

WATER TRANSFER WORKING GROUP PROJECT DESCRIPTION

APPLICATION NO./COURT CLAIM NO.: Court Claim No. 00366/Draft Cert. S4-84175-J		
APPLICANT NAME	CONTACT NAME	TELEPHONE NO.
Washington State Department of Transportation (WSDOT), South Central Region	Debi Freudenthal, WSDOT Water Rights Coordinator	509-577-1633
	Brian White, Asst. Regional Administrator	509-577-1700
WATER RIGHT HOLDER'S NAME (if different)		EMAIL: Freuded@wsdot.wa.gov WhiteB@wsdot.wa.gov

DATE OF APPLICATION: 10/1/2019	PRIORITY DATE: May 24, 1884
WATER SOURCE: Wilson Creek	CROP: n/a
INSTANTANEOUS QUANTITY: 1.75 cfs	ANNUAL QUANTITY: 350 AF
PERIOD OF USE: April 1-October 31	
PLACE OF USE: Historic: ...portion of Section 11, Township 17, Range 18 EWM... Proposed: Primary and secondary reaches instream flows Wilson Creek, Yakima River, Columbia River to Pacific Ocean– see attached	PURPOSE OF USE: Historic: irrigation of 35 acres and stock water; Proposed: Instream flow and mitigation
IRRIGATION METHOD: n/a	

CONSUMPTIVE USE CALCULATION:

113 AF/year (see Record of Examination, CS4-00366CTCLsb9@1)

NARRATIVE DESCRIPTION OF PROJECT:

Brief History: WSDOT acquired Court Claim #00366/Draft Certificate S4-84175-J in October 2009. This water right was confirmed in the Conditional Final Order issued for Subbasin No. 9 (Wilson-Nanum) on April 17, 2006.

Ecology issued CS4-00366sb9@1 in 2010 to temporarily change the purpose and place of use of the water right to mitigation/instream flows through October 31, 2019. This change was to mitigate for WSDOT construction and/or maintenance activities within the Yakima Basin and established WSDOT's temporary water bank. WSDOT also received approval by the Yakima Superior Court and the Water Transfer Working Group (Applications 2009-20, 2010-04, 2016-16, 2017-32).

WSDOT also applied for the temporarily use of 60 AF/YR through November 2021 (Temporary authorization S4-25746) via diversions from Keechelus Lake to support the Interstate 90 (I-90) construction project (i.e., dust control, embankment compaction, road materials and processing and equipment washout; and landscape /mitigation site watering).

WSDOT also used the temporary water bank to mitigate other transportation-related uses, including State Route 410 Nile Valley Landslide mitigation site watering via temporary wells (G4-33133) and Interstate 82-Valley Mall Boulevard interchange landscape watering via a temporary well (G4-35261).

WSDOT and Ecology entered into a Memorandum of Agreement to temporarily hold this water right in the Trust Water Rights Program (TWRP). The water right was also assigned to the USBR-Ecology Water Storage and Exchange Contract (#09XX101700) for post-September 1st storage and supply.

Proposed changes:

1. WSDOT applied for a permanent change of the water right to place it into the TWRP for instream flow and mitigation and set up a permanent water bank (See CS4-00366sb9@2 -draft ROE 30-day comment period ends 10/30/2019). WSDOT and Ecology have drafted a new agreement for this change to allow continued temporary uses for the I-90 or other construction projects, mitigation for new permanent uses at I-90 Indian John safety rest

area (G4-34529), and other future assignments or lease of unallocated portions.

2. WSDOT also applied for two new temporary permits for new additional points of diversion/withdrawal of a combined maximum annual amount of 30 AF/YR for the next phases of highway construction between Easton and Lake Keechelus starting in June 2020 through November 2035. Once approved, WSDOT would cancel the temporary diversion from Lake Keechelus. This equates to a peak need of 40,000 gpd/ 0.08 cfs peak daily average flow and 5 AF/Month during the ~6-month construction season.

- Surface water diversion (Application S4-33222).
 - Two locations: 1) at the Yakima River (USFS Road 5400 bridge near Crystal Springs Sno-park) and 2) at the Kachess River (I-90 and Sparks Road right of way (ROW)/easements)
 - Rate: 0.33 cfs and 15 AF/YR for both locations
- Temporary well withdrawal (Application G4-33221).
 - Two locations: 1) Crystal Springs SnoPark (WA State Parks) and 2) at Easton stockpile (I-90 Right of way)
 - Rate: estimated 150 GPM/15 AF/YR total for both locations

The I-90 Snoqualmie Pass East Project Phases 3 and 4 Feasibility Study and Impairment Analysis of Potential Water Sources report (October 2018) completed by a WSDOT licensed hydrogeologist that reviewed the project water needs for feasibility as well as localized impacts to nearby wells, seasonal review flow conditions and water levels, and nearby water rights. Any potential minor impact by the proposal is offset by CS4-00366sb9@2. The report concluded that:

- Kachess River diversion of 0.08 cfs (peak daily average flow rate) in May/June low flows of 30 cfs was less than 0.3% of the flow
- Yakima River diversion of an average 0.08 cfs (peak average daily flow rate) in September flows of 80 cfs was less than 0.1% of the flow
- Estimated well depths needed were 200 feet at both locations –no impact to groundwater levels/wells and/or not likely to affect nearby groundwater rights

Because WSDOT's contractor would most likely divert/withdraw water just to fill one to five water tanks and trucks 5 to 6 day/week, there would not be a continuous diversion occurring. We propose to limit the diversion rate to 150 gpm/0.33 cfs. Although this is five times the rate used in our analysis, it would still only be 0.4 to 1.1% of the total low flows and less than 30% of the diversion rate set forth in the underlying water right.

WSDOT updated the WTWG in February 2017 on these proposals (preliminary at that time). At that time, USBR noted that Kachess River was harder to fill and preferred Yakima River diversion farther downstream for operational purposes, and recommended wells as the supply source.

See attachments: Draft Water Right Attributes – Claim #00366 / Certificate S4-84175-J, Two temporary applications (S4-33222, G4-33221) with maps, WSDOT I-90 Snoqualmie Pass East Project Phases 3 and 4 Feasibility Study and Impairment Analysis of Potential Water Sources report (October 2018).



USFS Road 5400 / Stampede Pass Road



I-90 near Lake Easton/Kachess River

EXHIBIT A

Attributes of the Water Right

Court Claim No. 00366; as changed by **Change Authorization No.:** CS4-00366sb9@2

Claimant Name: WA State Department of Transportation

Certificate Number: S4-84175-J

Subbasin: 09 Wilson-Naneum

Source: Wilson Creek

Use: Instream Flow and Mitigation

Historic Use: Irrigation of 35 acres and stock water

Period of Use: April 1 through October 31

Quantity: 1.75 cubic feet per second (cfs), 350 acre-feet per year; 113 acre-feet per year
Consumptive Use

Priority Date: May 24, 1884

Point of Diversion: N/A

(Historic Point of Diversion: 840 feet south and 800 feet west from the center of Section 2, being within the NE $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 2, T. 17 N., R. 18, E.W.M.)

Place of Use:

Primary Reach: Begins at the historical point of diversion on Wilson Creek and ends at a point on Wilson Creek approximately 810 feet south and 760 feet east of the center of Section 11, being within the NW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 11, T. 17 N., R. 18 E.W.M. in the County of Kittitas, Washington.

Secondary Reach: Begins at the end of the Primary Reach and continues past the confluence of Wilson Creek and the Yakima River at Yakima River Mile 115.9, continues past the confluence of the Yakima River and the Columbia River and ends at a point located at the confluence of the Columbia River and the Pacific Ocean in Section 18, T. 9 N., R. 11 W.W.M., Pacific County, Washington. The proposed instream water right will begin at Yakima River Mile 115.9 and continue to the Pacific Ocean.

(Historic Place of Use: That part of the SW $\frac{1}{4}$ NE $\frac{1}{4}$ and the N $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 11, T. 17 N., R. 18 E.W.M. lying southwest of the right of way of Burlington Northern Railroad



Application for a Water Right Permit

For Ecology Use
(Date Stamp)

A NON-REFUNDABLE MINIMUM FEE OF \$50.00 MUST ACCOMPANY THIS APPLICATION FOR THE FOLLOWING:

☒ GROUND WATER ☐ SURFACE WATER ☐ PERMANENT
☐ SHORT TERM ☒ TEMPORARY

NO FEE REQUIRED FOR THE FOLLOWING:

☐ DROUGHT ☐ COST REIMBURSEMENT

Follow the attached instructions. Attach additional sheets as necessary.

Section 1. APPLICANT

☒ I have participated in a pre-application conference with Ecology.

Applicant/Business Name: Brian White / WA State Department of Transportation, South Central Region	Phone No: 509-577-1700	Other No:
Address: 2809 Rudkin Road		
City: Union Gap	State: WA	Zip: 98903
Email Address (if available): WhiteB@wsdot.wa.gov		

Contact Name (if different from above): Bill Sauriol	Phone No: 509-577-1752	Other No:
Relationship to Applicant: WSDOT SCR Environmental Manager		
Address: same		
City:	State:	Zip:
Email Address (if available): SaurioW@wsdot.wa.gov		

Legal Land Owner or Part Owner Name of the Proposed Place of Use: WSDOT (Brian White). See Attachment #1	Phone No: same	Other No:
Address:		
City:	State:	Zip:
Email Address (if available): same		

For Ecology Use	APPLICATION NO: _____ SEPA: Exempt/Not Exempt Fee Paid: _____ Check No: _____ ECY Coding: 001-001-WR1-0285-000011	
Date Returned _____	By _____ Priority Date _____	By _____ WRIA: _____
Pre-application interviewer: _____		

Section 2. STATEMENT OF INTENT

Do you own the land on which the proposed point of diversion/withdrawal is located? ☒ YES ☒ NO
If no, do you have legal authority to make this application for use of another's land? ☒ YES ☐ NO

Briefly describe the purpose of your proposed project: continue construction of a 15-mile long highway corridor project by providing continued mitigated temporary water source supplies (originally approved under S4-35264 and S4-35746) at new water withdrawal locations.

Anticipated length of time to complete your project: 15 years (November 2035)

Water Use List all purposes for which water will be applied to a beneficial use and list quantity required for each.

Purpose(s) of Use	Rate (check one box only)		Acre-Feet per Year (AF/YR) (If known)	Period of Use (Continuously or Seasonal)
	<input type="checkbox"/> Cubic Feet per Second (CFS)	<input checked="" type="checkbox"/> Gallons per Minute (GPM)		
dust control				6/1/2020 through 11/30/2035. See Attachment 1
embankment compaction, material processing				
equipment washout				
restoration site plant watering				
TOTAL:	150		15 (10 consumptive) for each point of withdrawal	

Short Term/Temporary Water Use

Is this a request for a short term project (less than four months and non-recurring)? ☐ YES ☒ NO

Is this request for a temporary permit? ☒ YES ☐ NO

If yes to either question above, indicate the dates that the water will be needed:

FROM: 6/1/2020 TO: 11/30/2035

Section 3. POINT OF DIVERSION OR WITHDRAWAL

(Complete A or B, and C below)

A.) If Surface Water Source

B.) If Ground Water Source

<p><input type="checkbox"/> Spring <input type="checkbox"/> Creek <input type="checkbox"/> River <input type="checkbox"/> Lake</p> <p><input type="checkbox"/> Other: _____</p> <p>Source Name: _____</p> <p>Tributary to: _____</p> <p>Number of proposed diversion points: _____</p> <p>Do you have an existing diversion? <input type="checkbox"/> YES <input type="checkbox"/> NO</p>	<p><input checked="" type="checkbox"/> Well(s) <input type="checkbox"/> Other: <u>2 locations: One at Easton stockpile site within I-90 right of way and one at Crystal Springs State Park stockpile site. It is unlikely that both would be used at the same time</u></p> <p>_____</p> <p>Well diameter & depth: _____</p> <p>Number of proposed points of withdrawal: <u>2</u></p> <p>Do you have an existing well? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO</p> <p>If available, attach Water Well Report and pump test.</p> <p>Well Tag ID No. _____</p>
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C.) Point of Diversion/Withdrawal – Legal Description

Parcel No.	¼	¼	Section	Township	Range	County
EASTON STOCKPILE None - highway Right of Way	NW	NW	3	20N	13E	Kittitas Co.
Lot(s)	Block(s)		Subdivision			
If known, enter the distances in feet from the point of diversion or withdrawal to the nearest section corner: _____ Feet (<input type="checkbox"/> North/ <input type="checkbox"/> South) and _____ feet (<input type="checkbox"/> East/ <input type="checkbox"/> West) from the (<input type="checkbox"/> NW <input type="checkbox"/> SW <input type="checkbox"/> NE <input type="checkbox"/> SE <input type="checkbox"/> _____) corner of Section _____.						
Parcel No.	¼	¼	Section	Township	Range	County
CRYSTAL SPRINGS SNOPARK None - WA State Parks managed lands	SE	SE	15	21N	12E	Kittitas Co.
Lot(s)	Block(s)		Subdivision			
If known, enter the distances in feet from the point of diversion or withdrawal to the nearest section corner: _____ feet (<input type="checkbox"/> North/ <input type="checkbox"/> South) and _____ feet (<input type="checkbox"/> East/ <input type="checkbox"/> West) from the (<input type="checkbox"/> NW <input type="checkbox"/> SW <input type="checkbox"/> NE <input type="checkbox"/> SE <input type="checkbox"/> _____) corner of Section _____.						

NOTE: If more than two points of diversion/withdrawal attach additional information on a separate sheet of paper.

Section 4. PLACE OF USE

Attach a copy of the legal description of the property (on which the water will be used) taken from a real estate contract, property deed or title insurance policy, or copy it carefully in the space below.

The places of use will consist of the 15-mile long highway project corridor, including sections under construction or restoration, and staging, stockpile, processing and mitigation sites. The places of use are all within existing highway right-of-way or adjacent federal or state lands. See Attachment 1 and Attachment 2, Map 3

¼	¼	Section	Twp.	Range	County	Parcel No.
					Kittitas	

Do you own all the lands on which the proposed place of use is located? ☐ YES ☒ NO.

If no, do you have legal authority to make this application for use of another's land? ☒ YES ☐ NO

Provide owner name(s), address, and phone number: See File S4-35264 for easements, leases and special use permit approvals

Are there any other water rights or claims associated with this property or water system? ☐ YES ☒ NO

If yes, provide the water right and/or claim numbers: _____

Attach a map of your project showing the point of diversion/withdrawal and place of use. If platted property, be sure to include a complete copy of the plat map.

Section 5. WATER SYSTEM DESCRIPTION

Describe your proposed water system (include type and size of devices used to divert or withdraw water from source): WSDOT contractors will install wells and pumps to withdraw water and will also either install upland holding tanks to be accessed by a water truck, OR water will be pumped directly to a water truck that would transport the water to construction or restoration areas. The pump and pipe sizes would comply with applicable standards and regulatory requirements.

Section 6. DOMESTIC WATER SUPPLY SYSTEM INFORMATION

(Complete A or B, and C below)

A.) Domestic Water Systems only	B.) Municipal Water Systems only (defined under RCW 90.03.015)
Projected number of connections to be served: _____	Present population to be served water: _____
Type of connections: _____ (e.g., home, recreational cabin)	Estimate future population to be served: _____ (20 year projection)
C.) Water System Planning	
Do you have a Water System Plan approved by the Washington State Department of Health, Drinking Water Division? <input type="checkbox"/> YES <input type="checkbox"/> NO	
If yes, date plan was approved ____/____/____ Water System Number: _____	
Name of water system: _____	
Are you within the service area of an existing water system? <input type="checkbox"/> YES <input type="checkbox"/> NO	
If yes, explain why you are unable to connect to the system: _____	

Section 7. IRRIGATION/STOCKWATER/OTHER FARM USES

Irrigation

Total number of acres requested to be irrigated under this application = _____ ACRES

NOTE: Outline the area to be irrigated on your attached map.

Stockwater

List number and kind of stock: _____

Is the proposed project for a dairy farm? ☐ YES ☐ NO

Other Proposed Farm Uses

Describe all proposed uses: _____

Family Farm Water Act (RCW 90.66):

Calculate the acreage in which you have a controlling interest, including only:

- Acreage irrigated under water rights acquired after December 8, 1977,
- Acreage proposed to be irrigated under this application, and
- Acreage proposed to be irrigated under other pending application(s).

Is the combined acreage under existing rights greater than 6000 acres? ☐ YES ☒ NO

Do you have a controlling interest in a Family Farm Development Permit? ☐ YES ☒ NO

If yes, enter Permit No: _____

Section 8. OTHER WATER USES

Hydropower

Indicate total feet of head _____ and proposed capacity in kilowatts: _____

Describe works: _____

Indicate all uses to which power is to be applied: _____

FERC License No: _____

Mining/Industrial Use

Describe use, method of supplying and utilizing water: _____

Other Use

Section 9. WATER STORAGE

Will you be using a dam, dike, or other structure to retain or store water? ☐ YES ☒ NO

Are you proposing to store more than 10 acre-feet of water? ☐ YES ☐ NO

Will the water depth be 10 feet or more? ☐ YES ☐ NO

If you answered yes to any of the above questions, please describe: _____

NOTE: If you will be storing 10 acre-feet or more of water and/or if the water depth will be 10 feet or more at the deepest point and some portion of the storage will be above grade, you must also complete an Application for Permit to Construct a Reservoir and a Dam Construction Permit and Application.

Section 10. DRIVING DIRECTIONS

Provide detailed driving directions to the project site: Hyak, WA (Interstate 90, MP 55) to Easton WA (Interstate 90, MP 70). The highway construction project is located on Interstate 90 right of way and adjacent staging/stockpiling sites between Hyak, WA and Easton within Kittitas County.

Site Address: see above

Section 11. REQUIRED SIGNATURES

I certify that the information provided in this application is true and accurate to the best of my knowledge. I understand that in order to process my application, I grant staff from the Department of Ecology access to the site for inspection and monitoring purposes. Even though the employees of the Department of Ecology may have assisted me in the preparation of the above application, all responsibility for the accuracy of the information rests with me, the applicant.

W. Brian White

Print Name

(Applicant or Authorized representative)

Signature

Date

Same

Print Name

(Legal Owner or Part Owner Place of Use)

Signature

Date

Print Name

(Legal Owner or Part Owner Place of Use)

Signature

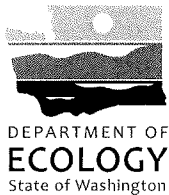
Date

Please check the region in which the project is located:

<p>*Submit your application to:</p> <p>DEPARTMENT OF ECOLOGY CASHIERING SECTION PO BOX 47611 OLYMPIA, WA 98504-7611</p>	<input checked="" type="checkbox"/> Central Regional Office 1250 W. Alder Street Union Gap, WA 98903-0009 (509) 575-2490	<input type="checkbox"/> Eastern Regional Office 4601 N. Monroe Street Spokane, WA 99205-1265 (509) 329-3400
	<input type="checkbox"/> Northwest Regional Office 3190 – 160 th Avenue SE Bellevue, WA 98008-5452 (425) 649-7000	<input type="checkbox"/> Southwest Regional Office PO Box 47775 Olympia, WA 98504-7775 (360) 407-6300

If you have questions about your application, contact the Water Resources program at the regional office in which your project is located.





Application for a Water Right Permit

For Ecology Use
(Date Stamp)

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☐ GROUND WATER ☒ SURFACE WATER ☐ PERMANENT
☐ SHORT TERM ☒ TEMPORARY

NO FEE REQUIRED FOR THE FOLLOWING:

☐ DROUGHT ☐ COST REIMBURSEMENT

Follow the attached instructions. Attach additional sheets as necessary.

Section 1. APPLICANT

☒ I have participated in a pre-application conference with Ecology.

Applicant/Business Name: Brian White / WA State Department of Transportation, South Central Region	Phone No: 509-577-1700	Other No:
Address: 2809 Rudkin Road		
City: Union Gap	State: WA	Zip: 98903
Email Address (if available): WhiteB@wsdot.wa.gov		

Contact Name (if different from above): Bill Sauriol	Phone No: 509-577-1752	Other No:
Relationship to Applicant: WSDOT SCR Environmental Manager		
Address: same		
City:	State:	Zip:
Email Address (if available): SaurioW@wsdot.wa.gov		

Legal Land Owner or Part Owner Name of the Proposed Place of Use: WSDOT (Brian White). See Attachment #1	Phone No: same	Other No:
Address: same		
City:	State:	Zip:
Email Address (if available): same		

For Ecology Use	APPLICATION NO: _____		SEPA: Exempt/Not Exempt	
	Fee Paid: _____ Check No: _____		ECY Coding: 001-001-WR1-0285-000011	
Date Returned _____ By _____ Priority Date _____ By _____ WRIA: _____				
Pre-application interviewer: _____				

Section 2. STATEMENT OF INTENT

Do you own the land on which the proposed point of diversion/withdrawal is located? ☒ YES ☒ NO
If no, do you have legal authority to make this application for use of another's land? ☒ YES ☐ NO

Briefly describe the purpose of your proposed project: 1) continue construction of a 15-mile long highway corridor project by providing continued mitigated temporary water source supplies (originally approved under S4-35264) at new water withdrawal locations.

Anticipated length of time to complete your project: 10 years (November 2029)

Water Use List all purposes for which water will be applied to a beneficial use and list quantity required for each.

Purpose(s) of Use	Rate (check one box only) <input type="checkbox"/> Cubic Feet per Second (CFS) <input checked="" type="checkbox"/> Gallons per Minute (GPM)	Acre-Feet per Year (AF/YR) (If known)	Period of Use (Continuously or Seasonal)
dust control			6/1/2020 through 11/30/2035
embankment compaction, material processing			
equipment washout			
restoration site plant watering			
TOTAL:	150	15 total (10 consumptive) for both locations	

Short Term/Temporary Water Use

Is this a request for a short term project (less than four months and non-recurring)? ☐ YES ☒ NO

Is this request for a temporary permit? ☒ YES ☐ NO

If yes to either question above, indicate the dates that the water will be needed:

FROM: 6/1/2020 TO: 11/30/2035

Section 3. POINT OF DIVERSION OR WITHDRAWAL (Complete A or B, and C below)

A.) If Surface Water Source	B.) If Ground Water Source
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<input type="checkbox"/> Spring <input type="checkbox"/> Creek <input checked="" type="checkbox"/> River <input type="checkbox"/> Lake <input type="checkbox"/> Other: _____ Source Name: <u>1) Yakima River; 2) Kachess River; use of</u> <u>both sites at same time is unlikely</u> Tributary to: <u>Columbia River</u> Number of proposed diversion points: <u>2 (one at each source</u> <u>location)</u> Do you have an existing diversion? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> Well(s) <input type="checkbox"/> Other: _____ _____ Well diameter & depth: _____ Number of proposed points of withdrawal: _____ Do you have an existing well? <input type="checkbox"/> YES <input type="checkbox"/> NO If available, attach Water Well Report and pump test. Well Tag ID No. _____
--	---

C.) Point of Diversion/Withdrawal – Legal Description

Parcel No.	¼	¼	Section	Township	Range	County
KACHESS RIVER None - highway Right of Way	SW	NE	3	20N	13E	Kittitas Co.
Lot(s)	Block(s)		Subdivision			
If known, enter the distances in feet from the point of diversion or withdrawal to the nearest section corner: _____ Feet (<input type="checkbox"/> North/ <input type="checkbox"/> South) and _____ feet (<input type="checkbox"/> East/ <input type="checkbox"/> West) from the (<input type="checkbox"/> NW <input type="checkbox"/> SW <input type="checkbox"/> NE <input type="checkbox"/> SE <input type="checkbox"/> _____) corner of Section _____.						
Parcel No.	¼	¼	Section	Township	Range	County
YAKIMA RIVER None - USFS managed lands	SW	SW	14	21N	12E	Kittitas Co.
Lot(s)	Block(s)		Subdivision			
If known, enter the distances in feet from the point of diversion or withdrawal to the nearest section corner: _____ feet (<input type="checkbox"/> North/ <input type="checkbox"/> South) and _____ feet (<input type="checkbox"/> East/ <input type="checkbox"/> West) from the (<input type="checkbox"/> NW <input type="checkbox"/> SW <input type="checkbox"/> NE <input type="checkbox"/> SE <input type="checkbox"/> _____) corner of Section _____.						

NOTE: If more than two points of diversion/withdrawal attach additional information on a separate sheet of paper.

Section 4. PLACE OF USE

Attach a copy of the legal description of the property (on which the water will be used) taken from a real estate contract, property deed or title insurance policy, or copy it carefully in the space below.

The places of use will consist of the 15-mile long highway project corridor, including sections under construction or restoration, and staging, stockpile, processing and mitigation sites. The places of use are all within existing highway right-of-way or adjacent federal or state lands. See Attachment 1 and Attachment 2, Map 3.

¼	¼	Section	Twp.	Range	County	Parcel No.
					Kittitas	

Do you own all the lands on which the proposed place of use is located? ☐ YES ☒ NO.

If no, do you have legal authority to make this application for use of another's land? ☒ YES ☐ NO

Provide owner name(s), address, and phone number: See File S4-35264 for easements, leases and special use permit approvals

Are there any other water rights or claims associated with this property or water system? ☐ YES ☒ NO

If yes, provide the water right and/or claim numbers: _____

Attach a map of your project showing the point of diversion/withdrawal and place of use. If platted property, be sure to include a complete copy of the plat map.

Section 5. WATER SYSTEM DESCRIPTION

Describe your proposed water system (include type and size of devices used to divert or withdraw water from source): WSDOT contractor's will install floating pumps with screened intakes and also either install upland holding tanks to be accessed by a water truck, OR water will be pumped directly to a water truck that would transport the water to construction or restoration areas. The pump and pipe sizes would comply with applicable standards and regulatory requirements. No vegetation (shrub or tree) removal is anticipated for either the water truck access or water tank placement.

Yakima River at Rd 5400 bridge: limited area for a temporary tank set up

Kachess River at I90 bridges near Easton: adequate area for both temporary tank placement and for water truck access

Section 6. DOMESTIC WATER SUPPLY SYSTEM INFORMATION

(Complete A or B, and C below)

A.) Domestic Water Systems only	B.) Municipal Water Systems only (defined under RCW 90.03.015)
Projected number of connections to be served: _____	Present population to be served water: _____
Type of connections: _____ (e.g., home, recreational cabin)	Estimate future population to be served: _____ (20 year projection)
C.) Water System Planning	
Do you have a Water System Plan approved by the Washington State Department of Health, Drinking Water Division? <input type="checkbox"/> YES <input type="checkbox"/> NO	
If yes, date plan was approved ____/____/____ Water System Number: _____	
Name of water system: _____	
Are you within the service area of an existing water system? <input type="checkbox"/> YES <input type="checkbox"/> NO	
If yes, explain why you are unable to connect to the system: _____	

Blank area for map or drawing, crossed out with a diagonal line.

Section 7. IRRIGATION/STOCKWATER/OTHER FARM USES

Irrigation

Total number of acres requested to be irrigated under this application = _____ ACRES

NOTE: Outline the area to be irrigated on your attached map.

Stockwater

List number and kind of stock: _____

Is the proposed project for a dairy farm? ☐ YES ☐ NO

Other Proposed Farm Uses

Describe all proposed uses: _____

Family Farm Water Act (RCW 90.66):

Calculate the acreage in which you have a controlling interest, including only:

- Acreage irrigated under water rights acquired after December 8, 1977,
- Acreage proposed to be irrigated under this application, and
- Acreage proposed to be irrigated under other pending application(s).

Is the combined acreage under existing rights greater than 6000 acres? ☐ YES ☒ NO

Do you have a controlling interest in a Family Farm Development Permit? ☐ YES ☒ NO

If yes, enter Permit No: _____

Section 8. OTHER WATER USES

Hydropower

Indicate total feet of head _____ and proposed capacity in kilowatts: _____

Describe works: _____

Indicate all uses to which power is to be applied: _____

FERC License No: _____

Mining/Industrial Use

Describe use, method of supplying and utilizing water: _____

Other Use

Section 9. WATER STORAGE

Will you be using a dam, dike, or other structure to retain or store water? ☐ YES ☒ NO

Are you proposing to store more than 10 acre-feet of water? ☐ YES ☐ NO

Will the water depth be 10 feet or more? ☐ YES ☐ NO

If you answered yes to any of the above questions, please describe: _____

NOTE: If you will be storing 10 acre-feet or more of water and/or if the water depth will be 10 feet or more at the deepest point and some portion of the storage will be above grade, you must also complete an Application for Permit to Construct a Reservoir and a Dam Construction Permit and Application.

Section 10. DRIVING DIRECTIONS

Provide detailed driving directions to the project site: Hyak, WA (I-90, MP 55) to Easton WA (I-90, MP 70). The highway construction project is located on Interstate 90 right of way and adjacent staging/stockpiling sites between Hyak, WA and Easton within Kittitas County.

Site Address: see above

Section 11. REQUIRED SIGNATURES

I certify that the information provided in this application is true and accurate to the best of my knowledge. I understand that in order to process my application, I grant staff from the Department of Ecology access to the site for inspection and monitoring purposes. Even though the employees of the Department of Ecology may have assisted me in the preparation of the above application, all responsibility for the accuracy of the information rests with me, the applicant.

W. Brian White

Print Name

(Applicant or Authorized representative)

W. Brian White
Signature

11/21/19
Date

Same

Print Name

(Legal Owner or Part Owner Place of Use)

Signature

Date

Print Name

(Legal Owner or Part Owner Place of Use)

Signature

Date

Please check the region in which the project is located:

<p>*Submit your application to:</p> <p>DEPARTMENT OF ECOLOGY CASHIERING SECTION PO BOX 47611 OLYMPIA, WA 98504-7611</p>	<input checked="" type="checkbox"/> Central Regional Office 1250 W. Alder Street Union Gap, WA 98903-0009 (509) 575-2490	<input type="checkbox"/> Eastern Regional Office 4601 N. Monroe Street Spokane, WA 99205-1265 (509) 329-3400
	<input type="checkbox"/> Northwest Regional Office 3190 – 160 th Avenue SE Bellevue, WA 98008-5452 (425) 649-7000	<input type="checkbox"/> Southwest Regional Office PO Box 47775 Olympia, WA 98504-7775 (360) 407-6300

If you have questions about your application, contact the Water Resources program at the regional office in which your project is located.



Application Supplemental Info

- Section 1 – Legal Land Owner
- Section 2 – Water Use
- Section 4 – Place of Use

Section 1. Legal Land Owner:

On behalf of the Federal Highway Administration, WSDOT is the proponent for the federal highway improvement project. See File for Temporary Permit #S4-35264, which includes documentation related to:

- WSDOT has fee title to some of the project area for the purpose of highway right of way.
- WSDOT has a lease with the WA State Parks Commission for use of Crystal Springs Sno-park.
- The remainder of the project area and proposed place of use are within easements granted to the Federal Highway Administration by the United States Forest Service and/or the US Bureau of Reclamation, or are within land areas permitted for use by the United States Forest Service.

Legal Owner	Address	Phone Number
Federal Highway Administration c/o WSDOT	2809 Rudkin Road, Union Gap, WA 98903	509-577-1700
WA State Parks and Recreation Commission	PO Box 42650 Olympia, WA 98504-2650	360-902-8658
United States Forest Service	802 W. 2 nd Street, Cle Elum, WA 98922	509-852-1100
United States Bureau of Reclamation	1917 Marsh Road, Yakima, WA 98901	509-575-5848

Section 2 – Water Use

The monthly estimates of water use proposed are shown in the table below, which are similar to historic and current monthly water use authorized under Temporary Authorization S4-35746. WSDOT understands that additional use after flip flop depends on availability. It is assumed that the source would be either a well or a diversion but most likely not both during one year.

Total Water Needs (2020 through 2035):

	May	June	July	August	September	October	November	TOTAL
Total monthly water needs (Acre-feet)	3.75	6.25	6.25	6.25	6.25	6.25	2.5	37.5 Total use
Total monthly water needs (Acre-feet)	3	5	5	5	5	5	2	30 Total (consumptive use)

Section 4 – Place of Use. The highway right of way transgresses across multiple sections of land along a 15-mile corridor, within Kittitas County.

D.) Place of Use - Highway Right of Way						
Parcel No.	¼	¼	Section	Township	Range	County
N/A – Interstate 90 right-of-way	SW	SW	14	22N	11	Kittitas
N/A – Interstate 90 right-of-way	All	SE	15	22N	11	Kittitas
N/A – Interstate 90 right-of-way	NW & SW NW & SW	NW SW	23	22N	11	Kittitas
N/A – Interstate 90 right-of-way	All All SW	NW SW SE	26	22N	11	Kittitas
N/A – Interstate 90 right-of-way	All All	NE SE	35	22N	11	Kittitas
N/A – Interstate 90 right-of-way	NW, SW All All	NE NW SE	1	21N	11	Kittitas
N/A – Interstate 90 right-of-way	NE	NE	2	21N	11	Kittitas
N/A – Interstate 90 right-of-way	NE	NE	12	21N	11	Kittitas
N/A – Interstate 90 right-of-way	SW, SE NE, SE SW	NW SW SE	10	21N	12	Kittitas
N/A – Interstate 90 right-of-way	SW All	NW SW	14	21N	12	Kittitas
N/A – Interstate 90 right-of-way	NE	NE	15	21N	12	Kittitas
N/A – Interstate 90 right-of-way	All	NE	23	21N	12	Kittitas
N/A – Interstate 90 right-of-way	SW NE, SE SW	NW SW SE	24	21N	12	Kittitas
N/A – Interstate 90 right-of-way	All All	NE SE	25	21N	12	Kittitas
N/A – Interstate 90 right-of-way	NE	NE	36	21N	12	Kittitas
N/A – Interstate 90 right-of-way		All	31	21N	13	Kittitas
N/A – Interstate 90 right-of-way		All	32	21N	13	Kittitas
N/A – Interstate 90 right-of-way	SE SE	SW SE	33	21N	13	Kittitas
N/A – Interstate 90 right-of-way	All All	NE NW	3	20N	13	Kittitas
N/A – Interstate 90 right-of-way	All	SW	2	20N	13	Kittitas
N/A – Interstate 90 right-of-way	NE	NE	4	20N	13	Kittitas

Section 4 – Place of Use

Cont'd...D.) Place of Use Staging, Stockpile, Process and Mitigation Sites						
Parcel No.	¼	¼	Section	Township	Range	County
N/A Gold Creek Area -Staging and Mitigation AND Parcel # 22-11-15040-0005- I-90 Interchange & Maintenance Facility -Staging and Mitigation	All	SE	15	22	11	Kittitas
N/A Townsend Creek -Mitigation	SE	SE	1	21	11	Kittitas
N/A Sunset Highway -Mitigation	All	NW	10	21	12	Kittitas
N/A Price Creek Interim Rest Area and Sno-park- Staging and Mitigation	SW, SE NE, NW	SE NE	10 15	21	12	Kittitas
N/A Stampede Pass Interchange and Maintenance Area	SW	SE	14	21	12	Kittitas
Parcel #21-12-15000-0005 Crystal Springs Sno Park -Staging	SW, SE NE	SE NE	15 22	21	12	Kittitas
N/A Crystal Springs Campground - Staging	NW	SW	14	21	12	Kittitas
N/A Upper and Lower Cabin Creek Sno Parks - Staging	NW, SE	SW	24	21	12	Kittitas
Parcel # 20-13-03020-0003 Median at Easton Hill -Staging	NW	NW	3	20	12	Kittitas

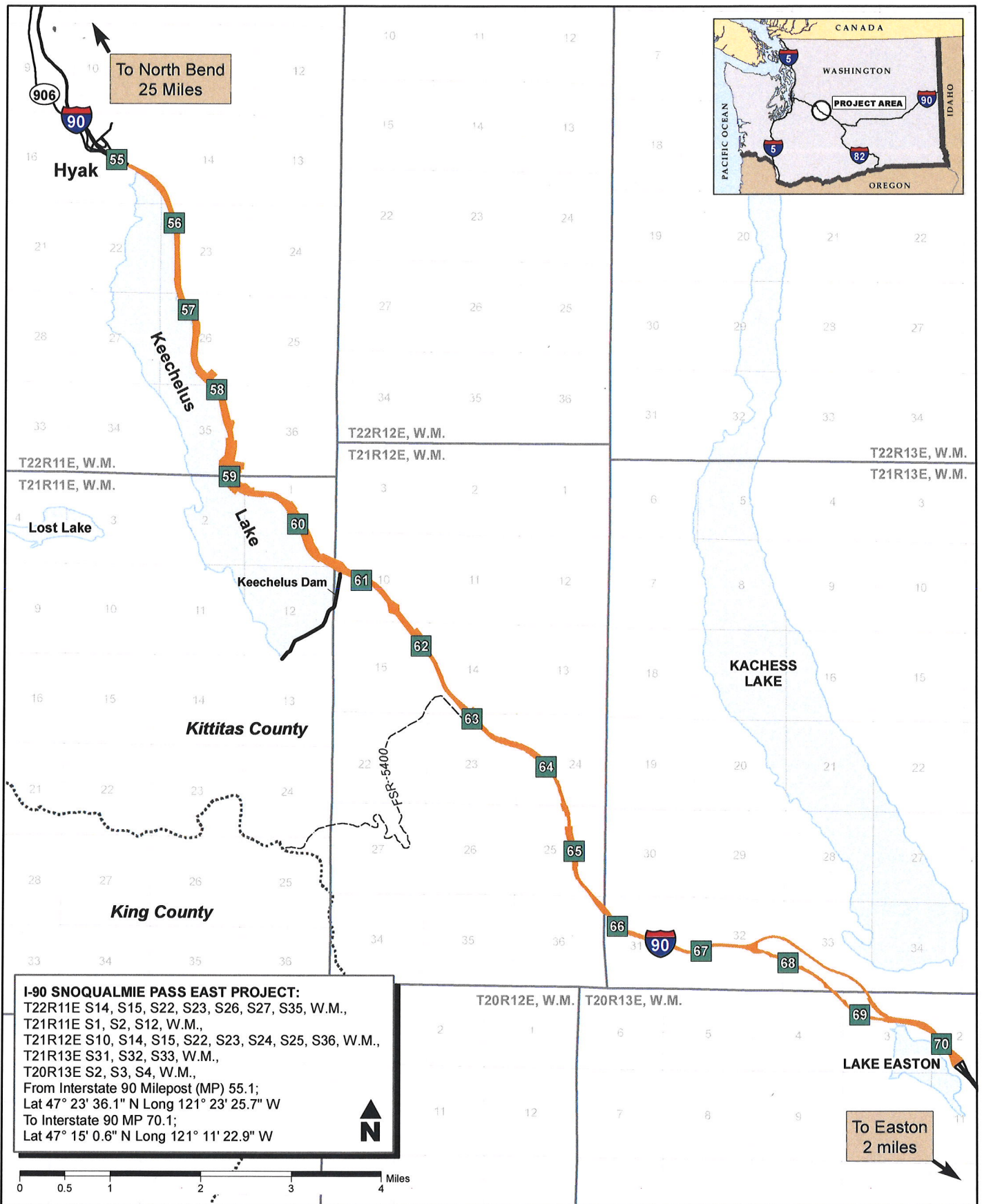
MAPS

Project Vicinity

Places of Use

Points of Diversion/Withdrawal

I-90 Snoqualmie Pass East Project, Hyak to Lake Easton Water Rights Vicinity



September 2018



**Washington State
Department of Transportation**

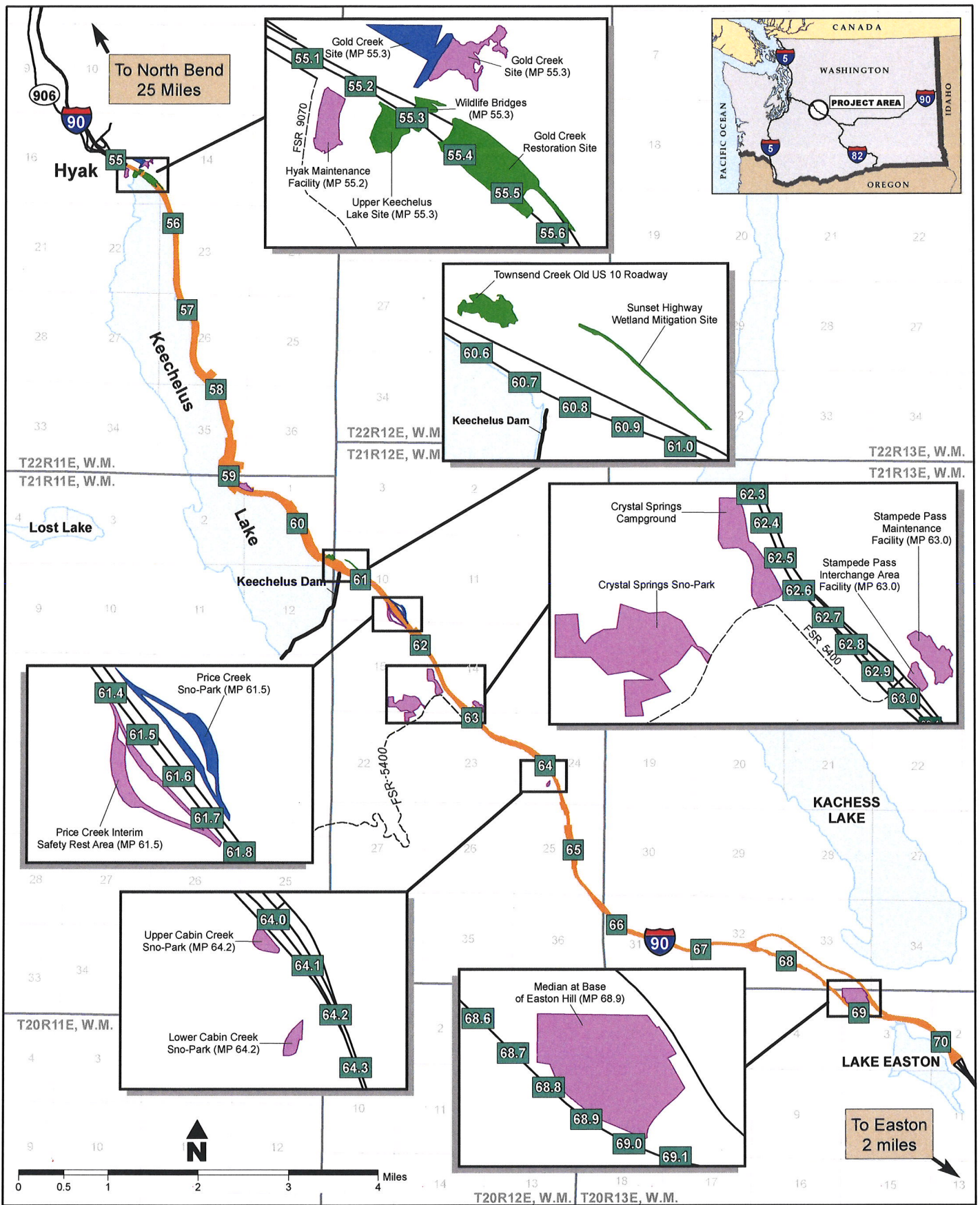


Milepost Marker



Highway Right of Way

I-90 Snoqualmie Pass East Project, Hyak to Lake Easton Place of Use



September 2018



Washington State
Department of Transportation

MP

Milepost Marker

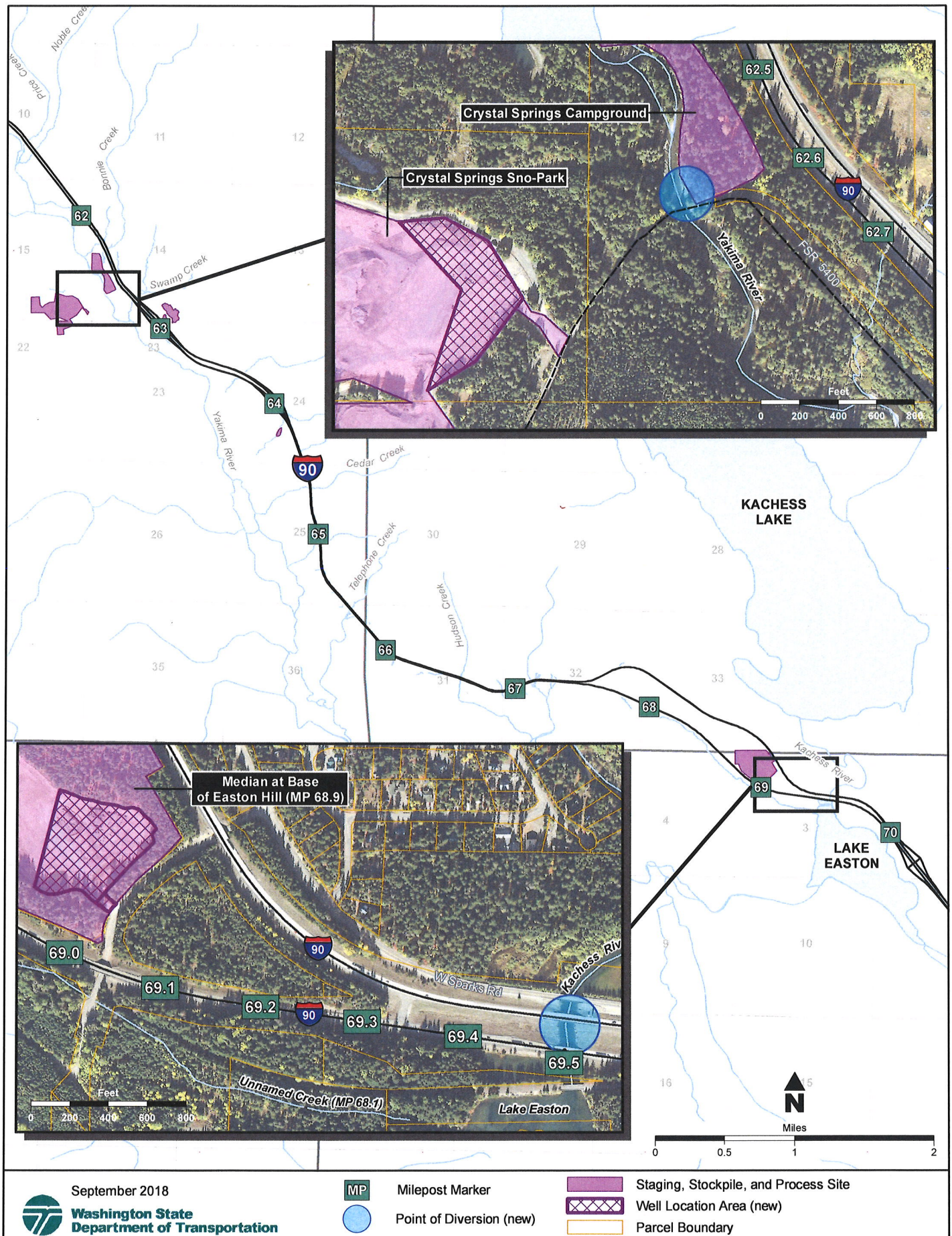
Highway Right of Way

Staging, Stockpile, and Process Site

Mitigation Site

Both (Staging, Stockpile, Process / Mitigation Site)

I-90 Snoqualmie Pass East Project, Hyak to Lake Easton Water Rights Points of Diversion/Withdrawal



**I-90 Snoqualmie Pass East Project Phase 3 and 4 Feasibility Study and
Impairment Analysis of Potential Water Sources**

October 2018



**Washington State
Department of Transportation**

I-90 Snoqualmie Pass East Project Phases 3 and 4 Feasibility Study and Impairment Analysis of Potential Water Sources

**Rob Schanz PE, LHG, Hydrology Program
WSDOT Headquarters Hydraulics Division**

**I-90 Snoqualmie Pass East Project Phases 3 and 4
Feasibility Study and Impairment Analysis of Potential Water Sources**

October 2018

Americans with Disabilities Act (ADA) Information

Materials can be made available in an alternative format by emailing the WSDOT Diversity/ADA Affairs Team at wsdotada@wsdot.wa.gov or by calling toll free: 855-362-4ADA (4232). Persons who are deaf or hard of hearing may contact that number via the Washington Relay Service at 7-1-1.

Title VI Notice to Public

It is Washington State Department of Transportation (WSDOT) policy to ensure no person shall, on the grounds of race, color, national origin, or sex, as provided by Title VI of the Civil Rights Act of 1964, be excluded from participation in, be denied the benefits of, or be otherwise discriminated against under any of its federally funded programs and activities. Any person who believes his/her Title VI protection has been violated may file a complaint with WSDOT's Office of Equal Opportunity (OEO). For Title VI complaint forms and advice, please contact OEO's Title VI Coordinator at 360-705-7082 or 509-324-6018.

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1.0 Introduction and Purpose

The Washington State Department of Transportation is considering the following sites to provide water for construction (e.g., embankment compaction, dust control) and watering for plant establishment at mitigation/restoration areas for the remaining I-90 Snoqualmie Pass East Project Phases 3 and 4 (Figure 1):

- Easton Stockpile Area (potential well/groundwater withdrawal)
- Crystal Springs Sno Park (potential well/groundwater withdrawal)
- Kachess River at the I-90 bridges (potential surface water withdrawal)
- Yakima River at the Stampede Pass Road bridge (potential surface water withdrawal)

This report describes the project water needs and proposed mitigation strategy to offset impacts to downstream water rights, and assesses the feasibility and localized impacts of each potential withdrawal site. For the groundwater sites the report describes the local hydrogeology, nearby water wells, potential water bearing formations, and risks of impacts to nearby wells. For surface water sites the report describes seasonal river flow conditions and assesses potential impacts to local water levels and nearby water rights.

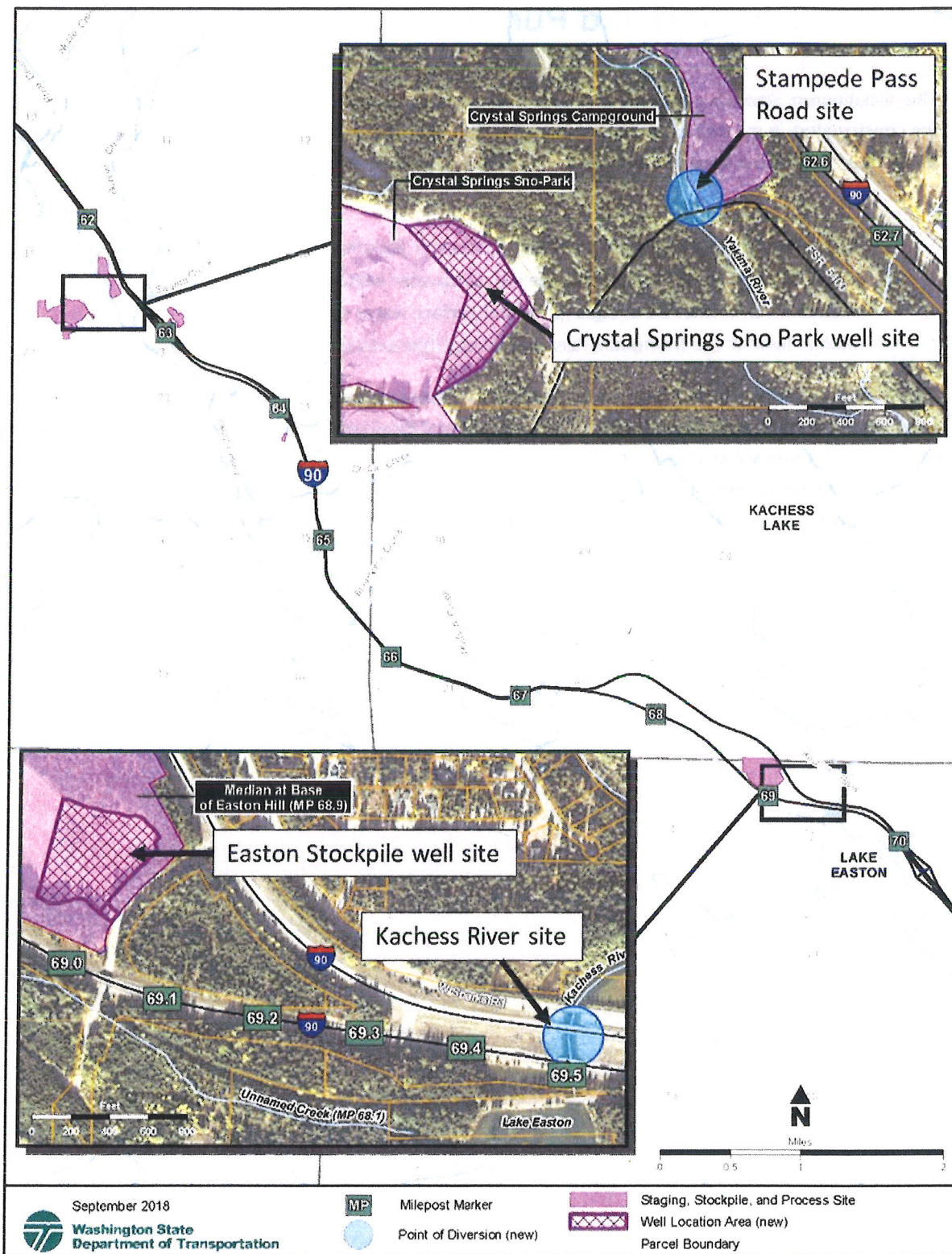


Figure 1. Site location map.

2.0 Methods and Data Sources

General site conditions and surficial geology are based on GIS data layers available in WSDOT's Geodatabase Catalog, including:

- Wa. State Department of Natural Resources (DNR) 100K Surficial Geology
- U.S. Dept. of Agriculture Natural Resources Conservation Service (NRCS) soils
- Washington State 2017 orthophoto coverage, 1 foot resolution

Topography was derived from a 2014 Yakima Valley LiDAR coverage obtained from the Washington State DNR LiDAR Portal (<https://www.dnr.wa.gov/lidar#lidar-portal>, accessed June 2018).

Boring logs for wells and geotechnical exploration holes were obtained from the following sources:

- Wa. State Department of Ecology (Ecology) Well Report Viewer (<https://fortress.wa.gov/ecy/waterresources/map/WCLWebMap/default.aspx>. Accessed June 19, 2018). Boring locations in this database are based on the quarter-quarter section reported by the driller, and therefore can be as much as 1000 feet off from the actual location.
- WSDOT boring logs provided as a geodatabase by WSDOT's Materials Lab. This includes historical geotechnical borings from previous highway projects as well as more recent exploration efforts for the I-90 Snoqualmie Pass East Project.

Other water well data were derived from:

- GIS layer of public water wells obtained from Kittitas County, <http://data-kitcogis.opendata.arcgis.com/datasets/wells> (accessed September 5, 2018). This layer lists well locations, well depths and capacities of Group A and B public wells.
- WSDOT Geodatabase Catalog, Public Drinking Water Wells (Group A and B), Well Zone Protection Areas, and Designated Sole Source Aquifers. WSDOT obtained the source location data from the Washington State Department of Health, Office of Drinking Water.
- Surface and Groundwater rights listed on Wa. State Dept. of Ecology's on-line Washington Water Resources Explorer (<https://fortress.wa.gov/ecy/waterresources/map/WaterResourcesExplorer.aspx>. Accessed July 3, 2018.)

River flow conditions were characterized using information provided in the Supplemental Draft Environmental Impacts Statement (EIS) for the Kachess Drought Relief Pumping Plant and Keechelus Reservoir-to-Kachess Reservoir Conveyance project (U.S. Bureau of Reclamation, 2018).

3.0 Project Water Needs and General Mitigation Strategy

3.1 Estimated I-90 Project Water Needs

Based on historic construction demand, the estimated average annual water need is 30 acre-feet per year for the next ten years to complete the I-90 Project. This includes a peak need of 40,000 gallons per day or 5 ac-ft. for the entire peak month. This translates to a peak daily average flow of 0.08 cubic feet per second (cfs). This analysis assumes the entire annual amount will be used either near Easton or near Stampede Pass, depending on construction activities and locations.

	May	June	July	August	September	October	November	TOTAL
Monthly water needs (Acre-feet)	3	5	5	5	5	5	2	30

Table 1 Estimated Water Needs for the Project

The remaining phases of the I-90 Project are from the I-90 Stampede Pass Interchange (Milepost 62) to the community of Easton (Milepost 70) with construction starting in fall 2020 or spring 2021 through fall 2035. Diversion from Lake Keechelus will not be accessible upon requiring WSDOT to secure new water sources closer to the construction project. The intent of this report is to identify and determine feasibility and any potential impairment issues of potential locations for temporary water withdrawal or diversion points using WSDOT's water right claim as mitigation. Proximity of the water source with the construction limits is an important factor. One example of a location close to I-90 near Easton would be a temporary surface water withdraw at Kachess River or a well at WSDOT's Easton median stockpile site to serve a six-mile section of the project starting in 2020 and ending in 2030. After that, the final three mile phase between Amabilis Mountain and Stampede Pass will occur, prompting a need for a diversion at the Yakima River bridge crossing on Road 5400 and/or a well at Crystal Springs Sno-park during the 2025-2035 construction years.

3.2 WSDOT Water Right Mitigation Strategy

This section describes how WSDOT will mitigate the impacts the proposed water withdrawals may have on downstream water rights in the Yakima basin. The availability of water is vital to WSDOT for constructing, maintaining and operating the state's transportation system. Over the years the availability of water has become more challenging to obtain and permit in parts of Washington State and especially in upper Kittitas County.

In 2008, WSDOT began the process of acquiring a reliable source of water for highway construction, maintenance and operational requirements, specifically the Interstate 90 Snoqualmie Pass East Project in Kittitas County. In 2009, WSDOT acquired the following water right claim as a construction water supply source for this 15-mile corridor project:

Yakima River Basin - Claim #00366, Subbasin 09, Wilson Creek. Priority date of 5/24/1884. Total 350 acre/feet/year to seasonally irrigate 35 acres. Location near Interstate-90 /Ellensburg

WSDOT temporarily placed the claim in the State Trust Water Right Program through 2019 (See Report of Examination No. CS4-00366CTCLsb9@1). This approval included a temporary change of the purpose from irrigation to instream flow and mitigation of new water uses. Ecology determined that the consumptive use quantity for this claim was 113 acre-feet/year. As part of the temporary changes to this water right, WSDOT and Ecology entered into an agreement that defined uses, conditions and mitigation. The temporary water right decision also allows WSDOT to participate in Ecology's agreement with the US Bureau of Reclamation (USBR) to assign, store and deliver up to 1,000 acre feet (consisting of one or more water rights) in Keechelus Lake to mitigate for partial or year round periods of downstream water uses outside of normal water storage schedule. (See Ecology/US Bureau of Reclamation (USBR) Exchange Contract No. 09XX101700 (January 2009)

This mitigation strategy offsets impacts or impairment to other water rights, Total Water Supply Availability, instream flows, and USBR target flows. It also requires the USBR to store and release an equivalent quantity of water to offset approved downstream uses in the Yakima Basin.

Since 2010, WSDOT has diverted water from Keechelus Lake for construction water supply (See Ecology Temporary Authorization #S4-35746). In 2018, WSDOT filed a permanent change (See CS4-00366CTCLsb9@2) with Ecology to the purpose and place of use that includes a permanent trust donation to allow WSDOT to continue this temporary use for a temporary construction water supply and also for other temporary or permanent mitigated water uses. Specifically these uses include:

- Temporary surface water diversions along Kachess and Yakima River to serve construction of the remainder of the I-90 Project
- Temporary well at the Easton Crystal Springs Sno-park stockpile sites to serve as a construction water source. If made permanent in the future, the wells could serve as an industrial water (non-domestic) for maintenance purposes at these facility sites
- Temporary water supplies for other highway construction projects
- Permanent new, additive water rights for Indian John Safety Rest Area water needs
- Permanent other uses (e.g. water supplies for rest areas and maintenance sheds within the entire Yakima Basin to the confluence of the Columbia River and downstream to the Pacific Ocean)

4.0 Regional Hydrogeology

4.1 Geology of the Yakima and Kachess Valleys

The Yakima and Kachess rivers flow through valleys defined by ridges of Naches formation volcanic rocks mixed with interbedded sandstone, siltstone, and shale (Figure 2). The Naches formation rocks are underlain by Easton formation metamorphic rocks (U.S. Bureau of Reclamation, 2018).

The valley floors are covered by alluvium composed of silt, sand, gravel, cobbles, and boulders deposited by the Yakima and Kachess rivers. Immediately below the Keechelus and Kachess dams the alluvium is bordered by sloping terraces of alpine glacial drift. These terraces sit below the terminal moraines that formed the lakes during glacial advances, and consist of highly variable glaciolacustrine, till, outwash, and ice-contact deposits.

4.2 Aquifers in the Project Area

The Yakima River alluvium contains a water table aquifer that provides the shallowest and most readily-available groundwater source in the region. Water levels in this aquifer are closely associated with Yakima River levels, and wells tapping this aquifer are likely to draw a portion of their flow from the river.

Coarse glacial outwash deposits below the Kachess dam/moraine also form a productive aquifer. This is confined in some locations by overlying glacial till and other dense moraine deposits. This aquifer is partially fed by seepage that passes through the Kachess dam and flows down the river valley (U.S. Bureau of Reclamation, 2018). Wells on the Lake Easton shore and in subdivisions just below the dam tap this aquifer.

The glacial drift terraces at the Crystal Springs Sno Park and Easton stockpile sites are composed of clay layers or dense silty sands and gravels mixed with cobbles and boulders. The water table in the silty sands and gravels is highly seasonal and drops rapidly in the summer. Some of the shallower wells on these terraces tap layers of coarse gravels that underlie the dense silty sands, but these coarse layers are patchy and do not appear to form a continuous confined aquifer. Most wells on the terraces drill a hundred feet or more to tap water found in fractured bedrock beneath the glacial material. Wells on adjacent bedrock ridges are also very deep and depend on locally productive sandstone and fractured volcanic bedrock.

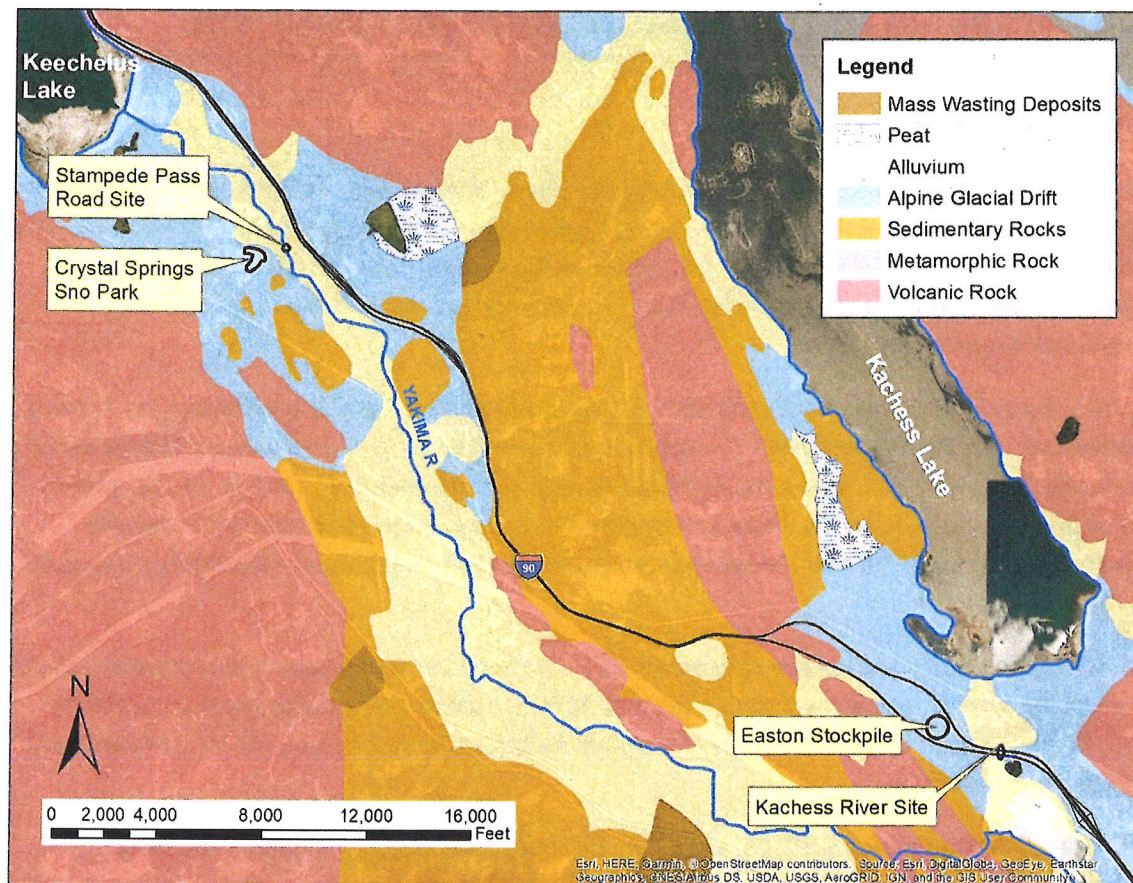


Figure 2. Surficial geology in the project corridor.

5.0 Analysis of the Easton Stockpile Well Site

5.1 Geology and Soils

Figures 3 and 4 show surficial geology, LiDAR topography, and water wells near the Easton Stockpile site. The Easton Stockpile Site is located on a terrace of alpine glacial drift deposited below the Kachess Lake moraine. The terrace sits at about 40 to 50 feet above the Kachess River floodplain. Soils at the site consist of Kachess gravelly ashy sandy loam, a deep, well-drained soil formed in glacial till over glaciofluvial deposits.

Figure 5 shows locations of WSDOT and other borings that border the site as identified by the Ecology Washington State Well Report Viewer and other databases. Note wells in the Ecology database are only located to the nearest quarter-quarter section, and locations of these shown on Figures 3, 4, and 5 may not be precise. In particular, the water well identified by Ecology on the stockpile site is probably actually located east of I90 near the Lake Easton Estates subdivision (based on the narrative description on the well log report).

WSDOT drilled 6 borings in the stockpile area in 2011. Holes P1 and P3 are within the potential well site. P1 encountered silty sand and gravel to a depth of 20 feet, underlain by basaltic andesite rock to 40 feet. P3 encountered silty sand to 6.5 feet underlain by sandstone to 21.5 feet. Water levels were not recorded for these holes.

2011 Borings just to the north (P2, P5, and P6) found silty sand and gravel to depths of 9 to 20 feet, underlain by either sandstone or dense silty sand and gravel mixed with clay.

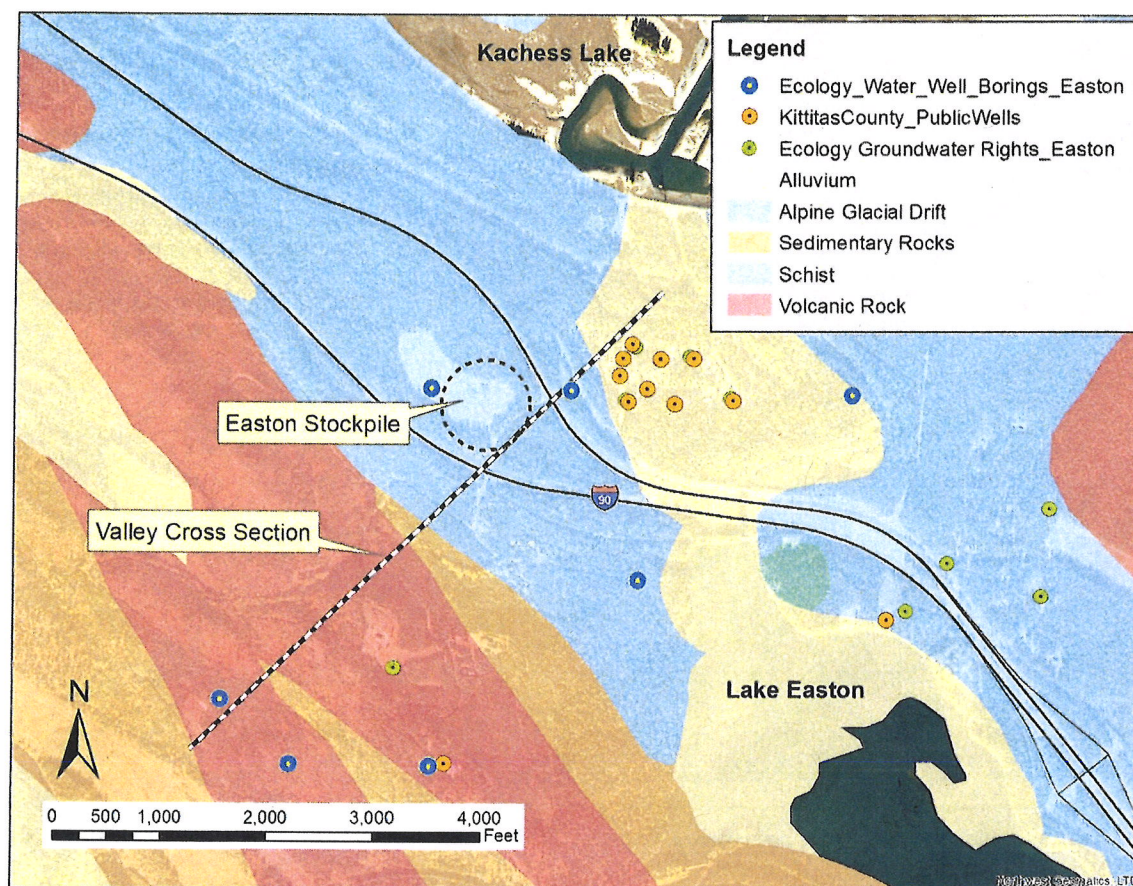


Figure 3. Surficial geology and water well locations near the Easton stockpile site.

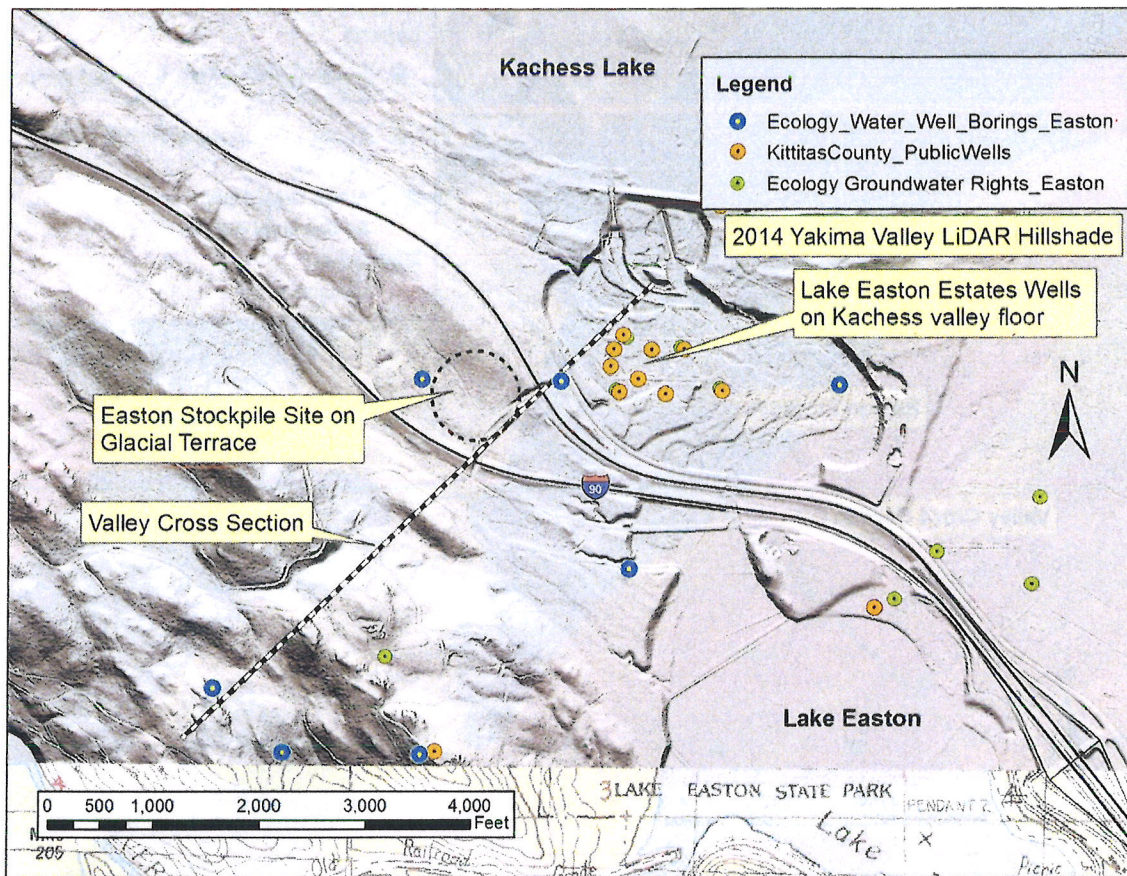


Figure 4. LiDAR topography and water wells near the Easton stockpile site.

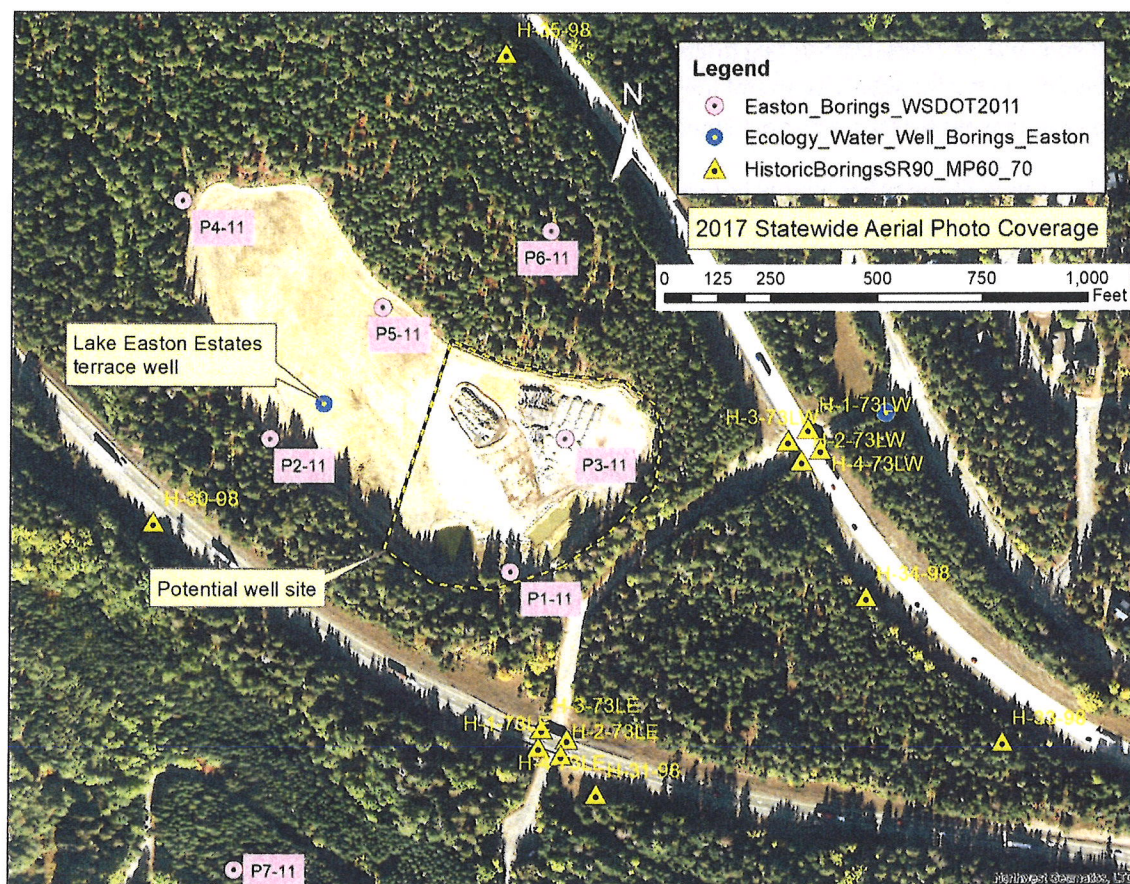


Figure 5. Locations of borings bordering the Easton stockpile site.

5.2 Aquifers and Likely Water Sources

WSDOT recorded water levels from 2011 to 2013 in holes P2 and P6 just north of the potential well site. The data show water rising to a maximum level in the winter 6 to 9 feet below ground. Over the course of the dry season water levels dropped steadily to the bottom of the upper silty sand and gravel layer at depths of 18 to 24 feet. This indicates there is a shallow unconfined aquifer in the silty sands and gravels that overlie compacted glacial sediments and bedrock at a typical depth of about 20 feet. This water table aquifer is probably not very productive, since water levels drop steadily after the end of the snowmelt/rainy season. No nearby wells tap this water table aquifer.

Table 2 lists nearby wells identified in the Ecology database as water wells, and Figure 6 shows these wells on a topographic cross section of the valley. Figures 3 and 4 show well locations. The Ecology well log database shows only one well in the same quarter-quarter section as the site. This well is listed as part of the Lake Easton Estates, a subdivision located about 900 feet east of the site on the other side of I90. This well has a boring profile that is consistent with the Easton Stockpile site's glacial terrace geology. The boring log describes 78 feet of boulder, silty sand, gravel, and clay overlying sandstone bedrock to a depth of 240 feet. The well is cased in the top 140 feet, and is therefore tapping water that

enters from sandstone in the uncased portion of the hole between 140 and 240 feet depth. The static water level was not measured during drilling. This well is not included in the active wells mapped by Kittitas County for the subdivision, and may not be active since it is less productive than other Lake Easton Estate wells that tap a distinct aquifer in gravels on the Kachess River valley floor.

Based on this well and other nearby borings, the most reliable and steady groundwater under the stockpile site will most likely be found in highly variable pockets of fractured bedrock at a depth of around 140 feet. Shallower water is available in a water table aquifer that sits in unconsolidated sediments overlying bedrock, but this seasonal aquifer is probably not sufficiently productive for summer irrigation.

5.3 Potential Impacts to Nearby Wells

The nearest water wells are all Group B public water sources for the Lake Easton Estates subdivision. The active wells identified by Kittitas County are located on the Kachess River valley floor at least 1000 feet east of the site, and tap a highly productive unconfined aquifer made up of glacial outwash gravel. Borings collect by the Bureau of Reclamation show this aquifer is up to 90 feet thick and is underlain by sandstone bedrock (U.S. Bureau of Reclamation, 2018). It is directly connected to the Kachess River and is at least partially fed by seepage under the Kachess dam. This aquifer follows the river valley floor and does not extend beneath the terrace that contains the Easton Stockpile site. A well drilled into variable fractured bedrock under the stockpile site will therefore not affect water levels in this aquifer.

All other nearby wells on this side of the Kachess River are on the ridges southwest of the site, and tap groundwater found at variable depths in fractured basalt or granite (Figure 6). The closest of these wells is about 2000 feet from the project site. Groundwater in these variable fractured layers on the ridge does not form a distinct and connected aquifer, and is generally higher than the groundwater found on the site. A well drilled at the stockpile site will therefore not likely affect water levels on these ridge wells.

Owner	Location	Type	Depth (ft)	Casing	Water Producing Formation
HADLEY HACKNEY	Terrace just NW of WSDOT site	?	240	Top 140', no screen	Sandstone at bottom of casing
HADLEY HACKNEY	Lake Easton Estates	Group B	100	Top 100', no screen	Continuous gravel layer
HADLEY HACKNEY	Lake Easton Estates	Group B	100	Top 80', no screen	Continuous gravel layer
HADLEY HACKNEY	Lake Easton Estates	Group B	100	Top 80', no screen	Continuous gravel layer
HADLEY HACKNEY	Lake Easton Estates	Group B	100	Top 100', no screen	Continuous gravel layer
HOWARD KNOTT	Ridge SW of site	Group B	457	Cased to bottom, perforations lower 20'	Broken basalt at bottom
MICHAEL BUNDRICK	Ridge SW of site	Private	204	Cased to bottom, perforations lower 84'	Sandstone
PATRICK DEHUFF	Ridge SW of site	Private	179	Cased to bottom, perforations lower 80'	Broken granite
Easton Farms	Ridge SW of site	Private	NA	NA	NA
BROOKS TUTTLE	Ridge SW of site	Private	374	Cased to bottom, perforations lower 100'	Broken granite
VANG CHANG VANG	Ridge SW of site	Private	204	Cased to bottom, perforations lower 64'	Variable rock

Table 2 Summary of water wells located near the Easton stockpile site

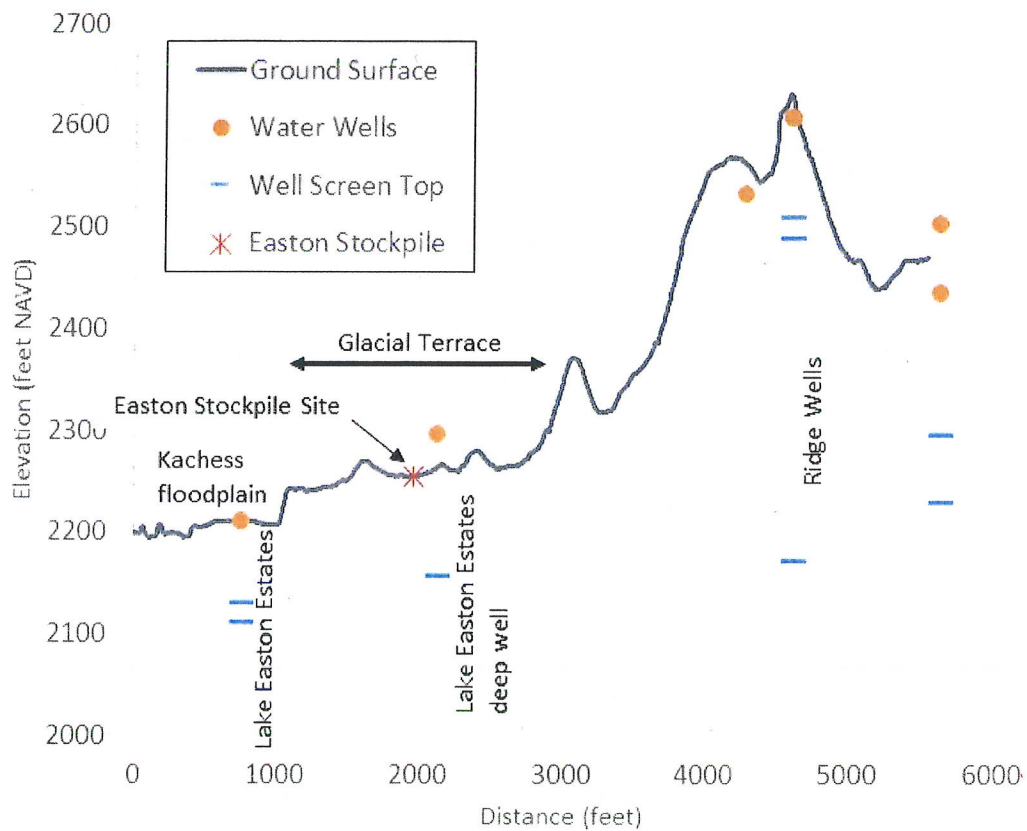


Figure 6. Valley cross section through the Easton stockpile site and nearby wells.

6.0 Analysis of the Crystal Springs Sno Park Well Site

6.1 Geology and Soils

Figures 7 and 8 show surficial geology, LiDAR topography, and water wells near the Crystal Springs Sno Park site. The site is located on a terrace of alpine glacial drift on the south side of the Yakima River valley. The terrace sits at about 30 to 40 feet above the Yakima River floodplain. NRCS maps soils at the site as modified pit soils surrounded by glacially-derived Kachess gravelly ashy sandy loam. The adjacent Yakima River floodplain is covered by coarse Fluvaquent soils.

The Ecology well log database shows three WSDOT borings in the quarter-quarter section that contains the Sno Park site. These range in depth from 17 to 26-feet, and generally encountered either very dense silty gravel with sand, or dense silty sand with gravel.

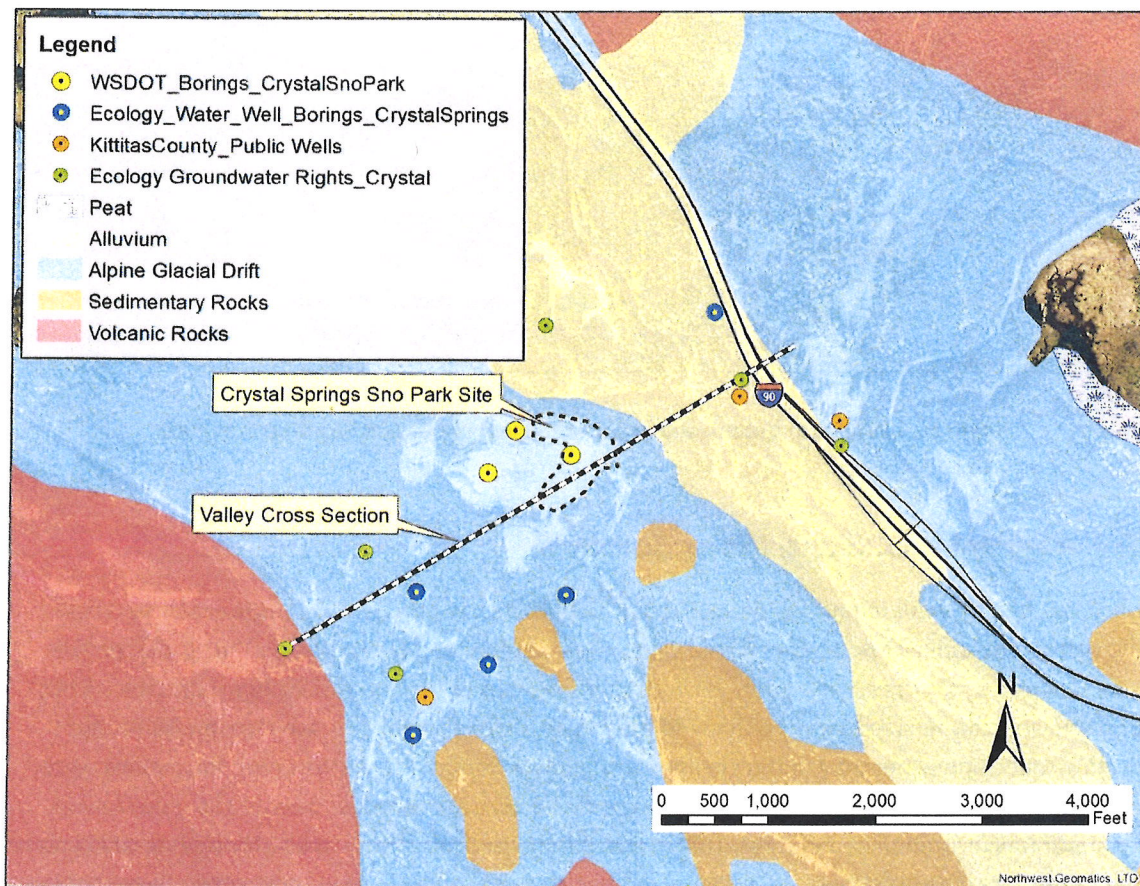


Figure 7. Surficial geology and water well locations near the Crystal Springs Sno Park.

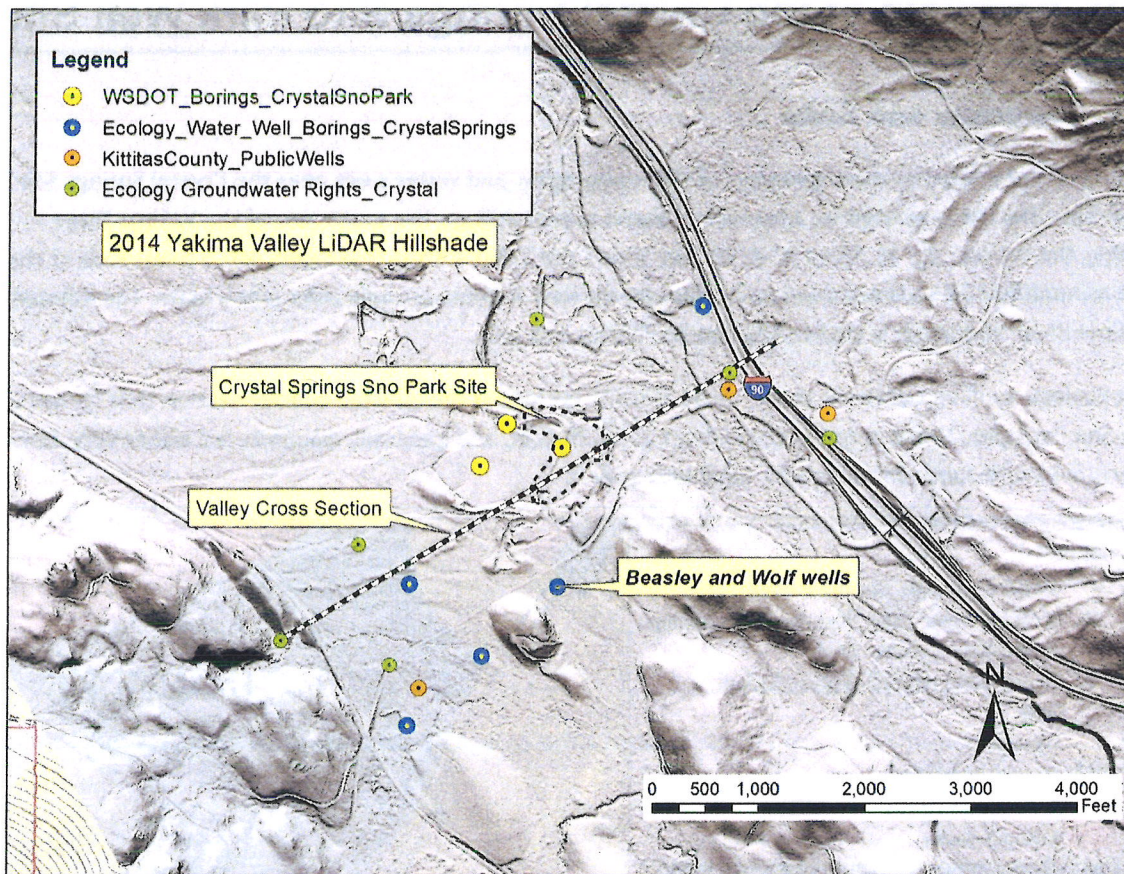


Figure 8. LIDAR topography and water wells near the Crystal Springs Sno Park.

6.2 Aquifers and Likely Water Sources

Table 3 lists nearby wells identified in the Ecology database as water wells, and Figure 9 shows these wells on a topographic cross section of the valley. Nine water wells are located on the glacial terrace upslope/southwest of the site, but only six have boring logs available on the Ecology database. All but one of the wells in the area are more than 200 feet deep. Two of these are cased to only 40-45 feet indicating that some water may enter the hole at shallower depths. These shallower formations were apparently not highly productive, so the wells were finished to allow water to enter the hole from a large depth range extending more than 160 feet below the bottom of the casing through variable layers of fractured rock. One well however did encounter a productive sand, gravel, and cobble layer at about 60-foot depth.

These data indicate there is no continuous aquifer under the site, but water can be found at depths starting around 40 to 60 feet in variable fractured rock and coarse sediment layers. The well will most likely need to be at least 200 feet deep to be productive.

6.3 Potential Impacts to Nearby Wells

The Beasley and Wolf wells are the closest to the site, in a quarter-quarter section whose center is about 800 feet from the southern edge of the project site (Figure 8). Aerial photos shows home sites in this area 1000 to 1200 feet from the site boundary. Because water on this terrace is found in discontinuous fractured rocks, it is not likely that a well drilled on the project site would directly impact these wells.

The USFS and Kachess Lodge have wells on the valley floor on the opposite side of the river about 1200 feet or more from the site boundary. These tap a productive alluvial aquifer that is directly connected to the Yakima River. This connection to the Yakima River minimizes any potential impacts from a well drilled in variable rock at the Sno Park site.

Owner	Location	Type	Depth (ft)	Casing	Water Producing Formation
CLE ELUM RANGER DIST	Valley floor on opposite side of river	Group A	71	Cased to screen in bottom 10 feet	Sand and gravel
Kachess Lodge	Valley floor on opposite side of river	Group B	NA	NA	NA
Nielsen	On terrace upslope of site	Group B	35	NA	NA
SONS OF NORWAY	On terrace upslope of site	Group B	200	Casing to 40 feet	Variable gray rock
BILL BEASLEY	On terrace upslope of site	Private	370	Casing to 45 feet	Variable rock
Casper W Wolf	On terrace upslope of site	Private	440	Cased to perforations in bottom 40'	Shale
LARRY OCONNOR	On terrace upslope of site	Private	80	Cased to 78 feet	sand, gravel, cobbles in bottom 20 feet
Hinterland Holdings	On terrace upslope of site	Private	NA	NA	NA
Kraft	On terrace upslope of site	Private	NA	NA	NA
RHETT A MCCORMICK	On terrace upslope of site	Private	400	Cased to perforations in bottom 40'	Decomposed basalt in bottom layer
RON GIARD	On terrace upslope of site	Private	400	Cased to perforations in bottom 20'	Shale and sandstone in bottom layers

Table 3 Summary of water wells located near the Crystal Springs Sno Park

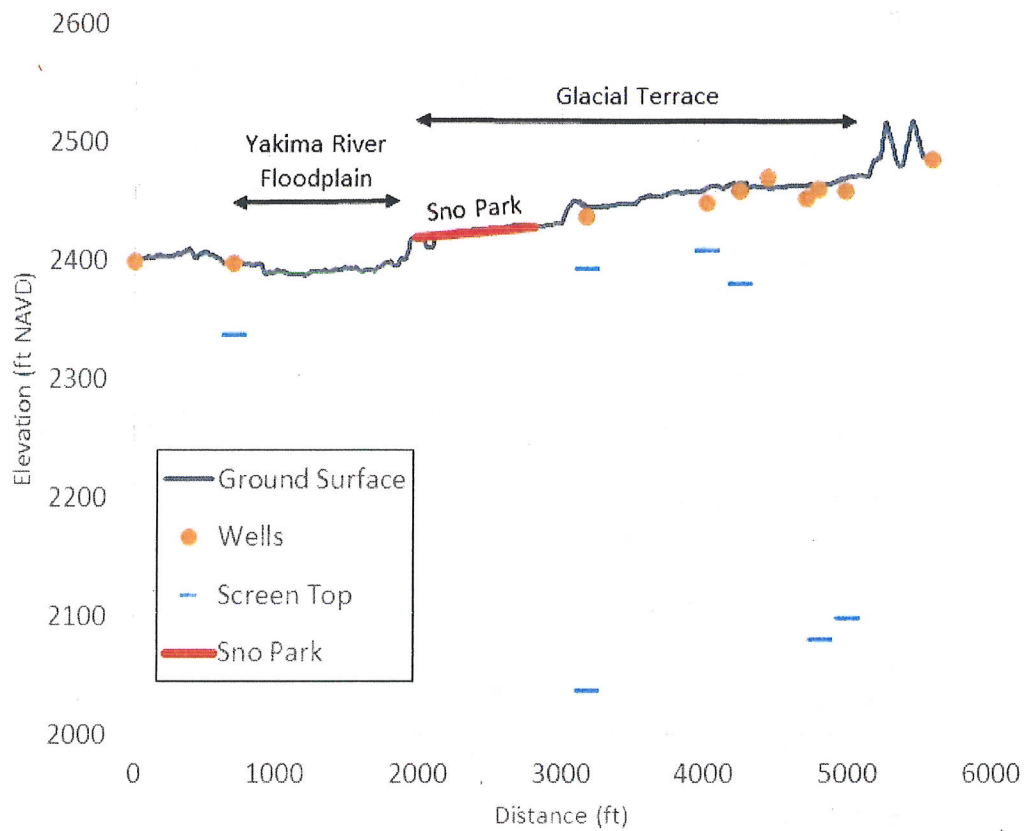


Figure 9. Valley cross section through the Crystal Springs Sno Park and nearby wells.

7.0 Surface Water Withdrawal Sites

7.1 Seasonal Flows in the Yakima and Kachess Rivers

Flows in these reaches of the Yakima and Kachess rivers are driven by releases from Keechelus and Kachess Reservoirs, and are described in the Supplemental Draft Environmental Impacts Statement (EIS) for the Kachess Drought Relief Pumping Plant and Keechelus Reservoir-to-Kachess Reservoir Conveyance project (U.S. Bureau of Reclamation, 2018). This Supplemental Draft EIS used flow data for November 1998 through October 2003 to characterize river flows in drought, average, and wet years. Modeling was used to develop hydrographs that reflect how modern reservoir operation rules would have affected river flows during this period. This allows project impacts to be assessed for river conditions that are likely to occur in the near future. The modeled period includes the critical 2001 drought year.

Figures 10 and 11 show the modeled hydrographs for the Yakima River below Crystal Springs and the Kachess River below Kachess dam. The reservoirs store water during the winter, spring, and early summer and release in the summer and early fall for irrigation. Yakima River flows are greatest during irrigation releases in July and August, with a typical range of 500 to 1200 cfs. Keechelus Reservoir releases are reduced in September and October to 80 to 120 cfs to minimize scour of salmon redds in the Yakima River above Easton.

Kachess River flows are lowest in May and June when the river drops to as low as 30 cfs. Flows increase in the July-August early irrigation season to a range of about 300 to 600 cfs. Kachess River releases are further increased in September and October to more than 1200 cfs to continue meeting irrigation demands in the lower Yakima Basin when Keechelus releases are reduced to protect salmon redds. This reservoir operation shift is referred to as the “mini flip-flop”.

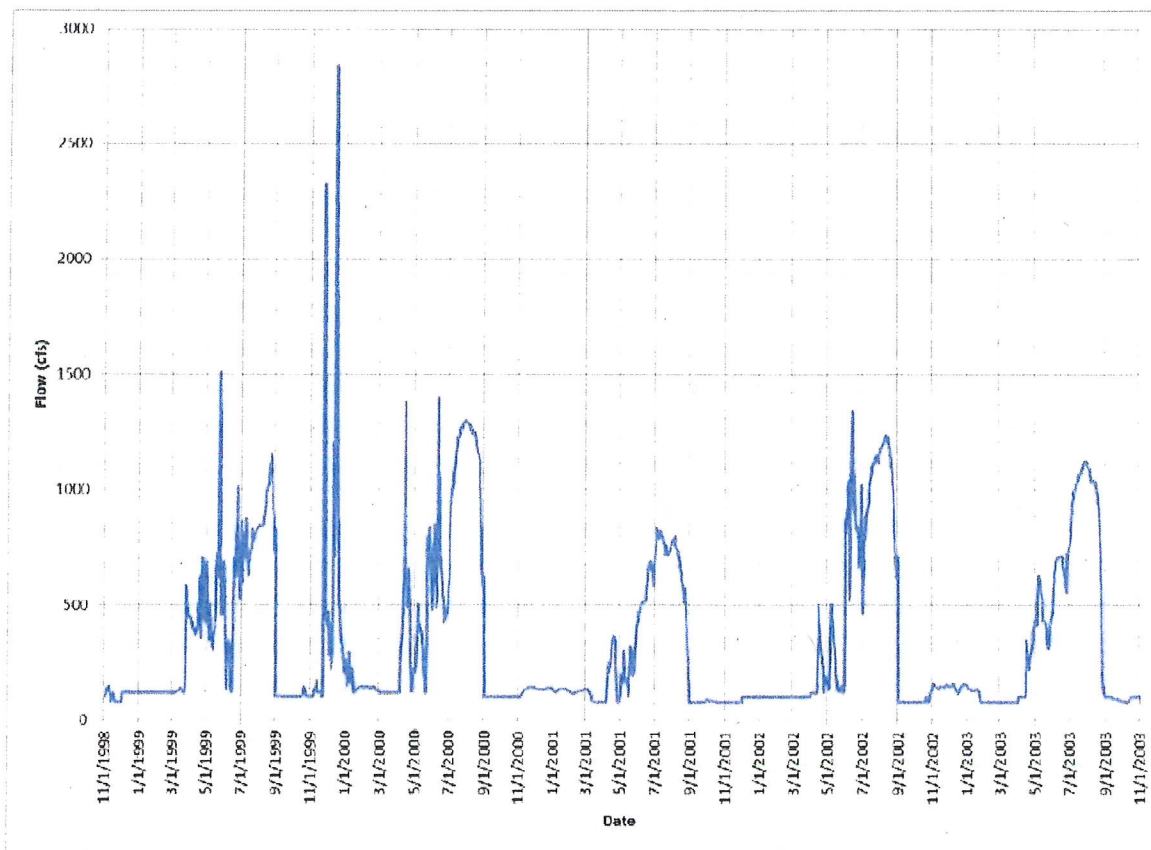


Figure 10. Modeled flows in the Yakima River below Crystal Springs (USBR, 2018).

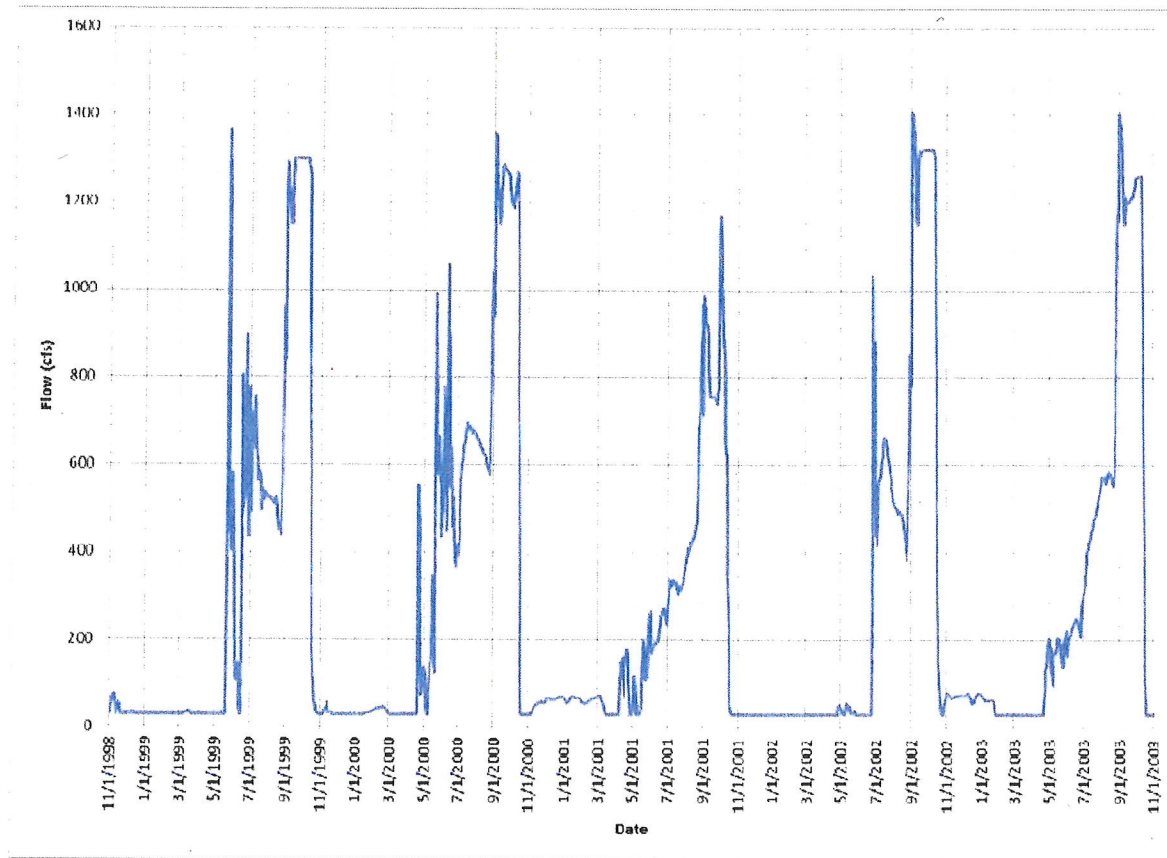


Figure 11. Modeled flows in the Kachess River below Kachess Dam (USBR, 2018).

7.2 Kachess River at the I-90 Bridge

The project will need a peak daily average flow of about 0.08 cfs from June through October to meet water needs for construction activities and for mitigation sites and plant establishment. This would be less than 0.3 percent of the minimum Kachess River flow of 30 cfs in June. A surface water withdrawal in this area will therefore have minimal impact on local river water levels and alluvial water table elevations.

Figure 12 shows water rights listed in the Dept. of Ecology's Water Resources Explorer database in the immediate vicinity of the potential withdrawal site. No existing surface water rights are shown on the Kachess River near the potential withdrawal site. The Bureau of Reclamation, Cascade Irrigation District, and Kittitas Reclamation District have water rights for the Yakima River at the outlet of Lake Easton. The minor loss of water available to these and other downstream surface rights in the basin would be offset by the mitigation strategy described in Section 3.2.

Groundwater rights for the Lake Easton Estates and other wells along Lake Easton tap aquifers that are connected to the river. The proposed withdrawal would have minimal impacts on water levels in the river and adjacent alluvial aquifers, and would therefore not impair these nearby groundwater rights.

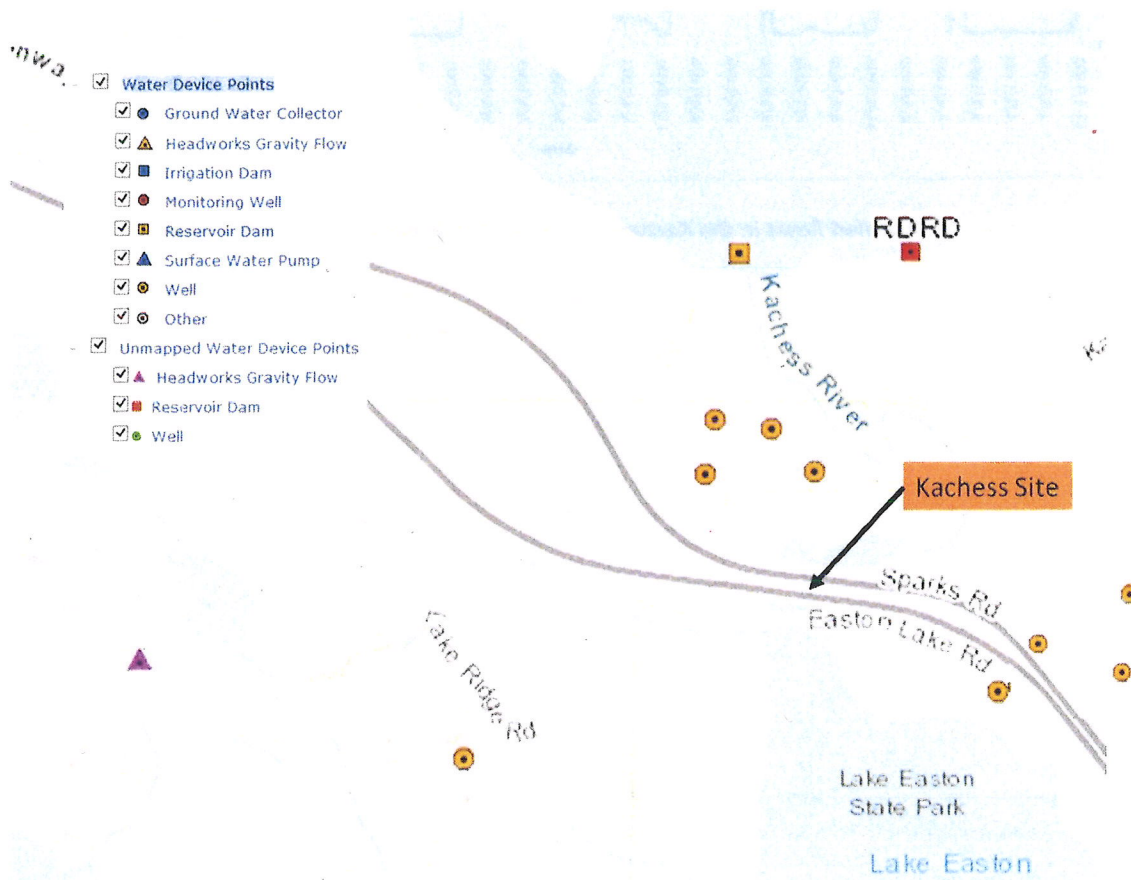


Figure 12. Water rights in the Ecology Water Resources Explorer database for the Kachess area.

7.3 Yakima River at the Stampede Pass Road Bridge

The project will need a peak daily average flow of about 0.08 cfs from June through October to meet irrigation demands for mitigation sites and plantings in this area. This would be about 0.1 percent of the minimum Yakima River flow of 80 cfs in September and October. A surface water withdrawal in this area will therefore have minimal impact on local river water levels and alluvial water table elevations.

Figure 13 shows water rights listed in the Dept. of Ecology's Water Resources Explorer database in the immediate vicinity of the potential withdrawal site. No existing surface water rights are shown near the potential withdrawal site. The proposed withdrawal would have minimal impacts on water levels in the river and adjacent alluvial aquifers, and would therefore not impair nearby groundwater rights. The minor loss of water available to downstream surface rights in the basin would be offset by the mitigation strategy described in Section 3.

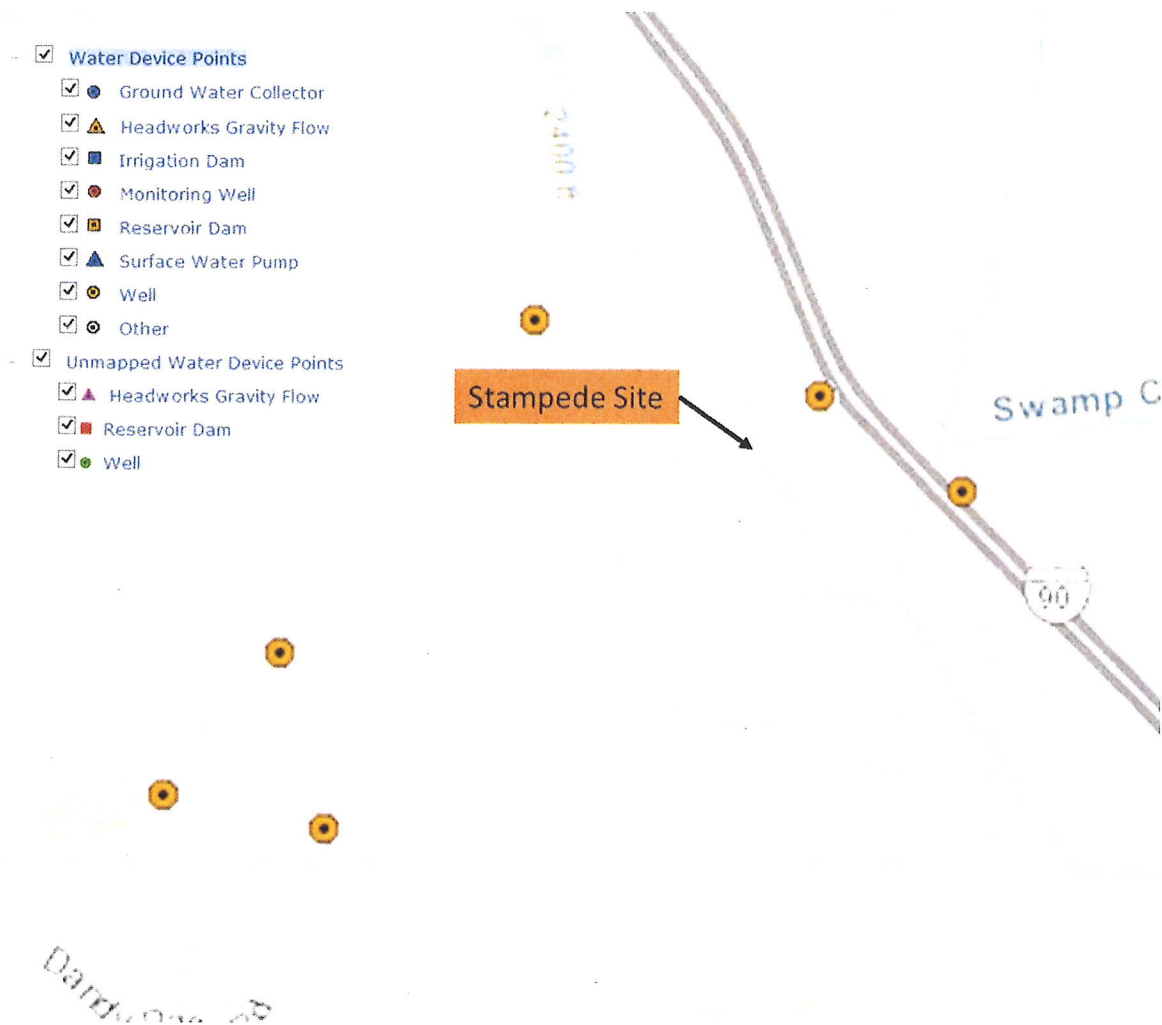


Figure 13. Water rights in the Ecology Water Resources Explorer database for the Stampede Pass area.

8.0 Conclusions and Recommendations

The proposed water withdrawals are small relative to river flow rates, and will have minimal impact on river water levels and water availability for nearby surface and groundwater rights. The small impact on total water availability in the basin will be offset by the mitigation strategy described in Section 3.

The two potential well sites are located on glacial terraces. Wells on these sites would draw water from discontinuous lenses of coarse glacial outwash deposits and/or fractured bedrock. The nearest existing wells are about 1000 feet from the site boundaries. Domestic wells on these terraces are typically more than 200 feet deep and tap water found in variable fractured bedrock and sandstone. These pockets of water have little connectivity to nearby alluvial aquifers, so impacts to local wells are unlikely. However, this also means that wells at these sites may have to be more than 200 feet deep to provide sufficient water for summer irrigation, and there is risk in the highly variable geology that the drilled wells will not be productive. The surface water sites will likely provide a more cost effective and reliable water source.

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