdiction
- City Limits
- UGA Boundaries

N

0 2,500

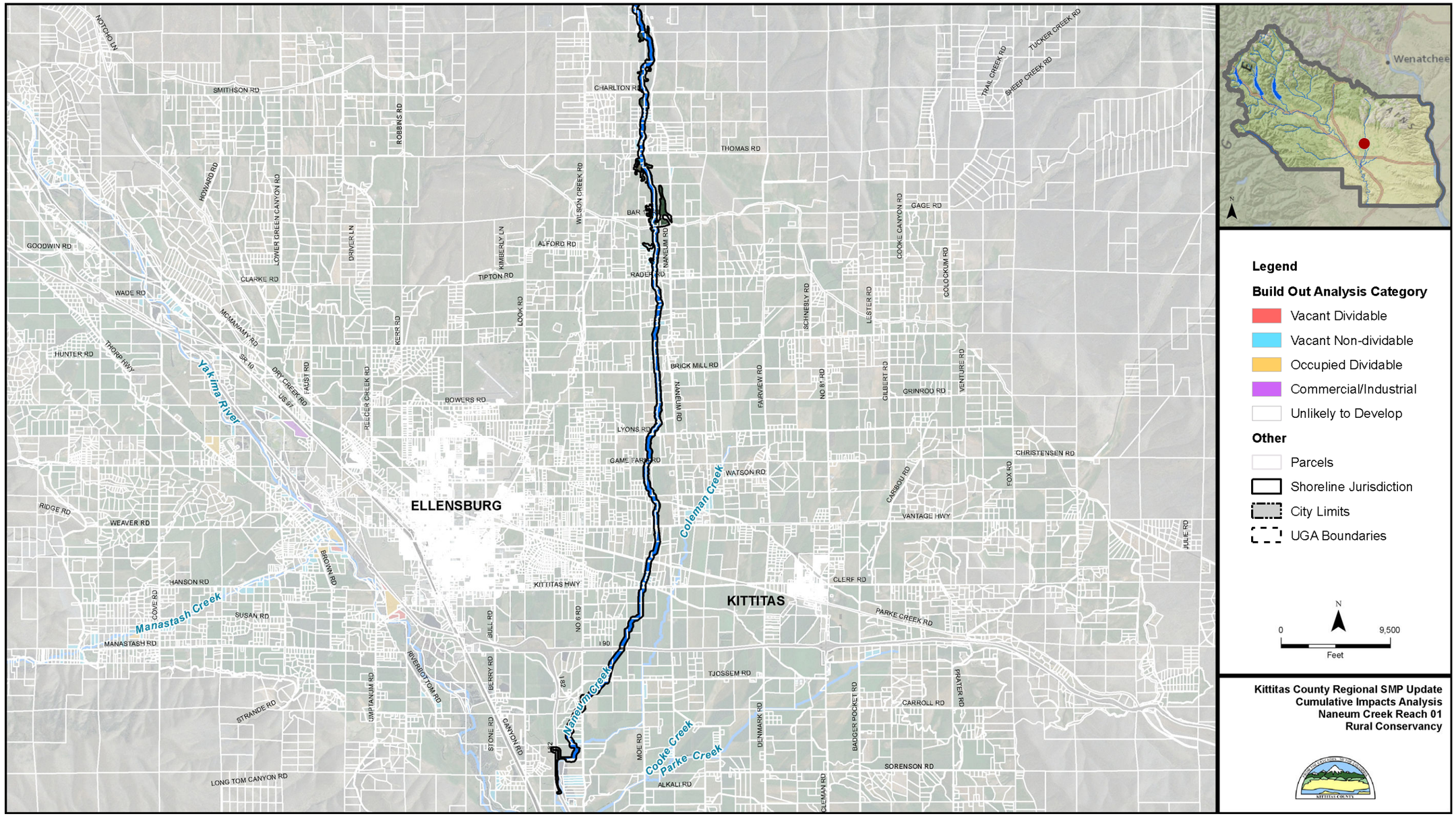
Feet

Kittitas County Regional SMP Update
Cumulative Impacts Analysis
South Fork Manastash Creek Reach 01
Rural Conservancy

Manastash Creek, South Fork – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The creek is listed by Ecology (2008) for high water temperatures. Most of the riparian buffer along the creek consists of relatively undisturbed forest habitat.	According to the build-out analysis, there is potential for approximately 6 new single family residences on existing lots (ranging in area from approximately 0.5 to 3 acres). Additionally, property owners may wish to construct hard armoring in the future to protect structures built close to the shoreline against channel migration and flooding hazards.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Rural Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	No restoration opportunities identified.	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat The creek provides habitat for resident salmonid species. Anadromous fish access is blocked by the extremely low instream flows that occur in the summer within the mainstem creek. The riparian corridor is generally well-forested, and priority mule deer winter range, bighorn sheep summer range, elk winter range, and cliffs/bluffs are mapped within the reach.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. Constructing new shoreline armoring may impact habitat-forming processes within the creek and degrade fish habitat.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Manastash Creek, South Fork – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology A channel migration zone is mapped along the creek, although the risk of migration is somewhat less than the mainstem. The FEMA 100-year floodplain is identified at the lower end of the creek.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems, which is currently a significant problem along the mainstem creek.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R, Regulation #2, 4.2.T).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

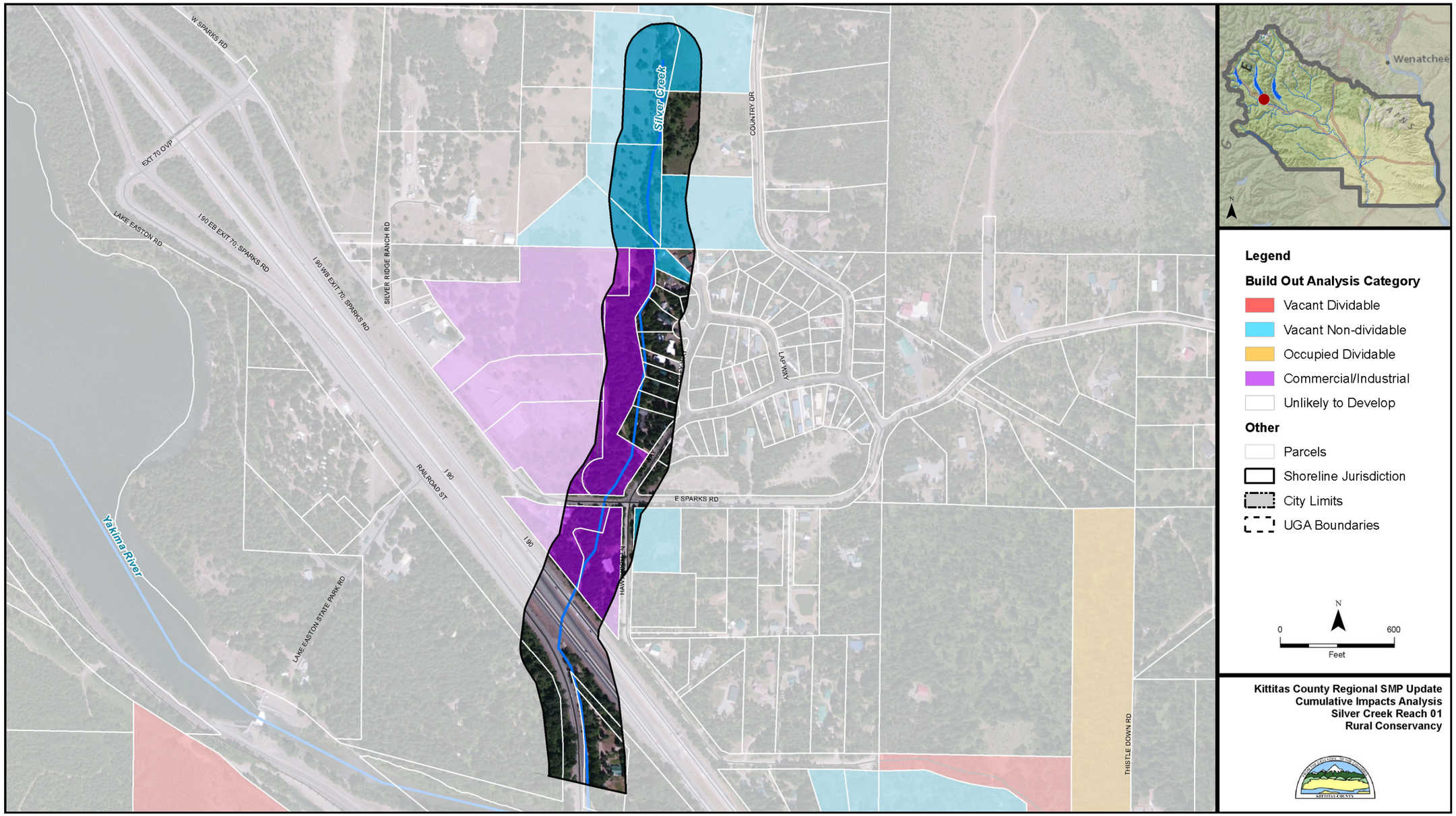
Naneum Creek – Rural Conservancy SED



Naneum Creek – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality Naneum Creek is listed by Ecology (2008) for elevated temperatures and pH; TMDLs have been implemented for fecal coliform and temperature. The downstream portion of the creek has a minimal functional buffer and flows through lands in intensive agricultural production.	According to the build-out analysis, potential foreseeable development is limited to the lower portion of the creek, within Kittitas Valley. There is potential for approximately 36 new single family residences on existing lots (ranging from approximately 1 to 10 acres in area). Additionally, property owners may wish to construct hard armoring in the future to protect structures built within channel migration-prone areas.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Rural Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Investigate re-establishing a natural stream channel (the creek was historically channelized) and revegetating the riparian corridor (*no identified sponsor*). • Investigate installing fish screens on irrigation diversions, correcting fish passage barriers, and separating irrigation canals and the creek channel to prevent entrainment of fish (Sponsor: KCCD).	New rural-density residential development, with modern septic systems, would be unlikely to significantly degrade the water quality of the creek. No cumulative impacts to water quality are anticipated.
Habitat The creek provides habitat for several salmonid species, including rearing habitat for spring Chinook. However, fish habitat within the lower creek has been extensively altered by stream channelization, and riparian areas have been largely converted to agricultural uses. Upstream of the Kittitas valley, the riparian corridor is more intact, and priority mule deer winter range and an elk calving area are identified.	*See above*	The area of potential new development is currently within intensive agricultural production; therefore, risks to habitat are relatively low.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B).	*See above*	The creek channel and surrounding riparian habitat are already highly altered by agricultural development. Under the SMP, it is unlikely that new rural residential development would result in cumulative impacts to habitat.

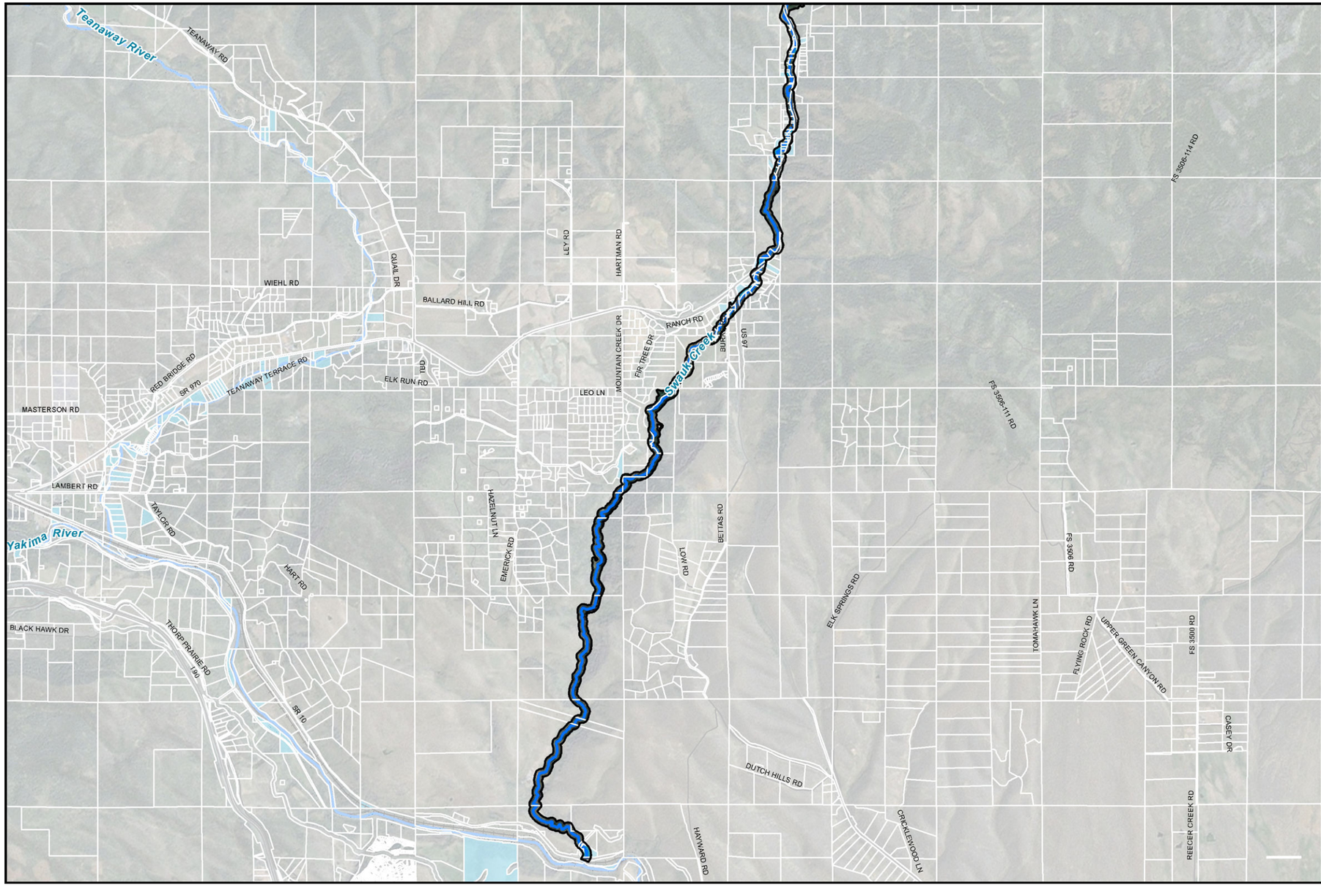
Naneum Creek – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology Streamflows within the lower creek are highly altered by irrigation activities, while flows are less altered in the upstream portion. The majority of the downstream portion has potential for channel migration and the FEMA 100-year floodplain is present in some locations.	*See above*	Construction of new homes and other structures within the active channel migration zone could alter stream condition and fish habitat, as well as increase flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	The presence of a wide CMZ along the creek will likely result in large building setbacks. New structures may be constructed in the floodplain, but compensatory floodplain storage would be required. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no cumulative impacts to hydrology are anticipated.

Silver Creek – Rural Conservancy SED



Silver Creek – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality Silver Creek has no identified water quality impairments (Ecology, 2008).	According to the build-out analysis, there is potential for approximately 8 new single family residences on existing lots (ranging from approximately 0.5 to 5 acres in area). In addition, there are approximately 7 acres of land within shoreline jurisdiction that is zoned for commercial uses. Currently, the land is relatively undeveloped and would be expected to develop in the future.	Clearing vegetation for home sites and commercial structures within the riparian zone would reduce water shading. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Rural Conservancy SED. Water-dependent and water-related commercial uses required a conditional use permit. Water-enjoyment commercial uses are a permitted use. Non-water-oriented commercial uses are prohibited (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Correct the fish passage barrier at Sparks Road (*no sponsor identified*)	There is a fairly low level of anticipated new development on the creek, and new commercial development would be required to meet current stormwater standards. No cumulative impacts to water quality are anticipated.
Habitat Silver Creek provides habitat for westslope cutthroat; the I-90 culvert blocks anadromous fish use. Much of the riparian corridor is densely forested, and priority elk winter concentration habitat is mapped within the reach.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). Development and uses within the Rural Conservancy SED should be situated to avoid or minimize impacts to native vegetation communities (Section 4.5.C)	*See above*	Much of the developable parcels have already sustained some clearing, and the SMP requires that development within this SED be situated to minimize impacts to vegetation. No cumulative impacts are anticipated.
Hydrology The lower portion of the reach is located within the FEMA 100-year floodplain.	*See above*	New structures built within the floodplain could increase downstream flooding problems.	New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	Development potential along the creek is relatively limited; no cumulative impacts to hydrology are anticipated.

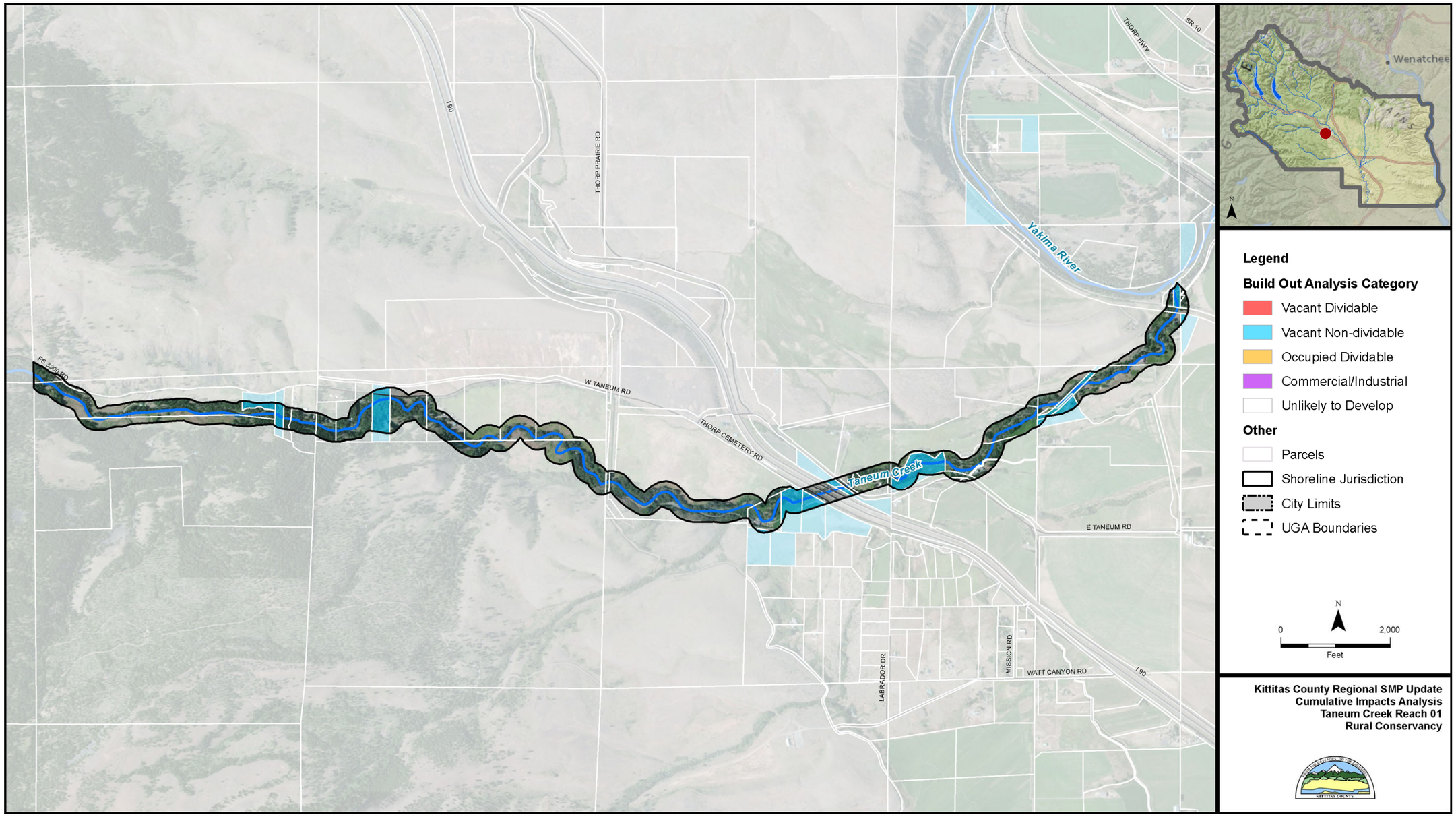
Swauk Creek – Rural Conservancy SED



Swauk Creek – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality Swauk Creek is listed by Ecology (2008) for elevated temperatures, and a TMDL has been implemented. Roads within the watershed contribute significant excess sediment to the creek, as well as runoff from Highway 97, which borders the creek for much of its length.	According to the built-out analysis, there is potential for approximately 27 new single family residences on existing lots (ranging in area from approximately 0.5 to 6 acres). Additionally, property owners may wish to construct hard armoring in the future to protect structures built close to the shoreline.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Rural Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Swauk and Iron Creek Restoration Design (sponsors: Yakama National and others) • Increase stream flows through lease or purchase of water rights and water conservation projects (Washington Water Trust) • Correct fish passage barriers within the watershed (*no identified sponsor*) • Revegetated disturbed riparian areas, where possible (*no identified sponsor*) • Replace WSDOT culverts that block fish passage and enhance/restore floodplain habitat (Sponsors: WSDOT and others)	New rural-density residential development, with modern septic systems, would be unlikely to significantly degrade the water quality of the creek. In addition, the presence of a wide CMZ along the creek will likely result in large setbacks from the creek. No anticipated cumulative impacts to water quality are anticipated.
Habitat The creek provides habitat for several salmonid species, including spawning habitat for summer steelhead. However, fish habitat is limited by sedimentation, a lack of large woody debris, and low summer instream flows. Much of the riparian corridor contains dense forest habitat, but portions have been altered by agriculture and development and Highway 97 borders the creek for much of its length.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. Constructing new shoreline armoring may impact habitat-forming processes within the creek and degrade fish habitat.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B). Development and uses within the Rural Conservancy SED should be situated to avoid or minimize impacts to native vegetation communities (Section 4.5.C)	*See above*	The presence of a wide CMZ along the creek will likely result in large building setbacks, which would minimize the amount of potential forest cover loss within shoreline jurisdiction. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no anticipated cumulative impacts to habitat are anticipated.

Swauk Creek – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology Almost the entire reach has potential for channel migration, and the FEMA 100-year floodplain is identified along much of the creek. Several irrigation diversions are located on the creek, which contribute to seasonally low instream flows.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	The presence of a wide CMZ along the creek will likely result in large building setbacks. New structures may be constructed in the floodplain, but compensatory floodplain storage would be required. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no cumulative impacts to hydrology are anticipated.

Taneum Creek – Rural Conservancy SED



Taneum Creek – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality Taneum Creek is listed by Ecology (2008) for low dissolved oxygen, fecal coliform, pH, and elevated water temperatures. TMDLs have been implemented for temperature, turbidity, and suspended sediment.	According to the build-out analysis, there is potentially for approximately 13 new single family residences on existing lots (ranging from approximately 1.5 to 7 acres in area). Additionally, property owners may wish to construct hard armoring in the future to protect structures built within channel migration-prone areas.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Rural Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Investigate securing water rights to improve instream flows (Sponsor: Washington Water Trust and others) • Decommission and revegetate unused roads (*no identified sponsor*) • Large wood replenishment project (sponsor: Mid-Columbia Regional Fisheries Enhancement Group) • Correct remaining fish passage barriers in the watershed (*no identified sponsor*) • Revegetate disturbed riparian areas (*no identified sponsor*)	New rural-density residential development, with modern septic systems, would be unlikely to significantly degrade the water quality of the creek. In addition, development potential along the creek is fairly limited. No anticipated cumulative impacts to water quality are anticipated.
Habitat The creek provides for a variety of salmonid species, including spawning and rearing habitat for spring Chinook. Fish habitat in the downstream section is limited by low summer and fall flows, a result of irrigation diversions. Much of the riparian corridor along the lower creek has been developed with agriculture and low-density residential development, although some forest and shrub vegetation is still present. Upstream, the creek is bordered by dense forest cover. Priority elk and mule deer winter range is mapped along the creek.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. Constructing new shoreline armoring may impact habitat-forming processes within the creek and degrade fish habitat.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B). Development and uses within the Rural Conservancy SED should be situated to avoid or minimize impacts to native vegetation communities (Section 4.5.C)	*See above*	The presence of a wide CMZ along the creek will likely result in large building setbacks, which would minimize the amount of potential forest cover loss within shoreline jurisdiction. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no anticipated cumulative impacts to habitat are anticipated.

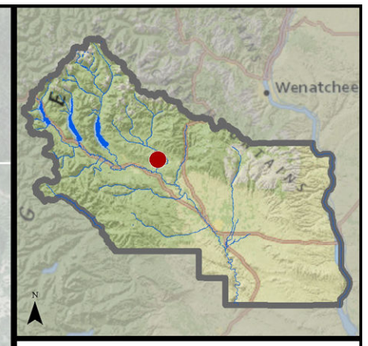
Taneum Creek – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology Almost the entire reach has potential for channel migration, and the FEMA 100-year floodplain is identified along the lower portion of the creek. The floodplain along the lower creek is described as "large and unpredictable" Several irrigation diversions are located on the creek, which contribute to seasonally low instream flows.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	The presence of a wide CMZ along the creek will likely result in large building setbacks. New structures may be constructed in the floodplain, but compensatory floodplain storage would be required. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no cumulative impacts to hydrology are anticipated.

Teanaway River – Shoreline Residential SED

Teanaway River – Shoreline Residential SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality TMDLs have been implemented for elevated water temperatures and suspended sediment. Sediment sources include landslides, roads, agriculture, and recreational uses. Within the Shoreline Residential SED, the riparian buffer has been modified by residential development.	According to the build-out analysis, there is potential for approximately 7 new single family residences on existing lots (each approximately 0.5-acre in area) within the Shoreline Residential SED. Additionally, property owners may wish to construct hard armoring in the future to protect structures built within channel migration-prone areas.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Shoreline Residential SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Investigate securing water rights to improve instream flows (Sponsor: Washington Water Trust)	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat The river provides habitat for a variety of salmonids, including spawning and rearing habitat for spring Chinook. Within the Shoreline Residential SED, habitat has been altered by residential development, but some natural forest cover remains.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. Constructing new shoreline armoring may impact habitat-forming processes within the creek and degrade fish habitat.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Teanaway River – Shoreline Residential SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology Almost the entire reach is located within the FEMA 100-year floodplain and has potential for channel migration. The river experiences periodic low flows in the summer and fall, partially the result of multiple stream diversions.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Teanaway River – Rural Conservancy SED



Legend

Build Out Analysis Category

- Vacant Dividable
- Vacant Non-dividable
- Occupied Dividable
- Commercial/Industrial
- Unlikely to Develop

Other

- Parcels
- Shoreline Jurisdiction
- City Limits
- UGA Boundaries

N

0 4,600

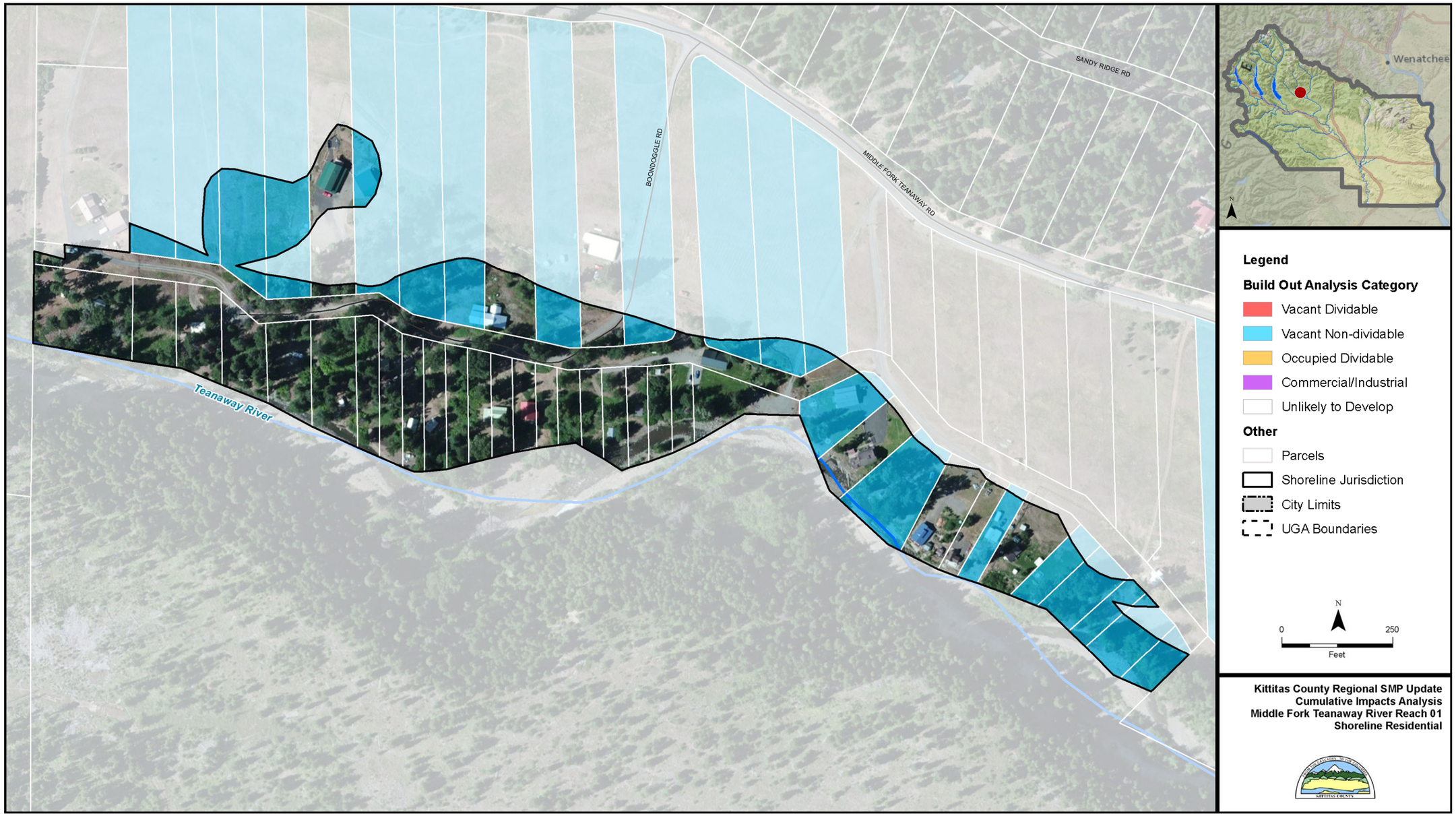
Feet

Kittitas County Regional SMP Update
Cumulative Impacts Analysis
Teanaway River Reach 01
Rural Conservancy

Teanaway River – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality TMDLs have been implemented for elevated water temperatures and suspended sediment. Sediment sources include landslides, roads, agriculture, and recreational uses. Within the Rural Conservancy SED, the large portions of the riparian buffer has been modified by agricultural and rural development.	According to the build-out analysis, there is potential for approximately 38 new single family residences on existing lots (each between approximately 2.5 and 10 acres in area) within the Rural Conservancy SED. Additionally, property owners may wish to construct hard armoring in the future to protect structures built within channel migration-prone areas.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality. Altering or filling wetlands would reduce their ability to improve water quality.	Residential development is a permitted use in Rural Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21). Alterations to wetlands or their buffers require compensatory mitigation (Section 4.2.I).	• Investigate securing water rights to improve instream flows (Sponsor: Washington Water Trust) • Teanaway Forks Large Wood Trapping (sponsor: Mid-Columbia Regional Fisheries Enhancement Group) • Remove or setback linear hydromodification to improve floodplain functioning, where possible (*no identified sponsor)* • Teanaway Community Forest project (sponsors: DNR and WDFW)	New rural-density residential development, with modern septic systems, would be unlikely to significantly degrade the water quality of the river. In addition, the presence of a wide CMZ along the creek will likely result in large setbacks from the river. No anticipated cumulative impacts to water quality are anticipated.
Habitat The river provides habitat for a variety of salmonids, including spawning and rearing habitat for spring Chinook. Within the Rural Conservancy SED, some habitat areas have been altered by agriculture and rural development, but significant natural forest cover remains. Priority wood duck nesting habitat, elk calving habitat, and mule deer winter range is identified along the river, and a large wetland complex is present at the downstream end.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. Constructing new shoreline armoring may impact habitat-forming processes within the creek and degrade fish habitat. Altering or filling wetland habitat would reduce habitat for wetland-dependent species.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B). Development and uses within the Rural Conservancy SED should be situated to avoid or minimize impacts to native vegetation communities (Section 4.5.C).Compensatory mitigation actions for wetland impacts must replace functions affected by the alteration and must provide equal or greater functions compared to the impacted wetland (Section 4.2.I).	*See above*	The presence of a wide CMZ along the river will likely result in large building setbacks, which would minimize the amount of potential forest cover loss within shoreline jurisdiction. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no anticipated cumulative impacts to habitat are anticipated.

Teanaway River – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology Almost the entire reach is located within the FEMA 100-year floodplain and has potential for channel migration. The river experiences periodic low flows in the summer and fall, partially the result of multiple stream diversions.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems. Altering or filling wetlands would reduce their ability store surface waters.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	The presence of a wide CMZ along the river will likely result in large building setbacks. New structures may be constructed in the floodplain, but compensatory floodplain storage would be required. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no cumulative impacts to hydrology are anticipated.

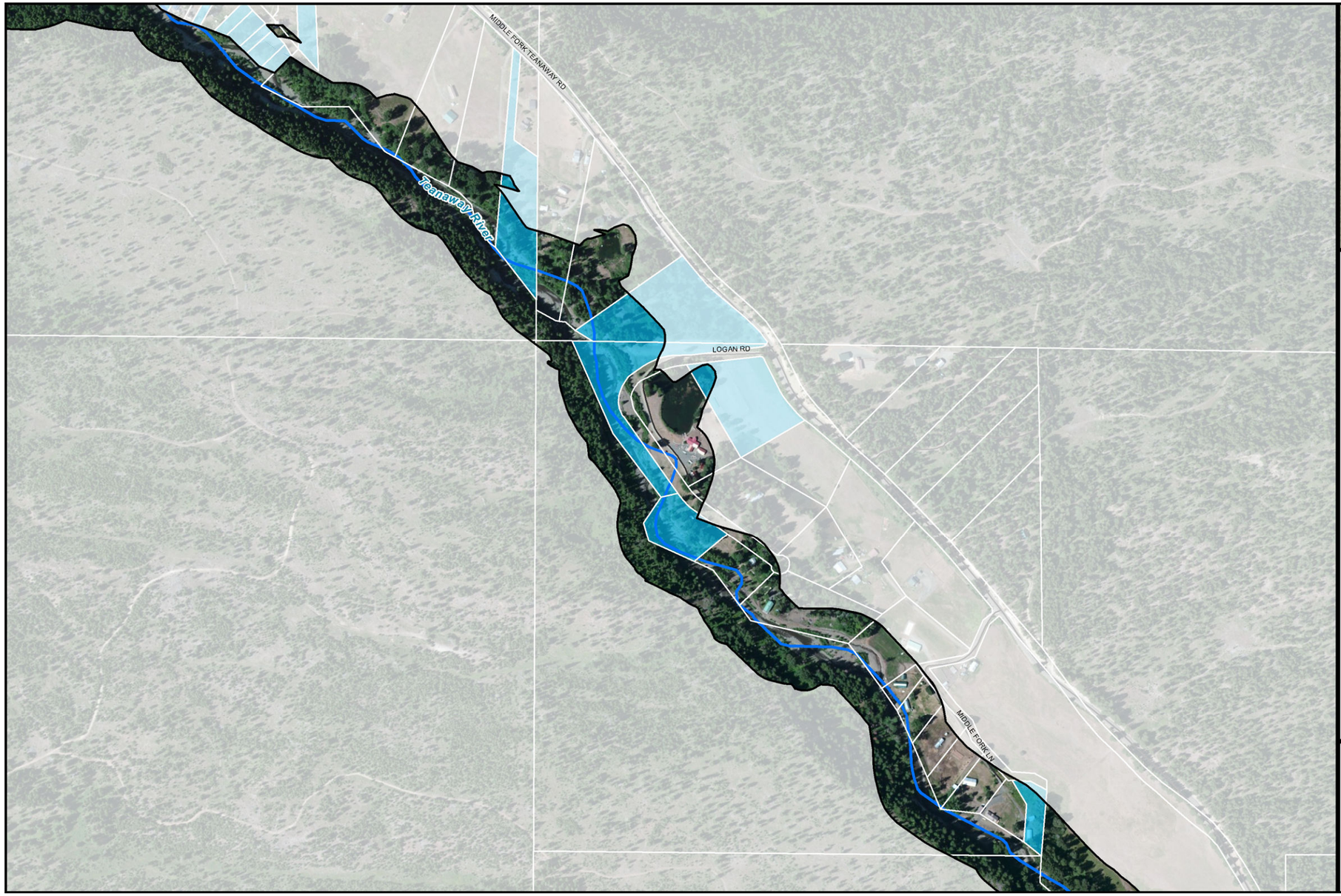
Teanaway River, Middle Fork – Shoreline Residential SED

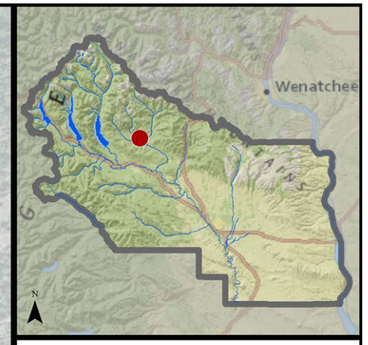


Teanaway River, Middle Fork – Shoreline Residential SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality A TMDL has been implemented for elevated water temperatures. Within the Shoreline Residential SED, the riparian buffer has been modified by residential development, but some natural buffer vegetation remains.	According to the build-out analysis, there is potential for approximately 17 new single family residences on existing lots (ranging from approximately 0.25 to 2.5 acres in area) within the Shoreline Residential SED. Additionally, property owners may wish to construct hard armoring in the future to protect structures built within channel migration-prone areas.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Shoreline Residential SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Investigate securing water rights to improve instream flows (Sponsor: Washington Water Trust)	New rural-density residential development, with modern septic systems, would be unlikely to significantly degrade the water quality of the river. In addition, the presence of a wide CMZ along the creek will likely result in large setbacks from the river. No anticipated cumulative impacts to water quality are anticipated.
Habitat The river provides habitat for a variety of salmonids, including spawning habitat for summer steelhead. Within the Shoreline Residential SED, habitat has been altered by residential development, but some natural forest cover remains. A priority elk calving area is identified along the river.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. Constructing new shoreline armoring may impact habitat-forming processes within the creek and degrade fish habitat.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B).	*See above*	The presence of a wide CMZ along the river will likely result in large building setbacks, which would minimize the amount of potential forest cover loss within shoreline jurisdiction. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no anticipated cumulative impacts to habitat are anticipated.

Teanaway River, Middle Fork – Shoreline Residential SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology Almost the entire reach has potential for channel migration, and the FEMA 100-year floodplain is identified throughout the downstream portion. The river experiences periodic low flows in the summer and fall, partially the result of multiple stream diversions.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	The presence of a wide CMZ along the river will likely result in large building setbacks. New structures may be constructed in the floodplain, but compensatory floodplain storage would be required. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no cumulative impacts to hydrology are anticipated.

Teanaway River, Middle Fork – Rural Conservancy SED





Legend

Build Out Analysis Category

- Vacant Dividable
- Vacant Non-dividable
- Occupied Dividable
- Commercial/Industrial
- Unlikely to Develop

Other

- Parcels
- Shoreline Jurisdiction
- City Limits
- UGA Boundaries

N

0 660

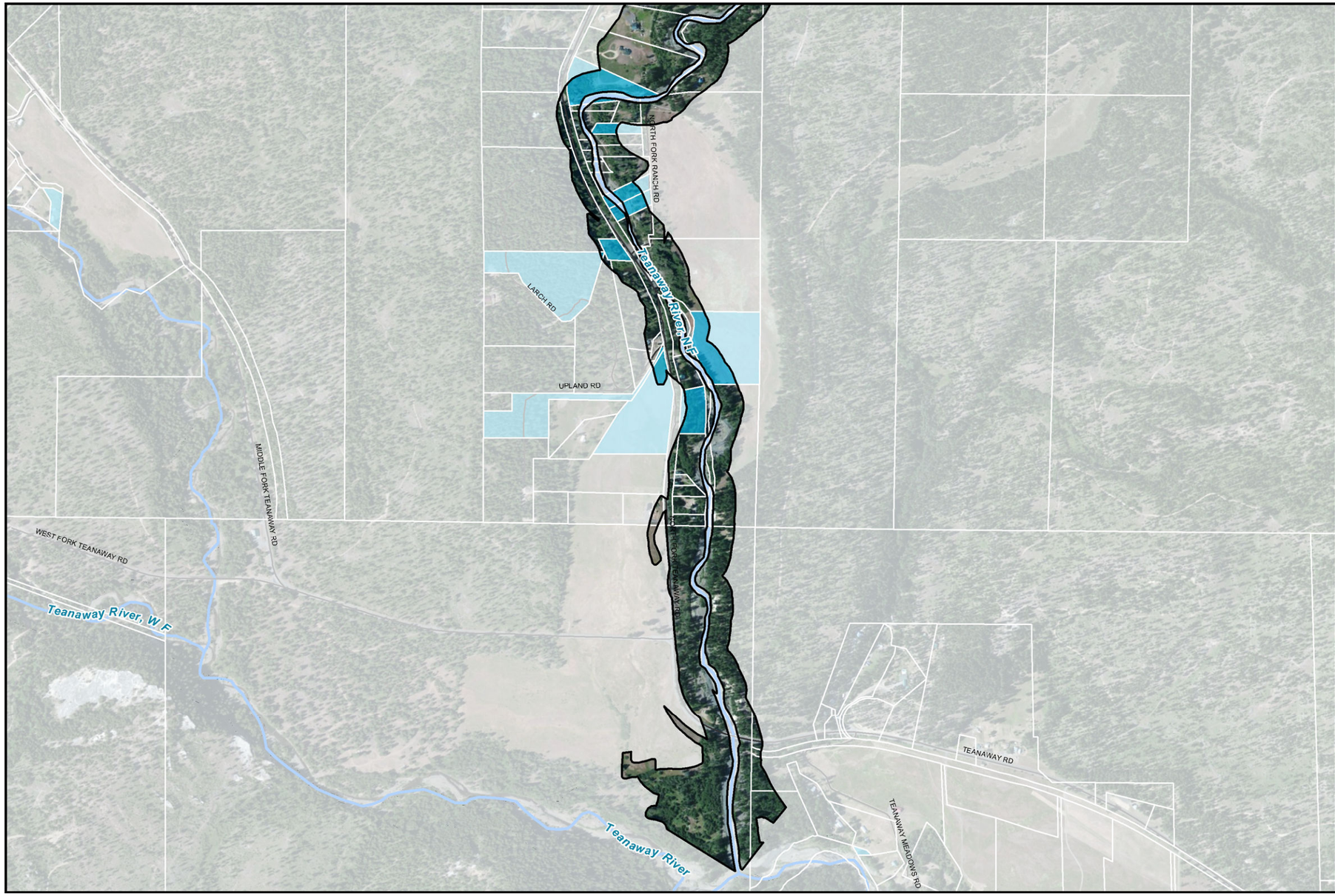
Feet

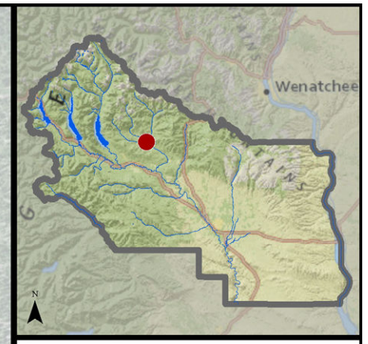
Kittitas County Regional SMP Update
Cumulative Impacts Analysis
Middle Fork Teanaway River Reach 01
Rural Conservancy

Teanaway River, Middle Fork – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality A TMDL has been implemented for elevated water temperatures. Within the Rural Conservancy SED, the riparian buffer has been modified by rural residential development in some areas, but the buffer is intact throughout a majority of the reach.	According to the build-out analysis, there is potential for approximately 7 new single family residences on existing lots (each between approximately 1 and 5 acres in area) within the Rural Conservancy SED. Additionally, property owners may wish to construct hard armoring in the future to protect structures built within channel migration-prone areas.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Rural Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Investigate securing water rights to improve instream flows (Sponsor: Washington Water Trust) • Teanaway Community Forest project (sponsors: DNR and WDFW)	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat The river provides habitat for a variety of salmonids, including spawning habitat for summer steelhead. Within the Rural Conservancy SED, habitat has been altered by rural residential development in some areas, but most of the stream is bordered by dense forest habitat. Priority elk winter range and an elk calving area is identified along the river.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. Constructing new shoreline armoring may impact habitat-forming processes within the creek and degrade fish habitat.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B.).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Teanaway River, Middle Fork – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology Almost the entire reach has potential for channel migration, and the FEMA 100-year floodplain is identified throughout the downstream portion. The river experiences periodic low flows in the summer and fall, partially the result of multiple stream diversions.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Teanaway River, North Fork – Rural Conservancy SED





Legend

Build Out Analysis Category

- Vacant Dividable
- Vacant Non-dividable
- Occupied Dividable
- Commercial/Industrial
- Unlikely to Develop

Other

- Parcels
- Shoreline Jurisdiction
- City Limits
- UGA Boundaries

N

0 1,100

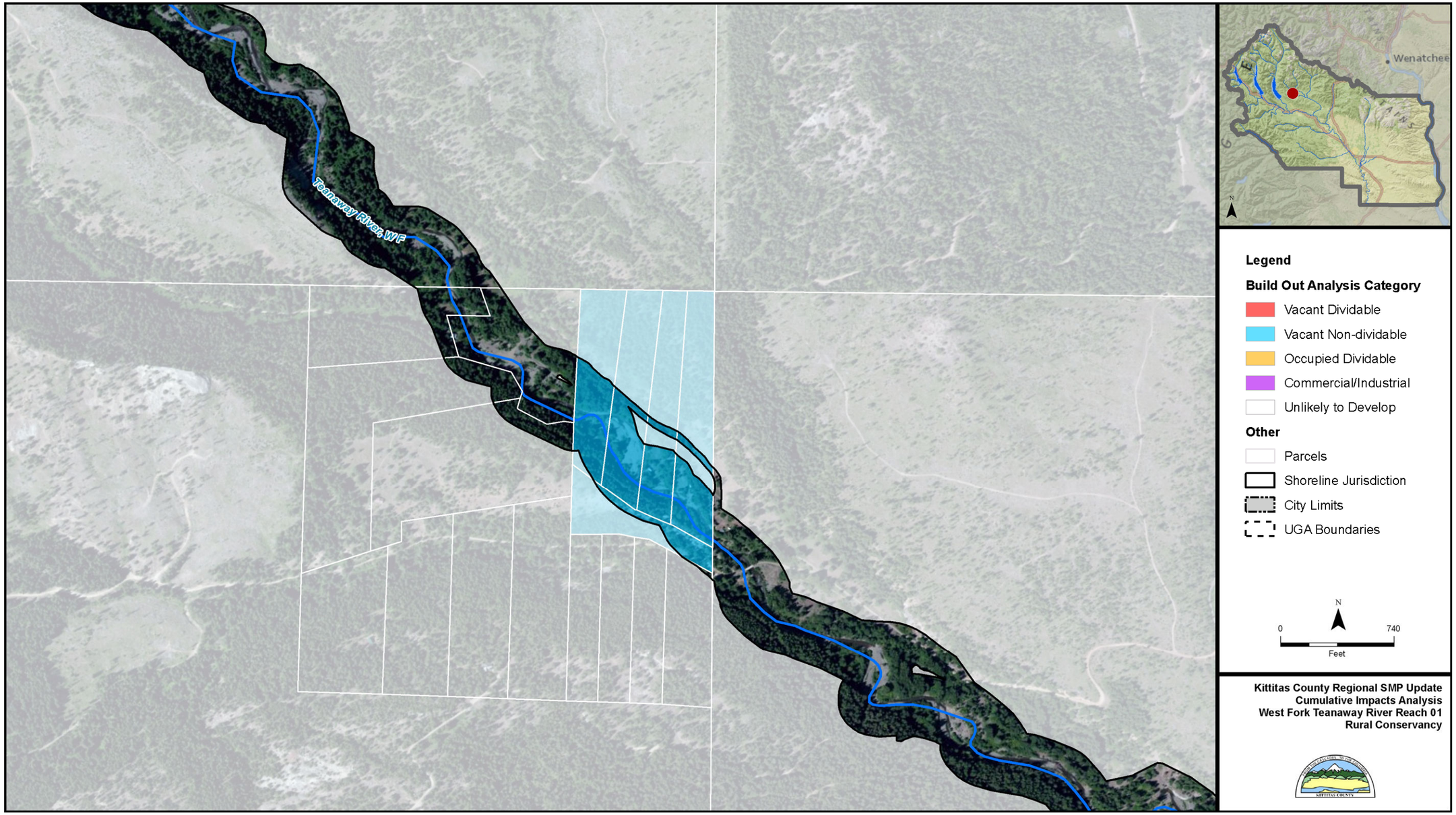
Feet

Kittitas County Regional SMP Update
Cumulative Impacts Analysis
North Fork Teanaway River Reach 01
Rural Conservancy

Teanaway River, North Fork – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality A TMDL has been implemented for elevated water temperatures. The riparian buffer has been modified by rural residential development and agriculture in some areas, but the buffer is intact throughout a majority of the reach.	According to the build-out analysis, there is potential for approximately 9 new single family residences on existing lots (each between approximately 1 and 9 acres in area). Additionally, property owners may wish to construct hard armoring in the future to protect structures built within channel migration-prone areas.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Rural Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Teanaway Community Forest project (sponsors: DNR and WDFW) • North Fork Teanaway River Floodplain projects (sponsor: Kittitas Conservation Trust)	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat The river provides habitat for a variety of salmonids, including spawning and rearing habitat for summer steelhead and bull trout. Habitat has been altered by rural residential development and agriculture in some areas, but most of the stream is bordered by dense forest habitat. A priority elk calving area is identified along the downstream portion of the river.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. Constructing new shoreline armoring may impact habitat-forming processes within the creek and degrade fish habitat.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Teanaway River, North Fork – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology Almost the entire reach has potential for channel migration, and the FEMA 100-year floodplain is identified throughout the downstream portion.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

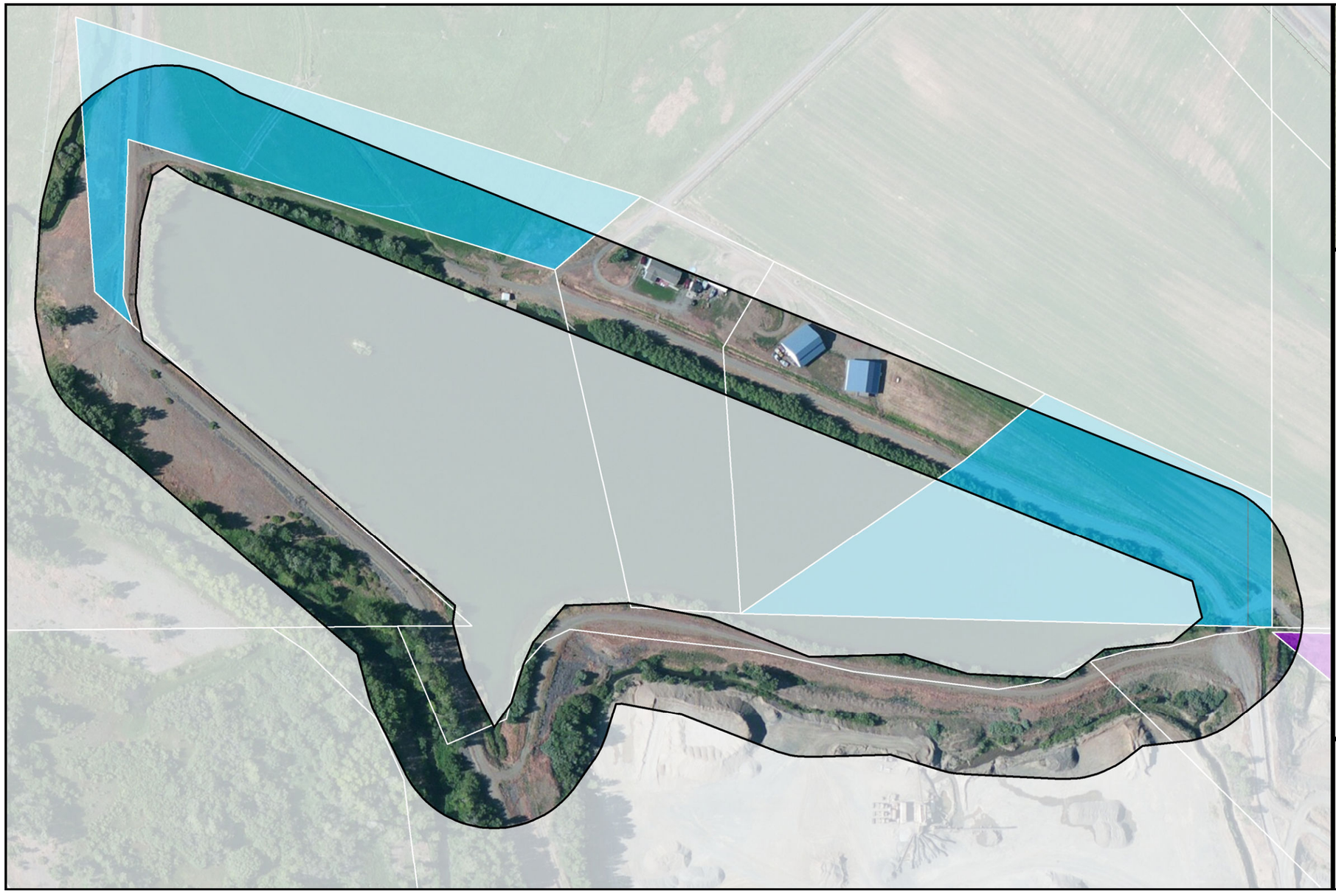
Teanaway River, West Fork – Rural Conservancy SED

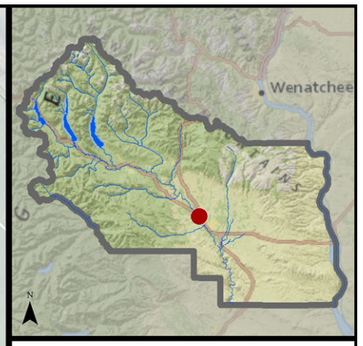


Teanaway River, West Fork – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality A TMDL has been implemented for elevated water temperatures. The riparian buffer has been modified by rural residential development and agriculture in some areas, but the buffer is intact throughout a majority of the reach.	According to the build-out analysis, there is potential for approximately 5 new single family residences on existing lots (each between approximately 5 and 8 acres in area). Additionally, property owners may wish to construct hard armoring in the future to protect structures built within channel migration-prone areas.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Rural Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Teanaway Community Forest project (sponsors: DNR and WDFW) • Investigate strategies for increasing summer stream flows. (Sponsor: Washington Water Trust)	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat The river provides habitat for a variety of salmonids, including rearing habitat for spring Chinook. Habitat has been altered by rural residential development and agriculture in some areas, but most of the stream is bordered by dense forest habitat. Priority elk winter range and calving habitat is identified along the downstream portion of the river.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. Constructing new shoreline armoring may impact habitat-forming processes within the creek and degrade fish habitat.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Teanaway River, West Fork – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology Almost the entire reach has potential for channel migration, and the FEMA 100-year floodplain is identified throughout the downstream portion. The river experiences periodic low flows in the summer and fall, partially the result of multiple stream diversions.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Unnamed Pond 04 – Rural Conservancy SED





Legend

Build Out Analysis Category

- Vacant Dividable
- Vacant Non-dividable
- Occupied Dividable
- Commercial/Industrial
- Unlikely to Develop

Other

- Parcels
- Shoreline Jurisdiction
- City Limits
- UGA Boundaries

N

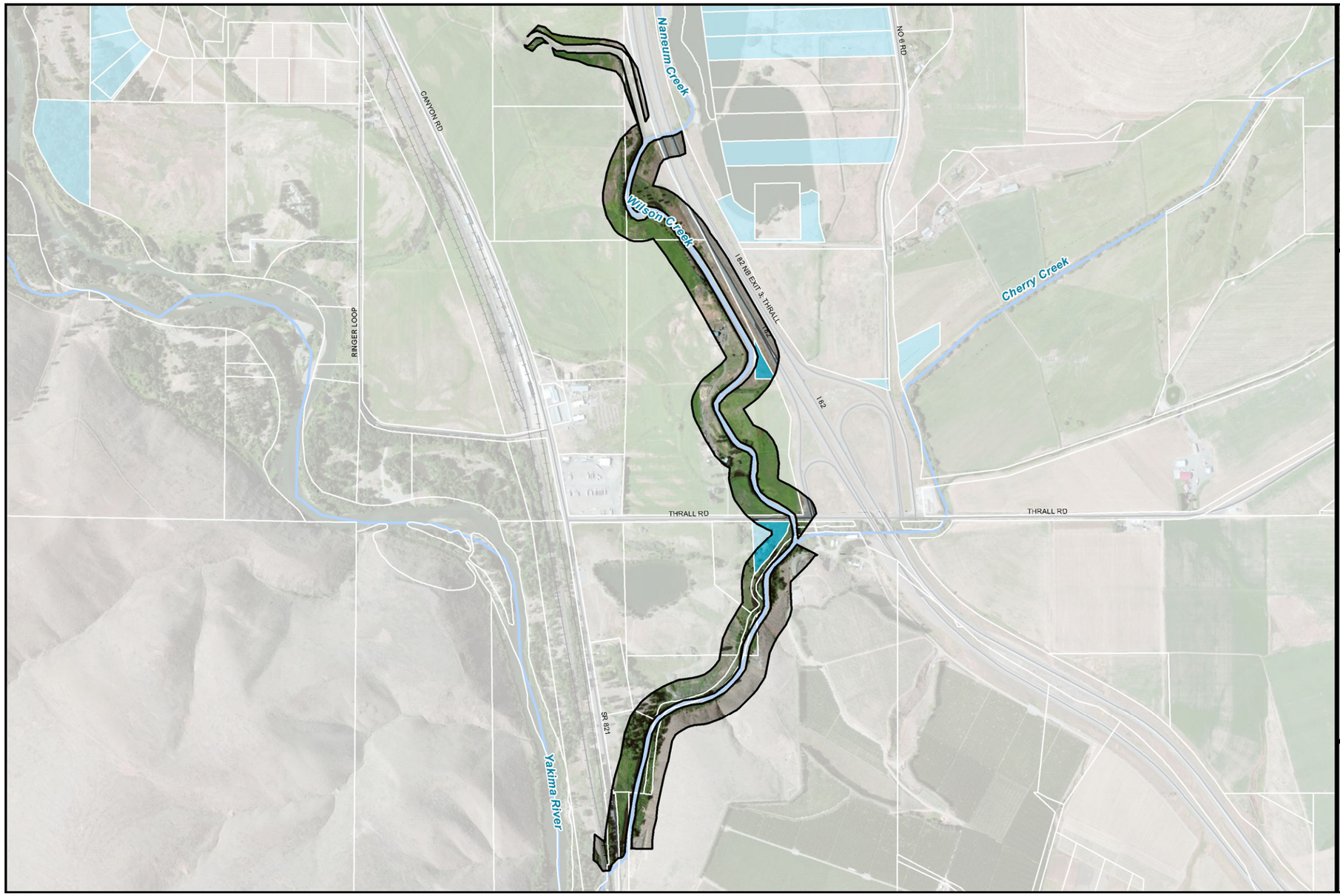
0 250

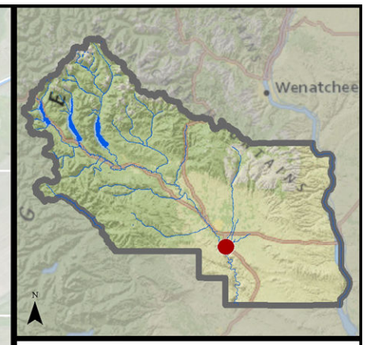
Feet

Kittitas County Regional SMP Update
Cumulative Impacts Analysis
Unnamed Pond 04 - Yakima River Reach 04
Rural Conservancy

Unnamed Pond 04 – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality There are no listed water quality impairments for the pond (Ecology, 2008). However, there is minimal functional buffer along the shoreline.	According to the build-out analysis, there is potential for 2 new single family residences on existing lots (each approximately 6 acres in area).	An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the lake. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Rural Conservancy SED (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	*No restoration projects have been identified.*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat There are no priority fish or wildlife species or habitat identified in the pond vicinity. The pond is surrounded primarily by a road and borders agricultural fields.	*See above*	The areas where foreseeable future development would occur are currently in intensive agriculture production. Therefore, risks to habitat functions are limited.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Hydrology The pond is a former gravel pit with no permanent surface water outlet.	*See above*	Risks to hydrologic functions are low due to the status of the lake as a former gravel pit and the lack of a surface water outlet.	Not applicable.	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Wilson Creek – Rural Conservancy SED





Legend

Build Out Analysis Category

- Vacant Dividable
- Vacant Non-dividable
- Occupied Dividable
- Commercial/Industrial
- Unlikely to Develop

Other

- Parcels
- Shoreline Jurisdiction
- City Limits
- UGA Boundaries

N

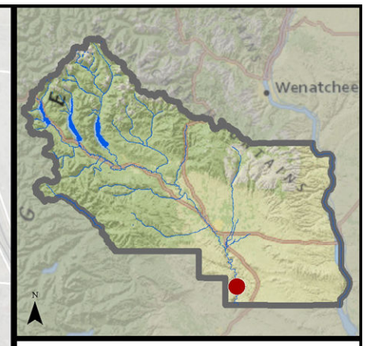
0 1,150

Feet

Kittitas County Regional SMP Update
Cumulative Impacts Analysis
Wilson Creek Reach 01
Rural Conservancy

Wilson Creek – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality Wilson Creek is listed by Ecology (2008) for pH and elevated water temperatures. TMDLs have been implemented for fecal coliform, suspended sediment, turbidity, and temperature. The creek has a minimal functional buffer and flows through lands in intensive agricultural production.	According to the build-out analysis, there is potential for 2 new single family residences on existing lots (ranging from approximately 1 to 2.5 acres in area).	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. However, risks to water quality resulting from new development are relatively low due to the limited development potential within the reach.	Residential development is a permitted use in Rural Conservancy SED (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Investigate re-establishing a natural stream channel (the creek was historically channelized) and revegetating the riparian corridor (*no identified sponsor*). • Investigate the feasibility of stormwater treatment retrofits to improve runoff water quality from urban areas (*no identified sponsor*).	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat The creek provides habitat for a variety of salmonid species, including spawning and rearing habitat for spring Chinook. However, fish habitat within the lower creek has been extensively altered by stream channelization, and riparian areas have been largely converted to agricultural uses. A priority biodiversity area is identified at the downstream end of the reach, near the Yakima River.	*See above*	The area of potential new development is currently within intensive agricultural production; therefore, risks to habitat are relatively low.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Hydrology Streamflows within the lower creek are highly altered by irrigation activities, and the creek has been historically channelized. Much of the reach area is located within the FEMA 100-year floodplain, and the downstream end of the creek is within the channel migration zone of the Yakima River.	*See above*	The creek hydrology is already significantly altered and potential for new development is relatively low. Therefore, risks to hydrology are minimal.	Not applicable.	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Yakima River, Reach 2 – Natural SED



Legend

Build Out Analysis Category

- Vacant Dividable
- Vacant Non-dividable
- Occupied Dividable
- Commercial/Industrial
- Unlikely to Develop

Other

- Parcels
- Shoreline Jurisdiction
- City Limits
- UGA Boundaries

N

0 4,000

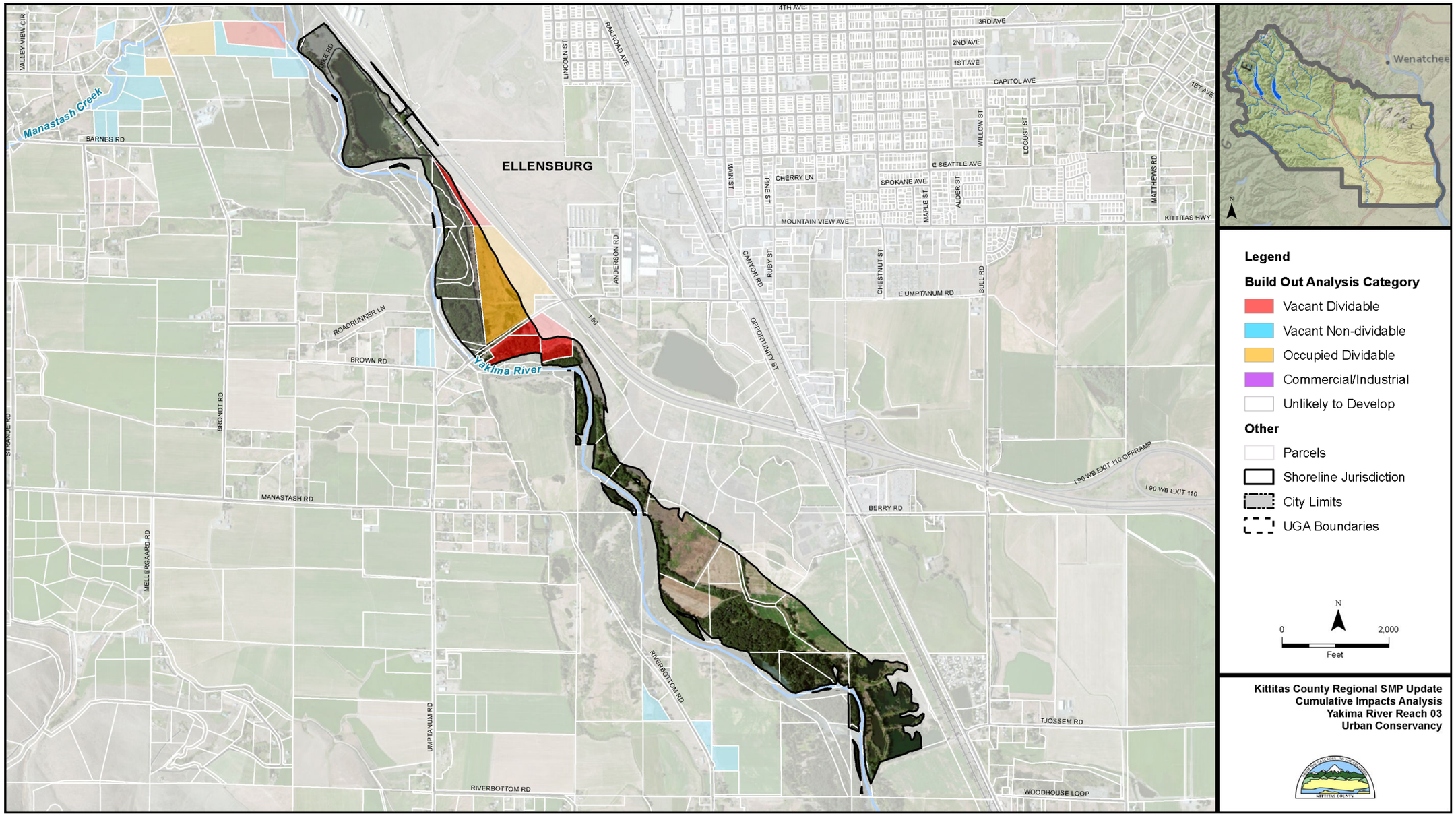
Feet

Kittitas County Regional SMP Update
Cumulative Impacts Analysis
Yakima River Reach 02
Natural

Yakima River, Reach 2 – Natural SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The reach is listed by Ecology (2008) for chlordane, bioxin, PCB, and elevated water temperatures. TMDLs have been implemented for 4,4'-DDE, DDT, dieldrin, and temperature. Despite these listings, the water quality within the reach is adequate to support a large wild trout fishery. Within the reach, riparian buffer vegetation primarily consists of relatively undisturbed shrub habitat.	According to the built-out analysis, there is potential for 13 new single family residences within the Natural SED, creating by subdividing an existing parcel (into 5-acre lots, per current County zoning regulations).	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development requires a conditional use permit in Natural SED. (Section 3.10). A 150 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Roza Dam removal (*no identified sponsor*) • Yakima River Canyon Land Acquisition (sponsor: WA Wildlife and Recreation Coalition)	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat The reach provides habitat for a variety of salmonid species, including spawning habitat for spring Chinook. Within the reach, the river is bordered by riparian forest and shrub vegetation, although Canyon Road and BNSF rail lines separate the riparian corridor from adjacent habitats. Priority habitats and species identified along the river include golden eagle, priority mule deer winter range, bighorn sheep winter range, elk winter range, cliffs/bluffs, and a biodiversity corridor.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New lots must adhere to the standard shoreline buffer without buffer averaging or reduction (Section 4.2.C). Development and uses within the Natural SED should be situated to avoid or minimize impacts to native vegetation communities (Section 4.5.C)	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Yakima River, Reach 2 – Natural SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology The hydrology of the Yakima River is highly controlled by three upstream reservoirs, operated to store and supply water for irrigation purposes. A channel migration zone and the FEMA 100-year floodplain are identified along much of the reach; however, these hazards are generally limited to the canyon bottom.	*See above*	The hydrology of the river is highly controlled by upstream dams and there is generally low development potential within the reach. Therefore, risks to hydrologic functions are minimal.	Not applicable.	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

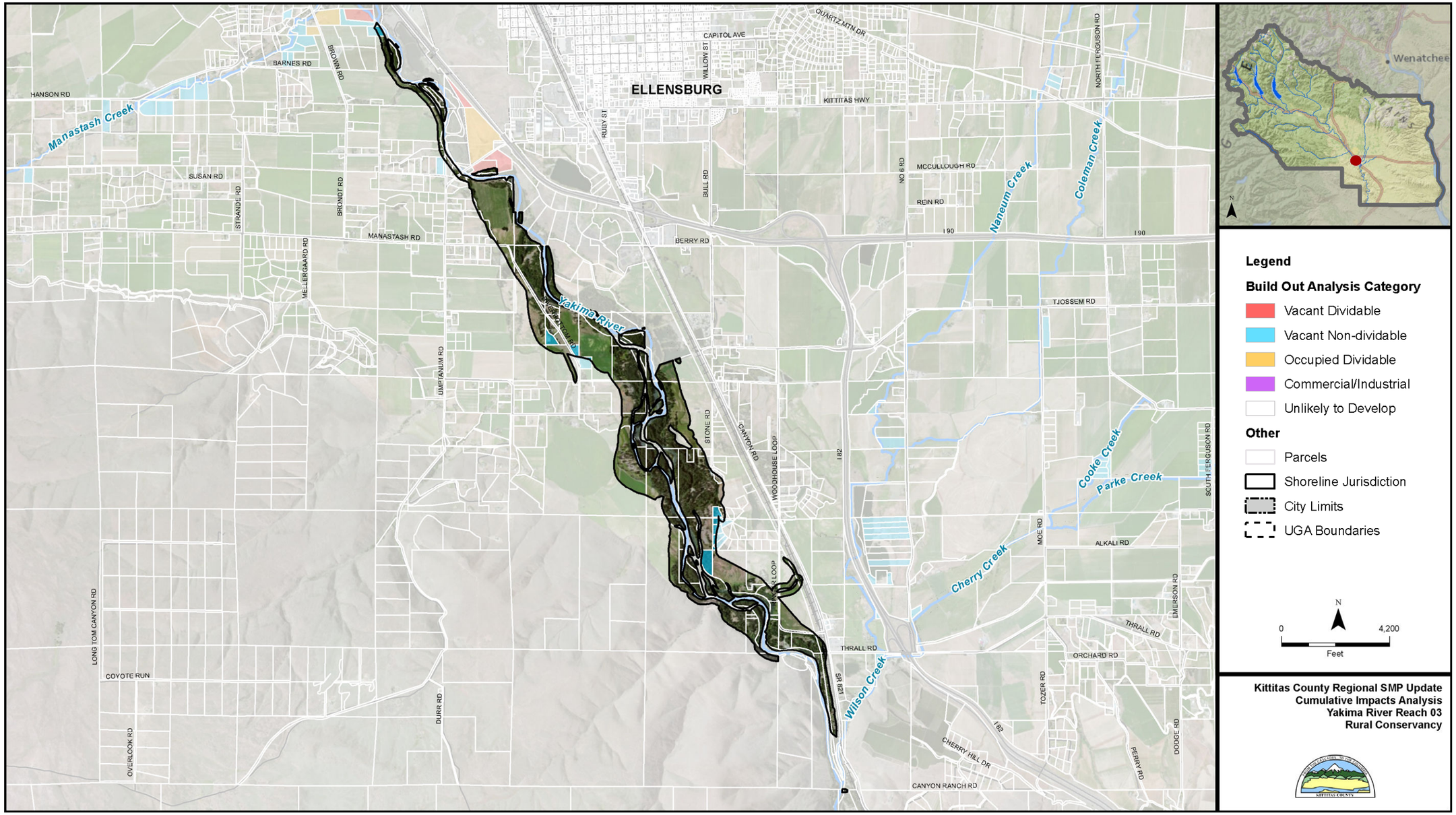
Yakima River, Reach 3 – Urban Conservancy SED



Yakima River, Reach 3 – Urban Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The reach is listed by Ecology (2008) for pH, fecal coliform, and elevated water temperatures. A TMDL has been implemented for temperature. Despite these listings, the water quality within the reach is adequate to support a large wild trout fishery. Within the reach, the riparian buffer is generally intact and consists of dense forest cover. Outside the buffer, the majority of the surrounding land is in intensive agricultural production.	Within the Urban Conservancy SED, there are 4 large parcels located east of Irene Rinehart park that could be subdivided into approximately 400 single family residences/lots (lot size of 7,200 SF, pursuant to current County zoning regulations). Additionally, property owners may wish to construct hard armoring in the future to protect structures built close to the shoreline.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Urban Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Revegetate disturbed riparian areas, where practical (*no identified sponsor*). • Investigate opportunities for floodplain reconnection and setting-back of hydromodifications (*no identified sponsor*). • Kittitas Reach Habitat Protection (Sponsors: Kittitas County, Forterra, and others)	New urban residential development would be required to utilize Ecology's stormwater treatment manual, so a significant decrease in river water quality is unlikely. In addition, the presence of a wide CMZ along the river will likely result in large setbacks from river. No anticipated cumulative impacts to water quality are anticipated.
Habitat The reach provides habitat for a variety of salmonid species, including spawning and rearing habitat for spring Chinook. The river is bordered by dense forest and shrub vegetation throughout a majority of the reach, although some areas are disturbed by agriculture and rural residential development. Priority habitats and species identified along the river include bald eagle, mule deer winter range, bighorn sheep, elk winter range, and great blue heron.	*See above*	The developable parcels are currently highly disturbed, lack vegetation cover, and are separated from the river by Irene Rinehart Park. Therefore, minimal risks to habitat functions are expected in this area.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development, including lot creation, must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B). Development and uses within the Urban Conservancy SED should be situated to avoid or minimize impacts to native vegetation communities (Section 4.5.C).	*See above*	The undeveloped lands are generally highly disturbed and lack vegetation cover. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no anticipated cumulative impacts to habitat are anticipated.

Yakima River, Reach 3 – Urban Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology The hydrology of the Yakima River is highly controlled by three upstream reservoirs, operated to store and supply water for irrigation purposes. A wide floodplain and channel migration zone is present along the majority of the reach. At the upstream end of the reach, the river channel is constrained by linear hydromodifications.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). Subdivisions must have lots that contain at least one site, including access and utility locations that is suitable for use or development and is not located entirely within a floodway or channel migration zone. The new lots must adhere to the standard shoreline buffer without buffer averaging or reduction (Section 4.2.C). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	The presence of a wide CMZ along the river will likely result in large building setbacks. New structures may be constructed in the floodplain, but compensatory floodplain storage would be required. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no cumulative impacts to hydrology are anticipated.

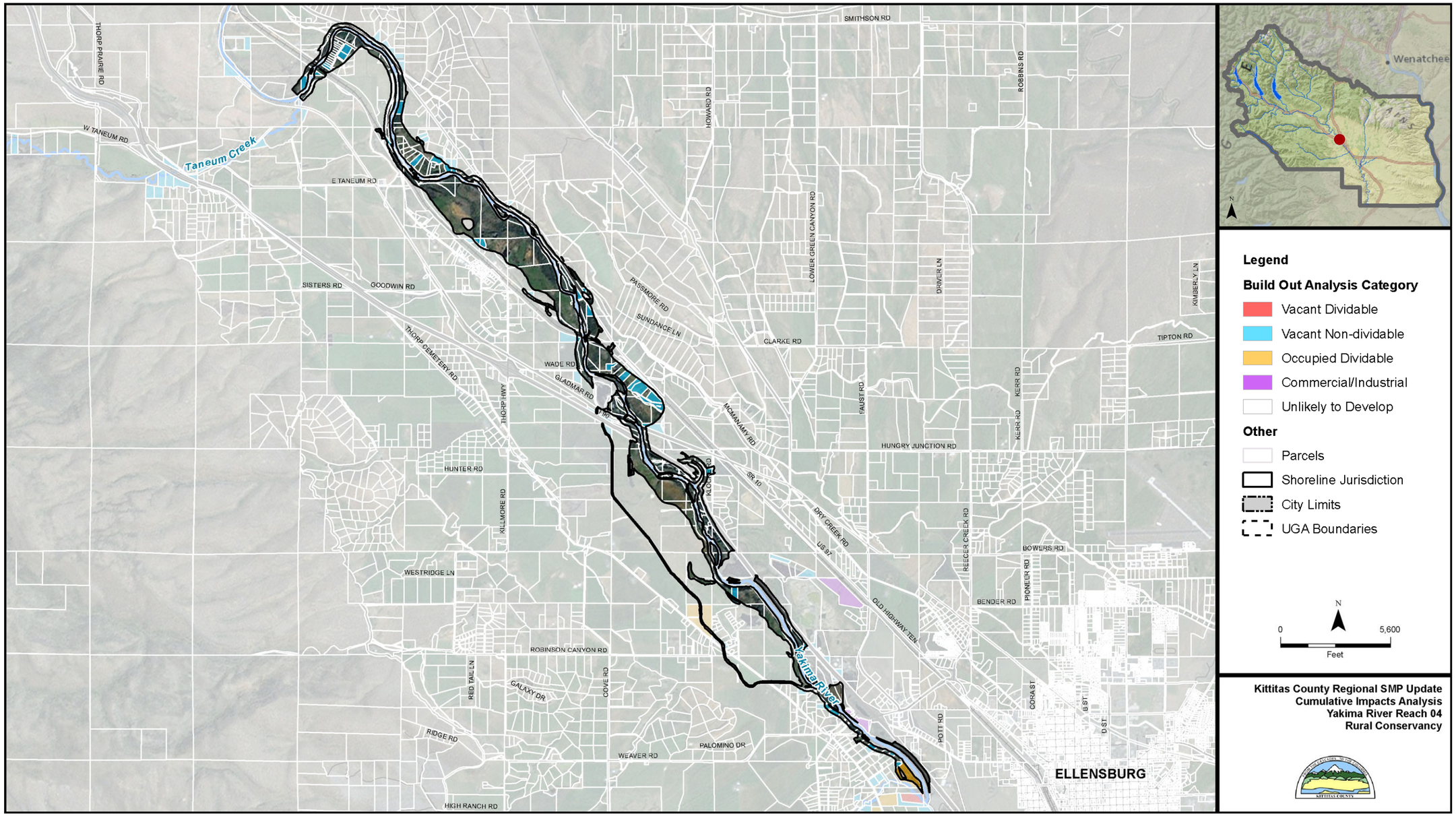
Yakima River, Reach 3 – Rural Conservancy SED



Yakima River, Reach 3 – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The reach is listed by Ecology (2008) for pH, fecal coliform, and elevated water temperatures. A TMDL has been implemented for temperature. Despite these listings, the water quality within the reach is adequate to support a large wild trout fishery. Within the reach, the riparian buffer is generally intact and consists of dense forest cover. Outside the buffer, the majority of the surrounding land is in intensive agricultural production.	According to the build-out analysis, there is potential for 15 new single family residences on existing lots (ranging from approximately 1 to 9 acres in area) located outside of the Ellensburg UGA. Additionally, property owners may wish to construct hard armoring in the future to protect structures built close to the shoreline.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Rural Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Revegetate disturbed riparian areas, where practical (*no identified sponsor*). • Investigate opportunities for floodplain reconnection and setting-back of hydromodifications (*no identified sponsor*). • Kittitas Reach Habitat Protection (Sponsors: Kittitas County, Forterra, and others)	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat The reach provides habitat for a variety of salmonid species, including spawning and rearing habitat for spring Chinook. The river is bordered by dense forest and shrub vegetation throughout a majority of the reach, although some areas are disturbed by agriculture and rural residential development. Priority habitats and species identified along the river include bald eagle, mule deer winter range, bighorn sheep, elk winter range, and great blue heron.	*See above*	Clearing vegetation within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. An increase in shoreline armoring may impact fish habitat and habitat-forming processes within the river.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development, including lot creation, must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B). Development and uses within the Rural Conservancy SED should be situated to avoid or minimize impacts to native vegetation communities (Section 4.5.C).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Yakima River, Reach 3 – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology The hydrology of the Yakima River is highly controlled by three upstream reservoirs, operated to store and supply water for irrigation purposes. A wide floodplain and channel migration zone is present along the majority of the reach. At the upstream end of the reach, the river channel is constrained by linear hydromodifications.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

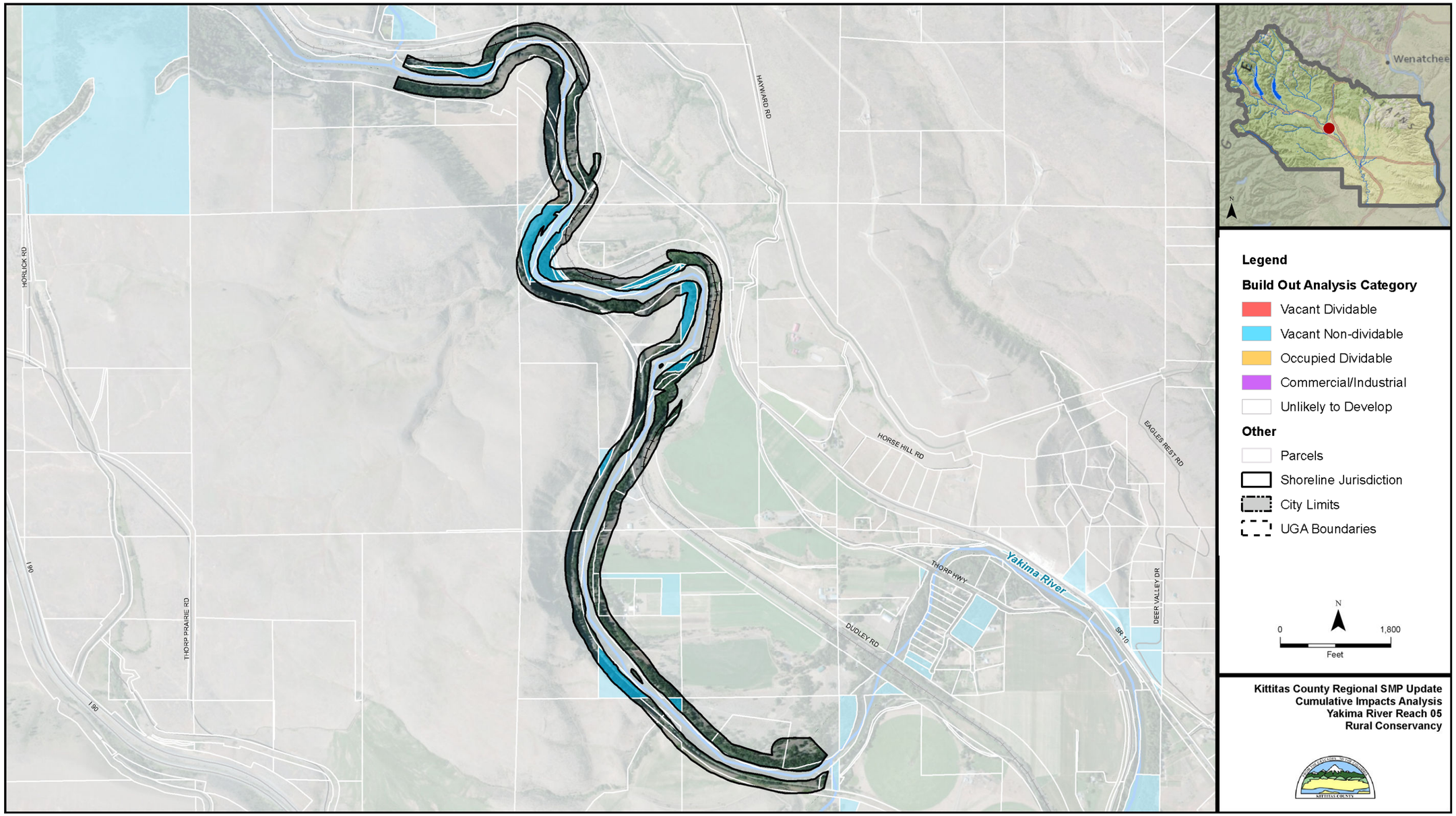
Yakima River, Reach 4– Rural Conservancy SED



Yakima River, Reach 4– Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The reach is listed by Ecology (2008) for low dissolved oxygen levels, fecal coliform, pH, and elevated water temperatures. A TMDL has been implemented for temperature. Despite these listings, the water quality within the reach is adequate to support a large wild trout fishery. There is minimal functional buffer located within the reach; the river is bordered by agricultural fields, rural residential development, and roads (including I-90).	According to the build-out analysis, there is potential for approximately 42 new single family residences on existing lots (ranging in area from approximately 2 to 8 acres), with another 3 residences/lots created by subdividing existing parcels into 5-acre lots, per current zoning regulations. Additionally, property owners may wish to construct hard armoring in the future to protect structures built close to the shoreline.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Rural Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Revegetate disturbed riparian areas, where practical (*no identified sponsor*). • Investigate opportunities for floodplain reconnection and setting-back of hydromodifications (*no identified sponsor*). • Explore restoration of former gravel pits to create more natural floodplain and riverine habitat (*no identified sponsor*). • Kittitas Reach Habitat Protection (Sponsors: Kittitas County, Forterra, and others)	New residential development, with modern septic systems, would be unlikely to significantly degrade the water quality of the river. In addition, the presence of a wide CMZ along the creek will likely result in large setbacks from the river. No anticipated cumulative impacts to water quality are anticipated.
Habitat The reach provides habitat for a variety of salmonid species, including spawning and rearing habitat for spring Chinook and summer steelhead. Patches of riparian shrub and forest cover remain in the reach, but much of the riparian area has been disturbed by agriculture, rural residential development, and roads (including I-90). Priority mule deer winter range habitat is mapped at the upstream end of the reach.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. An increase in shoreline armoring may impact fish habitat and habitat-forming processes within the river.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B Regulation #4). New residential development, including lot creation, must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B. Regulations #1 and 2).	*See above*	The presence of a wide CMZ along the river will likely result in large building setbacks, which would minimize the amount of potential forest cover loss within shoreline jurisdiction. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no anticipated cumulative impacts to habitat are anticipated.

Yakima River, Reach 4– Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology The hydrology of the Yakima River is highly controlled by three upstream reservoirs, operated to store and supply water for irrigation purposes. A wide floodplain and channel migration zone is present along the majority of the reach. The channel is constrained along most of its length by roads, the John Wayne trail, and other linear hydromodifications.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P, Regulation #7). Subdivisions must have lots that contain at least one site, including access and utility locations that is suitable for use or development and is not located entirely within a floodway or channel migration zone,. The new lots must adhere to the standard shoreline buffer without buffer averaging or reduction (Section 4.2.C, Regulation #7). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R, Regulation #2, 4.2.T, Regulation #1).	*See above*	The presence of a wide CMZ along the creek will likely result in large building setbacks. New structures may be constructed in the floodplain, but compensatory floodplain storage would be required. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no cumulative impacts to hydrology are anticipated.

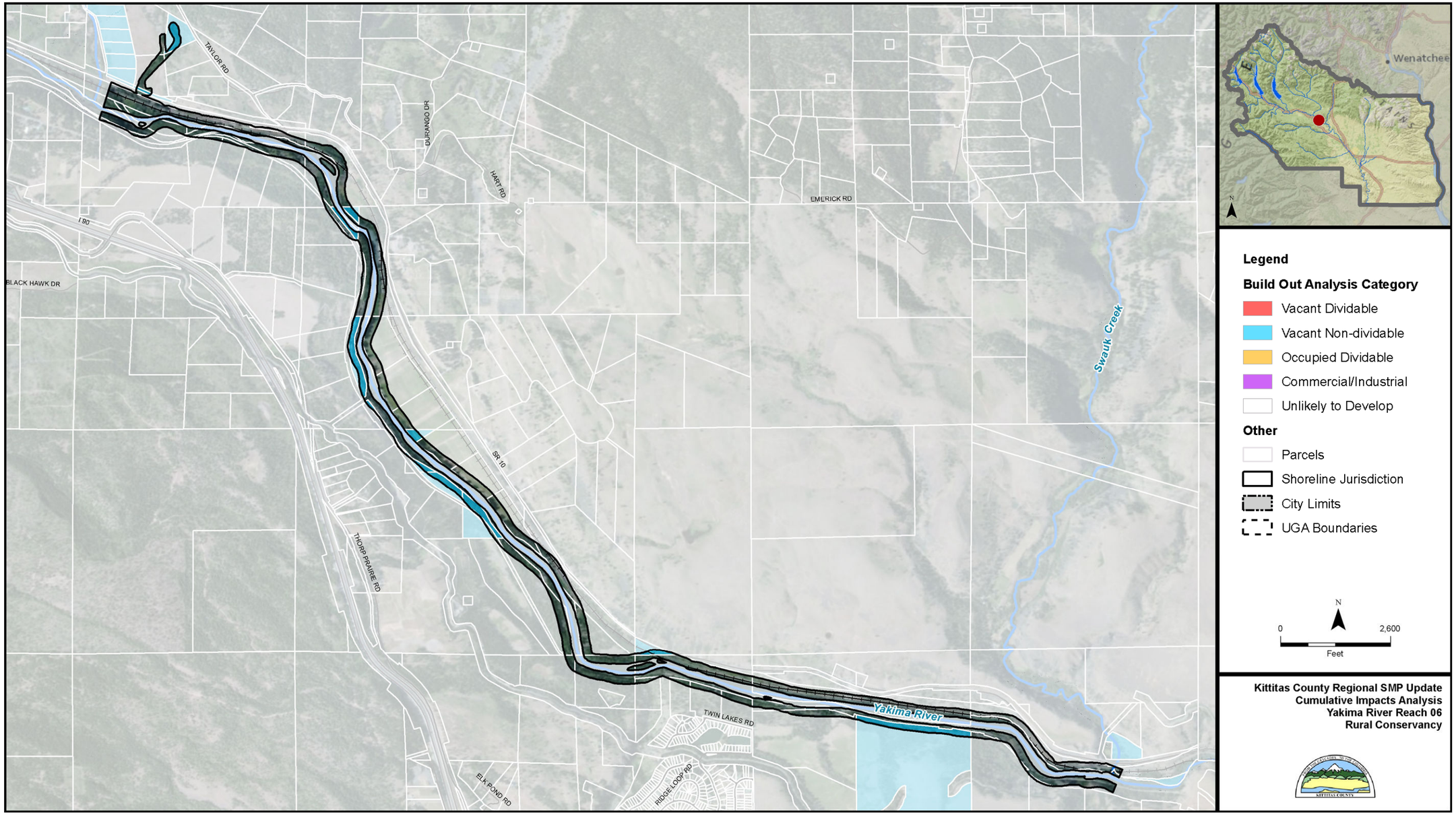
Yakima River, Reach 5– Rural Conservancy SED



Yakima River, Reach 5– Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The reach is listed by Ecology (2008) for low dissolved oxygen levels, fecal coliform, and pH. Despite these listings, the water quality within the reach is adequate to support a large wild trout fishery. Much of the riparian buffer area consists of shrub and forest habitat, but portions have been disturbed by agriculture, roads, and rural residential development.	According to the build-out analysis, there is potential for approximately 5 new single family residences on existing lots (ranging in area from approximately 1 to 8 acres). Additionally, property owners may wish to construct hard armoring in the future to protect structures built close to the shoreline.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Shoreline Residential SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Revegetate disturbed riparian areas, where practical (*no identified sponsor*). • Investigate opportunities for floodplain reconnection and setting-back of hydromodifications (*no identified sponsor*).	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat The reach provides habitat for a variety of salmonid species, including spawning habitat for spring Chinook and summer steelhead. The west bank of the reach is relatively undeveloped, while the east bank is altered in some areas by roads and rural development. Priority mule deer winter range is mapped within the reach.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. An increase in shoreline armoring may impact fish habitat and habitat-forming processes within the river.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). Development and uses within the Rural Conservancy SED should be situated to avoid or minimize impacts to native vegetation communities (Section 4.5.C)New residential development must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Yakima River, Reach 5– Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology The hydrology of the Yakima River is highly controlled by three upstream reservoirs, operated to store and supply water for irrigation purposes. A channel migration zone and the FEMA 100-year floodplain are identified along much of the reach; however, these hazards are generally limited to the canyon bottom.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

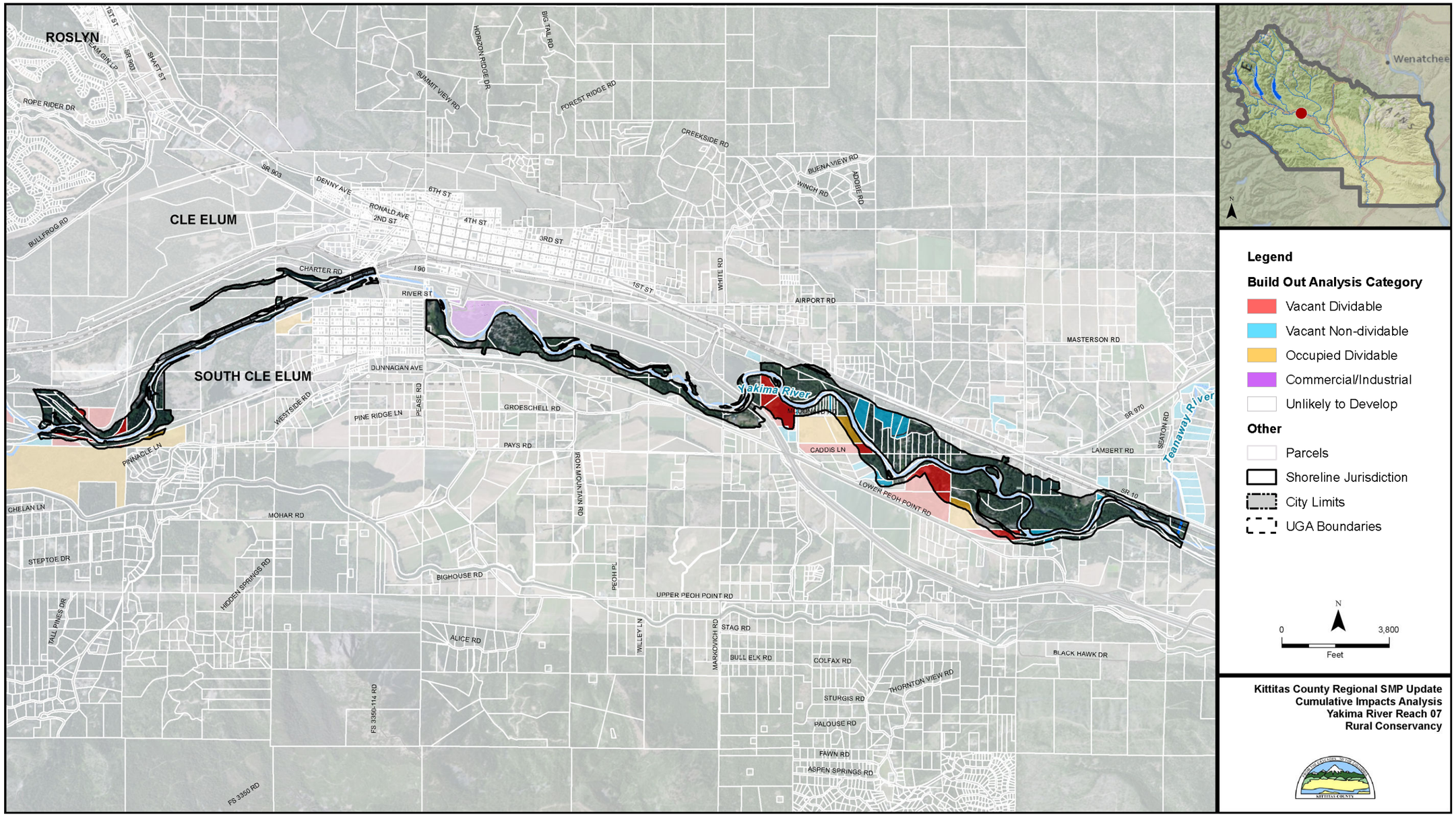
Yakima River, Reach 6 – Rural Conservancy SED



Yakima River, Reach 6 – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The reach is listed by Ecology (2008) for elevated water temperatures, and a TMDL has been implemented. Despite this listing, the water quality within the reach is adequate to support a large wild trout fishery. The reach has a relatively narrow riparian buffer of shrub and forest habitat in most areas; outside this area, the buffer is disturbed by the John Wayne trail, BNSF railroad, and agricultural activities.	According to the build-out analysis, there is potential for approximately 8 new single family residences on existing lots (ranging in area from approximately 1 to 8 acres). Additionally, property owners may wish to construct hard armoring in the future to protect structures built close to the shoreline.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Rural Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Revegetate disturbed riparian areas, where practical (*no identified sponsor*). • Investigate opportunities for floodplain reconnection and setting-back of hydromodifications (*no identified sponsor*). • Upper Yakima Instream Habitat project (Sponsor: Kittitas Conservation Trust and Yakama Nation) • Upper Yakima Habitat Protection project (Sponsor: Kittitas Conservation Trust and others)	No cumulative impacts anticipated due to low potential for development and protective SMP standards.
Habitat The reach provides habitat for a variety of salmonid species, including spawning and rearing habitat for spring Chinook and summer steelhead. Patches of shrub and forest habitat remain within the reach, but many areas are disturbed by the John Wayne trail, BNSF railroad, agriculture, and roads. Priority mule deer winter range and wood duck nesting habitat are identified within the reach.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. An increase in shoreline armoring may impact fish habitat and habitat-forming processes within the river.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). Development and uses within the Rural Conservancy SED should be situated to avoid or minimize impacts to native vegetation communities (Section 4.5.C)New residential development must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

Yakima River, Reach 6 – Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology The hydrology of the Yakima River is highly controlled by three upstream reservoirs, operated to store and supply water for irrigation purposes. A channel migration zone and the FEMA 100-year floodplain are identified along the majority of the reach.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	No cumulative impacts anticipated due to low potential for development and protective SMP standards.

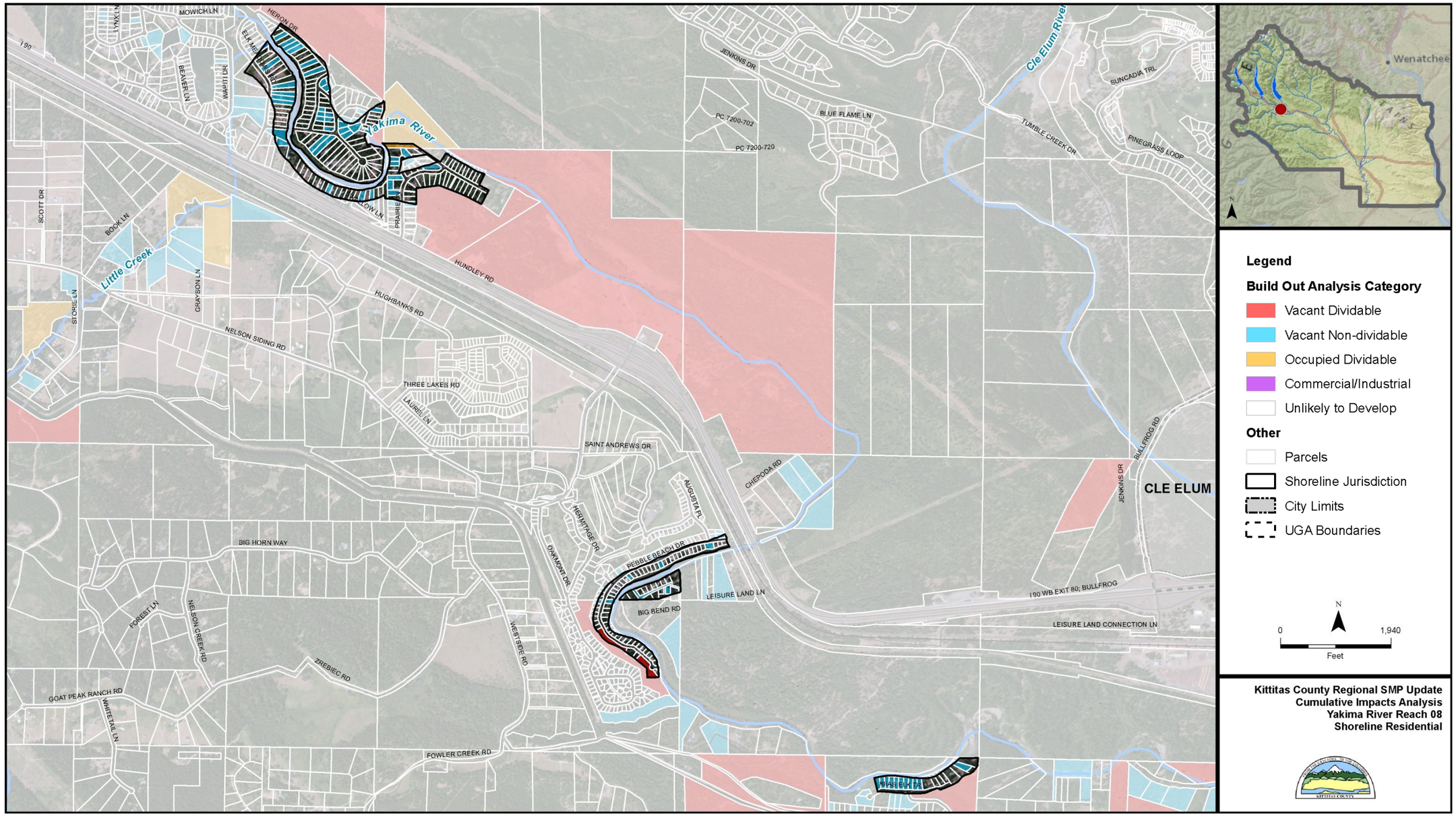
Yakima River, Reach 7– Rural Conservancy SED



Yakima River, Reach 7– Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality TMDLs have been implemented for 4,4'-DDE, DDT, elevated water temperatures, and turbidity. Despite these impairments, the water quality within the reach is adequate to support a large wild trout fishery. Within the reach, the buffer of the river consists primarily of forest habitat, although significant areas are disturbed by rural development, agriculture, roads, and the John Wayne trail.	According to the build-out analysis, there is potential for approximately 13 new single family residences on existing lots (ranging in area from approximately 1 to 9 acres), with another 33 residences/lots created by subdividing existing parcels into 5-acre lots, per current zoning regulations. Additionally, property owners may wish to construct hard armoring in the future to protect structures built close to the shoreline.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Rural Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Upper Yakima Instream Habitat project (Sponsor: Kittitas Conservation Trust and Yakama Nation) • Upper Yakima Habitat Protection project (Sponsor: Kittitas Conservation Trust and others)	New residential development, with modern septic systems, would be unlikely to significantly degrade the water quality of the river. In addition, the presence of a wide CMZ along the creek will likely result in large setbacks from the river. No anticipated cumulative impacts to water quality are anticipated.
Habitat The reach provides habitat for a variety of salmonid species, including spawning and rearing habitat for spring Chinook and summer steelhead. The majority of the reach contains dense shrub and forest habitat, although significant areas have been altered by rural development, agriculture, and roads. Priority sharp-tailed snake and wood duck nesting habitats are identified within the reach.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. An increase in shoreline armoring may impact fish habitat and habitat-forming processes within the river.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development, including lot creation, must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B).	*See above*	The presence of a wide CMZ along the river will likely result in large building setbacks, which would minimize the amount of potential forest cover loss within shoreline jurisdiction. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no anticipated cumulative impacts to habitat are anticipated.

Yakima River, Reach 7– Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology The hydrology of the Yakima River is highly controlled by three upstream reservoirs, operated to store and supply water for irrigation purposes. A wide floodplain and channel migration zone is present along the majority of the reach. The channel is constrained along most of the reach length by roads, the John Wayne trail, and other linear hydromodification areas.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). Subdivisions must have lots that contain at least one site, including access and utility locations that is suitable for use or development and is not located entirely within a floodway or channel migration zone. The new lots must adhere to the standard shoreline buffer without buffer averaging or reduction (Section 4.2.C). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	The presence of a wide CMZ along the creek will likely result in large building setbacks. New structures may be constructed in the floodplain, but compensatory floodplain storage would be required. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no cumulative impacts to hydrology are anticipated.

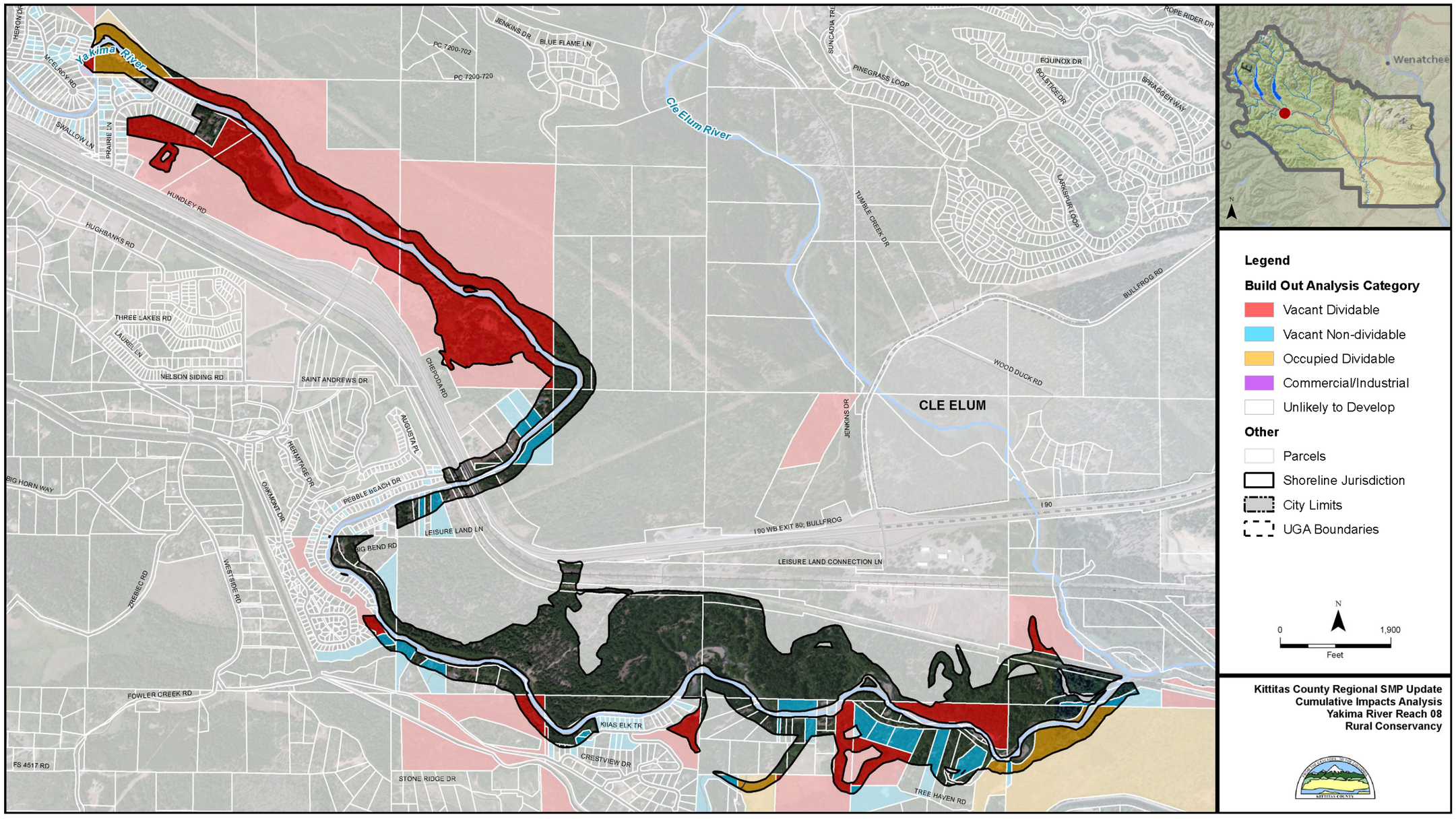
Yakima River, Reach 8–Shoreline Residential SED



Yakima River, Reach 8–Shoreline Residential SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The reach is listed by Ecology (2008) for low dissolved oxygen levels and elevated temperatures. TMDLs have been implemented for dieldrin and temperature. Despite these impairments, the water quality within the reach is adequate to support a large wild trout fishery. The riparian buffer is highly altered by residential development within the Shoreline Residential SED, although some relatively small patches of forest cover remain.	Within the areas designated as Shoreline Residential, there is potential for 65 new single family residences on existing lots, each approximately 0.5-acre in area. Many of these vacant lots are located directly adjacent to the river and have lot depths of less than 150 feet. It is likely that property owners will wish to construct hard armoring in the future to protect structures built close to the shoreline, particularly on shallow lots with river frontage.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems, particularly for trees removed in close proximity to the river. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Shoreline Residential SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Revegetate disturbed riparian areas, where practical (*no identified sponsor*). • Investigate opportunities for floodplain reconnection and setting-back of hydromodifications (*no identified sponsor*).	New residential development, with modern septic systems, would be unlikely to significantly degrade the water quality of the river. In addition, the presence of a wide CMZ along the creek will likely result in large setbacks from the river. No anticipated cumulative impacts to water quality are anticipated.
Habitat The reach provides habitat for a variety of salmonid species, including spawning and rearing habitat for spring Chinook. Within the Shoreline Residential SED, habitat is highly altered by residential development, although some patches of forest cover remain. A priority elk winter concentration area is identified within the SED area.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. An increase in shoreline armoring may impact fish habitat and habitat-forming processes within the river. Considering the lot sizes and configurations within the Shoreline Residential SED, there is a high likelihood of future armoring.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B).	*See above*	The presence of a wide CMZ along the river will likely result in large building setbacks, which would minimize the amount of potential forest cover loss within shoreline jurisdiction. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no anticipated cumulative impacts to habitat are anticipated.

Yakima River, Reach 8–Shoreline Residential SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology The hydrology of the Yakima River is highly controlled by three upstream reservoirs, operated to store and supply water for irrigation purposes. A wide floodplain and channel migration zone is present along the majority of the reach. It is assumed that areas of shoreline armoring, which protect adjacent homes, are present within the Shoreline Residential SED.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	The presence of a wide CMZ along the creek will likely result in large building setbacks. New structures may be constructed in the floodplain, but compensatory floodplain storage would be required. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no cumulative impacts to hydrology are anticipated.

Yakima River, Reach 8– Rural Conservancy SED

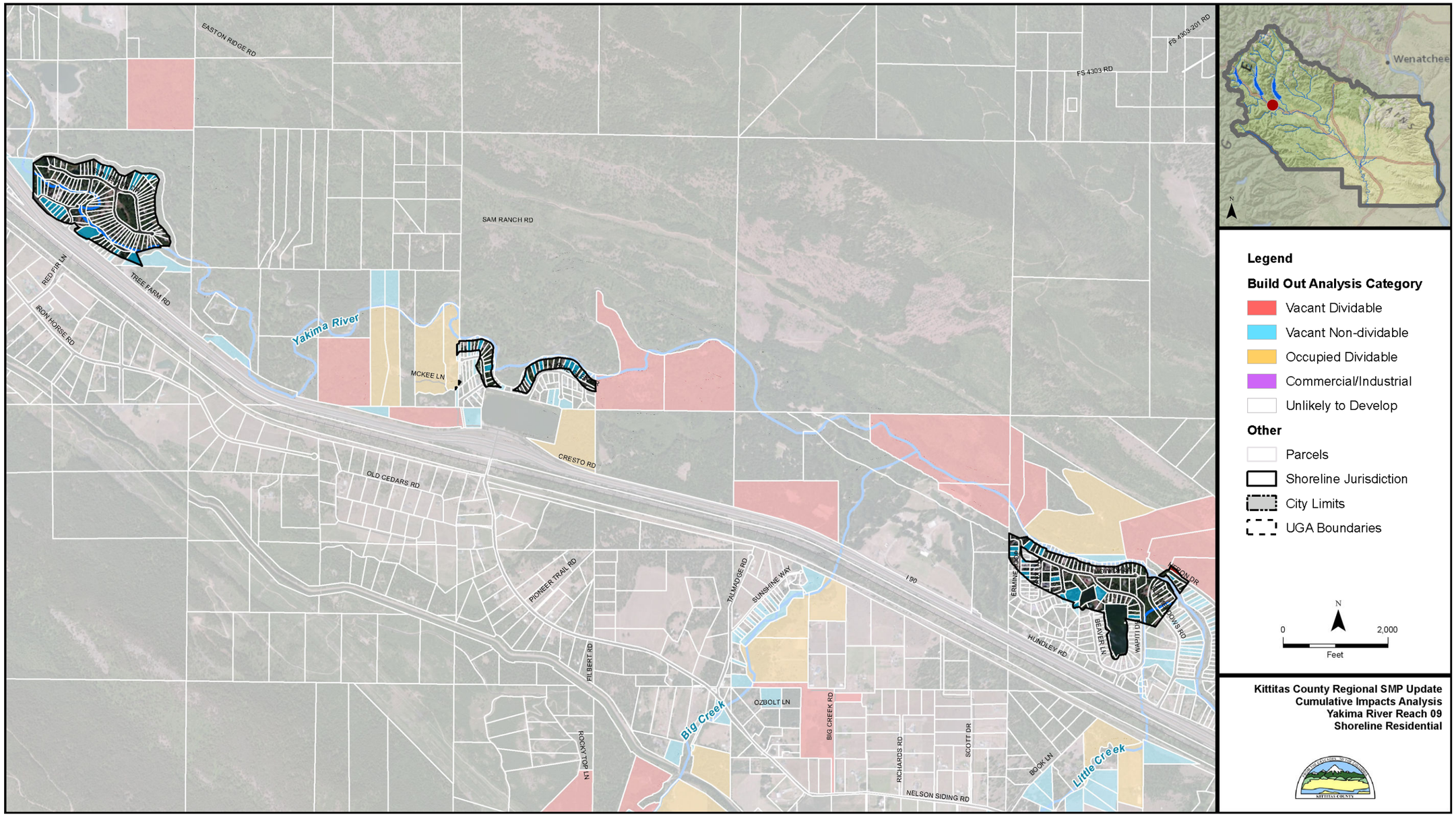


Yakima River, Reach 8– Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The reach is listed by Ecology (2008) for low dissolved oxygen levels and elevated temperatures. TMDLs have been implemented for dieldrin and temperature. Despite these impairments, the water quality within the reach is adequate to support a large wild trout fishery. Within the Rural Conservancy SED, the riparian buffer consists primarily of dense forest habitat, with minimal areas of alteration.	There is potential for significant new development within the Rural Conservancy SED. According to the build-out analysis, there is potential for 20 new single family residences on existing lots (ranging in area from approximately 2 to 8 acres), with an additional 92 lots/residences created by subdividing existing parcels into 5 acre lots (per current zoning regulations). Additionally, property owners may wish to construct hard armoring in the future to protect structures built close to the shoreline.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality. Altering or filling wetlands would reduce their ability to improve water quality.	Residential development is a permitted use in Rural Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21). Alterations to wetlands or their buffers require compensatory mitigation (Section 4.2.I).	• Revegetate disturbed riparian areas, where practical (*no identified sponsor*). • Investigate opportunities for floodplain reconnection and setting-back of hydromodifications (no identified sponsor). • Upper Yakima Instream Habitat project (Sponsor: Kittitas Conservation Trust and Yakama Nation) • Upper Yakima Habitat Protection project (Sponsor: Kittitas Conservation Trust and others)	New rural-density residential development, with modern septic systems, would be unlikely to significantly degrade the water quality of the river. In addition, the presence of a wide CMZ along the river will likely result in large setbacks from the river. No anticipated cumulative impacts to water quality are anticipated.

Yakima River, Reach 8– Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Habitat The reach provides habitat for a variety of salmonid species, including spawning and rearing habitat for spring Chinook. Within the Rural Conservancy SED, terrestrial habitat within the reach consists of dense forest cover with minimal areas of alteration. Extensive wetland habitat is mapped at the downstream end of the reach, and priority wood duck nesting habitat and a priority elk winter concentration area are identified.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. An increase in shoreline armoring may impact fish habitat and habitat-forming processes within the river. Altering or filling wetland habitat would reduce habitat for wetland-dependent species.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development, including lot creation, must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B). Development and uses within the Rural Conservancy SED should be situated to avoid or minimize impacts to native vegetation communities (Section 4.5.C)Compensatory mitigation actions for wetland impacts must replace functions affected by the alteration and must provide equal or greater functions compared to the impacted wetland (Section 4.2.I).	*See above*	The presence of a wide CMZ along the river will likely result in large building setbacks, which would minimize the amount of potential forest cover loss within shoreline jurisdiction. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no anticipated cumulative impacts to habitat are anticipated.

Yakima River, Reach 8– Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology The hydrology of the Yakima River is highly controlled by two upstream reservoirs, operated to store and supply water for irrigation purposes. A wide floodplain (containing significant wetland areas) and a channel migration zone are present along the majority of the reach. A portion of the stream channel is constrained by I-90 along its west bank.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems. Altering or filling wetlands would reduce their ability store surface waters.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). Subdivisions must have lots that contain at least one site, including access and utility locations that is suitable for use or development and is not located entirely within a wetland, floodway or channel migration zone. The new lots must adhere to the standard shoreline buffer without buffer averaging or reduction (Section 4.2.C). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	The presence of a wide CMZ along the river will likely result in large building setbacks. New structures may be constructed in the floodplain, but compensatory floodplain storage would be required. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no cumulative impacts to hydrology are anticipated.

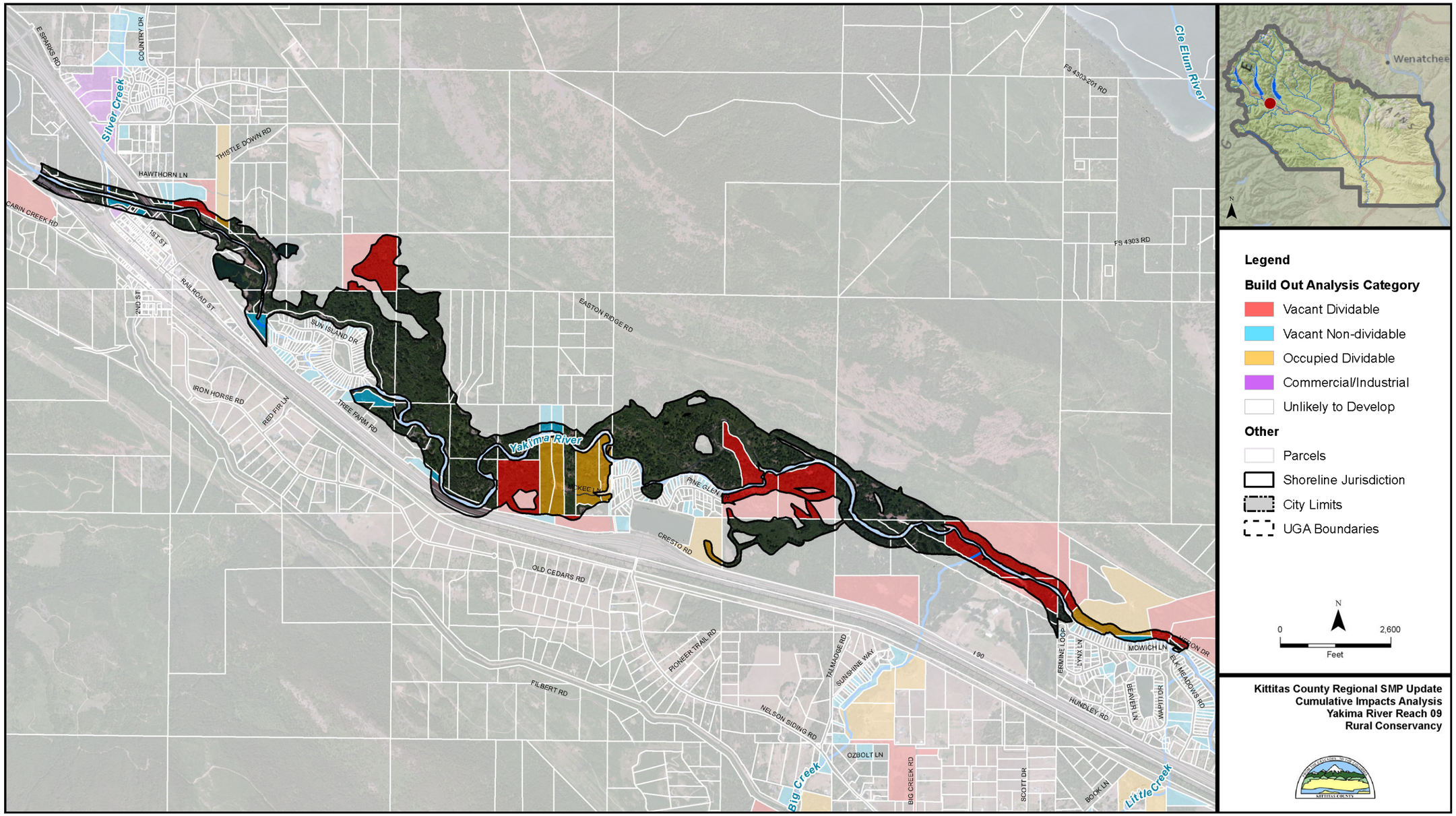
Yakima River, Reach 9–Shoreline Residential SED



Yakima River, Reach 9–Shoreline Residential SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Water Quality The reach is listed by Ecology (2008) for low dissolved oxygen levels and pH. Despite these impairments, the water quality within the reach is adequate to support a large wild trout fishery. The riparian buffer is highly altered by residential development within the Shoreline Residential SED, although some relatively small patches of forest cover remain.	Within the areas designated as Shoreline Residential, there is potential for 48 new single family residences on existing lots, each approximately 0.5-acre in area. Many of these vacant lots are located directly adjacent to the river and have lot depths of 200 feet or less. It is likely that property owners will wish to construct hard armoring in the future to protect structures built close to the shoreline, particularly on shallow lots with river frontage.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems, particularly for trees removed in close proximity to the river. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality.	Residential development is a permitted use in Shoreline Residential SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21).	• Revegetate disturbed riparian areas, where practical (*no identified sponsor*). • Investigate opportunities for floodplain reconnection and setting-back of hydromodifications (no identified sponsor). • Easton Reach Habitat Protection (Yakama Nation) • Easton Reach habitat acquisition (Kittitas Conservation Trust)	New residential development, with modern septic systems, would be unlikely to significantly degrade the water quality of the river. In addition, the presence of a wide CMZ along the creek will likely result in large setbacks from the river. No anticipated cumulative impacts to water quality are anticipated.
Habitat The reach provides habitat for a variety of salmonid species, including spawning and rearing habitat for spring Chinook. Within the Shoreline Residential SED, habitat is highly altered by residential development, although some patches of forest cover remain. A priority elk winter concentration area is identified within the SED area.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. An increase in shoreline armoring may impact fish habitat and habitat-forming processes within the river. Considering the lot sizes and configurations within the Shoreline Residential SED, there is a high likelihood of future armoring.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B).	*See above*	The presence of a wide CMZ along the river will likely result in large building setbacks, which would minimize the amount of potential forest cover loss within shoreline jurisdiction. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no anticipated cumulative impacts to habitat are anticipated.

Yakima River, Reach 9–Shoreline Residential SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Hydrology The hydrology of the Yakima River is highly controlled by two upstream reservoirs, operated to store and supply water for irrigation purposes. A wide floodplain and channel migration zone is present along the majority of the reach. It is assumed that areas of shoreline armoring, which protect adjacent homes, are present within the Shoreline Residential SED.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and 4.2.T).	*See above*	The presence of a wide CMZ along the creek will likely result in large building setbacks. New structures may be constructed in the floodplain, but compensatory floodplain storage would be required. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no cumulative impacts to hydrology are anticipated.

Yakima River, Reach 9– Rural Conservancy SED



Yakima River, Reach 9– Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
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Water Quality The reach is listed by Ecology (2008) for low dissolved oxygen levels and pH. Despite these impairments, the water quality within the reach is adequate to support a large wild trout fishery. Within the Rural Conservancy SED, the riparian buffer consists primarily of dense forest habitat, with minimal areas of alteration.	There is potential for significant new development within the Rural Conservancy SED. According to the build-out analysis, there is potential for 8 new single family residences on existing lots (ranging in area from approximately 2 to 8 acres), with an additional 62 lots/residences created by subdividing existing parcels into 5 acres lots (per current zoning regulations). Additionally, property owners may wish to construct hard armoring in the future to protect structures built close to the shoreline.	Clearing vegetation for home sites within the riparian zone would reduce water shading, and could exacerbate water temperature problems. An increase in impervious surfaces, resulting from new roofs and pavement, could increase sediment and pollutant runoff to the stream. Use of fertilizers and herbicides within new landscaping areas could also degrade water quality. Altering or filling wetlands would reduce their ability to improve water quality.	Residential development is a permitted use in Rural Conservancy SED. Structural shoreline stabilization requires a conditional use permit (Section 3.10). A 100 foot buffer from the ordinary high water mark is required for all new uses and development. A 15 foot building setback from the buffer is also required (Sections 4.5.B and 5.21). Alterations to wetlands or their buffers require compensatory mitigation (Section 4.2.I).	• Revegetate disturbed riparian areas, where practical (*no identified sponsor*). • Investigate opportunities for floodplain reconnection and setting-back of hydromodifications (no identified sponsor). • Easton Reach Habitat Protection (Yakama Nation) • Easton Reach habitat acquisition (Kittitas Conservation Trust) • Upper Yakima Instream Habitat project (Sponsor: Kittitas Conservation Trust and Yakama Nation) • Upper Yakima Habitat Protection project (Sponsor: Kittitas Conservation Trust and others)	New rural-density residential development, with modern septic systems, would be unlikely to significantly degrade the water quality of the river. In addition, the presence of a wide CMZ along the river will likely result in large setbacks from the river. No anticipated cumulative impacts to water quality are anticipated.

Yakima River, Reach 9– Rural Conservancy SED					
Existing Conditions (By ecological function)	**Foreseeable Future Development**	**Potential Risks to Ecological Functions**	**SMP Provisions Addressing Functions at Risk**		**Anticipated Future Performance**
			Protection (Proposed SMP regulations with reference by SMP section number)	**Restoration** (Final Restoration Plan)	
Habitat The reach provides habitat for a variety of salmonid species, including spawning and rearing habitat for spring Chinook. Within the Rural Conservancy SED, terrestrial habitat within the reach consists of dense forest cover with minimal areas of alteration. Extensive wetland habitat is mapped throughout the reach, and a priority elk winter concentration area is identified.	*See above*	Clearing vegetation for home sites within the riparian zone could reduce large woody debris recruitment, stream shading, and wildlife habitat. These impacts are generally more pronounced for development within floodplains. An increase in shoreline armoring may impact fish habitat and habitat-forming processes within the river. Altering or filling wetland habitat would reduce habitat for wetland-dependent species.	Shoreline buffers must be maintained in a predominately well-vegetated condition. Clearing not associated with an allowed use or development is not allowed. (Section 4.5.B). New residential development, including lot creation, must not require structural flood hazard reduction measures within the floodway or shoreline stabilization measures during the life of the development/use (Section 5.14.B.). Development and uses within the Rural Conservancy SED should be situated to avoid or minimize impacts to native vegetation communities (Section 4.5.C) Compensatory mitigation actions for wetland impacts must replace functions affected by the alteration and must provide equal or greater functions compared to the impacted wetland (Section 4.2.I).	*See above*	The presence of a wide CMZ along the river will likely result in large building setbacks, which would minimize the amount of potential forest cover loss within shoreline jurisdiction. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no anticipated cumulative impacts to habitat are anticipated.

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Hydrology The hydrology of the Yakima River is highly controlled by two upstream reservoirs, operated to store and supply water for irrigation purposes. A wide floodplain (containing significant wetland areas) and a channel migration zone are present along the majority of the reach. A portion of the stream channel is constrained by I-90 along its west bank.	*See above*	Construction of new homes and hard armoring within the active channel migration zone could alter stream conditions, as well as increase downstream flood, sedimentation, and erosion patterns. New structures built within the floodplain could increase downstream flooding problems. Altering or filling wetlands would reduce their ability store surface waters.	The development must be located landward of the channel migration hazard area or the applicant must submit documentation that demonstrates the parcel is effectively protected or has minimal risk of channel migration (Section 4.2.P). Subdivisions must have lots that contain at least one site, including access and utility locations that is suitable for use or development and is not located entirely within a wetland, floodway or channel migration zone. The new lots must adhere to the standard shoreline buffer without buffer averaging or reduction (Section 4.2.C). New uses must not reduce the effective flood storage volume within frequently flooded areas. Compensatory storage must be provided if grading, fill or other activity will occur within a frequently flooded area (Sections 4.2.R and Regulation 4.2.T).	*See above*	The presence of a wide CMZ along the river will likely result in large building setbacks. New structures may be constructed in the floodplain, but compensatory floodplain storage would be required. There is potential for new armoring along existing residences, but this would require mitigation under the SMP. Therefore, no cumulative impacts to hydrology are anticipated.