

SELAH MOXEE IRRIGATION DISTRICT  
BLACK ROCK AREA WATER MARKETING  
STRATEGY

Selah-Moxee Irrigation District

113 East Moxee Ave

Moxee, WA 98936

Project Manager: Nathan Draper

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# 1 Technical Proposal and Evaluation Criteria

## 1.1 Executive summary

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Date: July, 13, 2018

Applicant: Selah Moxee Irrigation District

City, County, State: Moxee, Yakima County, Washington

This proposal seeks to better understand an emerging water market within the Yakima Basin, and the potential for source substitution in areas of declining groundwater. Unlike the Upper Yakima Basin water markets, which arose in response to regulatory pressures for new development, this potential market is developing because of changes in the physical availability of water. SMID would like to investigate developing a water market, initially seeded with SMID's Yakima River water rights, to provide service to the Black Rock Area. Water users in this area rely on groundwater, which comes at substantial pumping costs and is currently declining by as much as 13 feet per year for the last several decades. Without a source substitution project, eventual curtailment of existing users and significant land use changes are inevitable. Because of the presence of domestic and group domestic users in the area, there is the potential for a public health crisis if a solution is not developed for existing groundwater users.

Estimated Time to Complete: 2-years

Estimated Completion Date: September 2020

SMID is partially served by US Bureau of Reclamation (Reclamation) Yakima Basin Project water, which is stored by Reclamation in five headwater reservoirs and managed to meet demand of Project water rights. SMID has also received Reclamation funding to develop and update conservation planning documents.

## 1.2 Background Data

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Selah Moxee Irrigation District (SMID) serves 2,142 customers and 7,740 acres of agricultural lands in south-central Washington. SMID's largest crop produced is hops, serving thousands of acres within Yakima County's premier hop growing region. The second largest crop produced within the SMID is hay, with fruit trees, and residential outdoor irrigation also within the District.

SMID has experienced urbanization within its District, and is exploring opportunities to serve new lands east of their current service area in the Black Rock area (Figure 1). The Black Rock area is devoid of perennial surface water. Water users in this area rely on groundwater, which comes at substantial pumping costs and is currently declining by as much as 13 feet per year for the last several decades. Within the Black Rock area, the primary water use is agricultural, with hops, orchards, vegetable crops, and dairy use within the area.

The Yakima River serves as SMID’s water source. SMID has water right authority under six separate water right certificates that have been affirmed in the *Ecology v. James Acquavella, et al.* adjudication (Table 1).

**Table 1. SMID Water Rights**

Water Right Number	Priority Date	Purpose of Use	Acres	Qi (cfs)	Qa (afy)
S4-84590-J	11/9/1884	IR, FP, ST	5,393.63	54.0	17,970.5
S4-84591-J	11/9/1900	IR, FP, ST	5,393.63	18.0	5,990.2
S4-84592-J	5/10/1905	IR	5,393.63	58.0	1,107.0
S4-84593-J	5/10/1905	IR, FP, ST	5,393.63	14.6	4,281.3
S4-84594-J	1/26/1887	IR, FP, ST	2,001.94	38.0	13,781.0
S4-84595-J	5/10/1905	IR	345.00	3.1	959.4

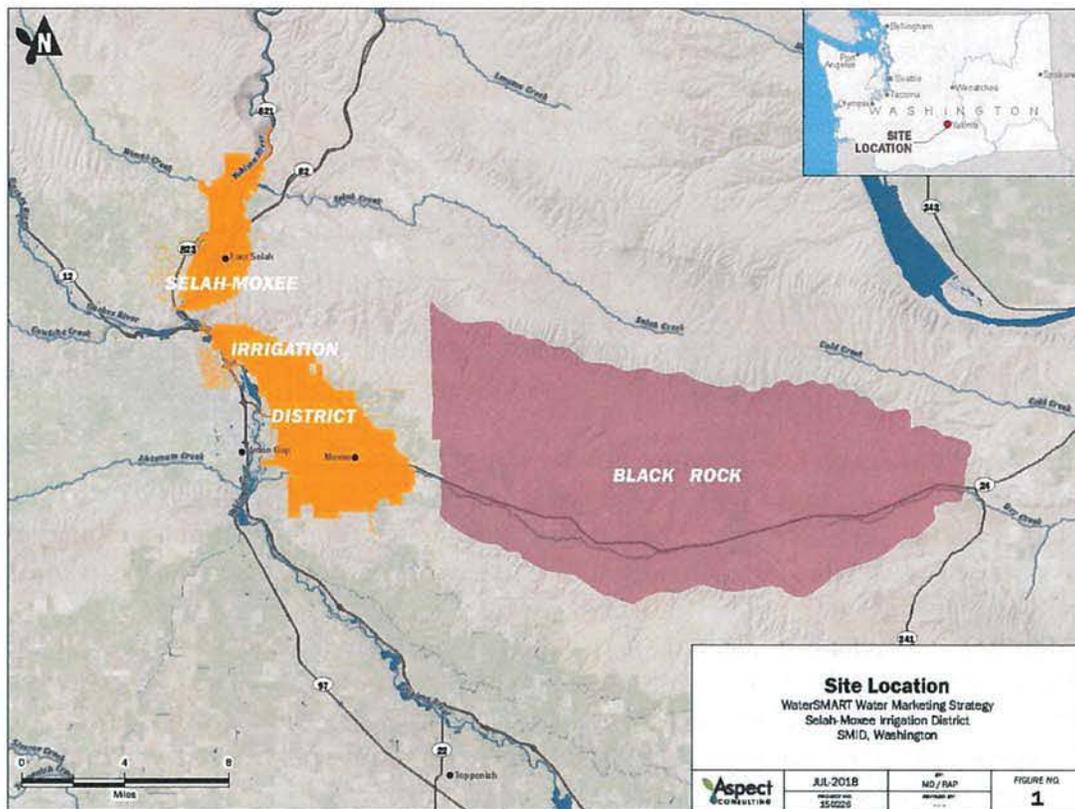
Note: Qi = instantaneous quantity; Qa = Annual Quantity; IR = Irrigation; FP = Frost Protection; ST = Stock water

SMID is partially served by US Bureau of Reclamation (Reclamation) Yakima Basin Project water, which is stored by Reclamation in five headwater reservoirs and managed to meet demand of Project water rights. SMID has also received Reclamation funding to develop and update conservation planning documents.

### 1.3 Project Location

The Black Rock Area Water Marketing Strategy is focused on lands located in southcentral Washington, east of the City of Yakima (Figure 1). The project latitude is 46° 30’ 55” North and longitude is 120° 11’ 17” West.

**Figure 1. Area Map**



## 1.4 Project Description

The proposed project focuses on the Yakima Basin in south-central Washington, and specifically the Yakima Valley upstream of the Parker Gage. The Yakima Basin has an imbalance of supply and demand, as demonstrated by agricultural pro-rationing and curtailment in water-short years, and an active agriculture-to-domestic water market in the Upper Yakima Basin.

This proposal seeks to better understand an emerging water market within the Yakima Basin—source substitution in areas of declining groundwater. Unlike the Upper Yakima Basin water markets, which arose in response to regulatory pressures, this potential market is developing because of changes in the physical availability of water. SMID would like to investigate developing a water supply and market strategy, initially seeded with SMID’s Yakima River water rights, to provide service to the Black Rock area. This application is seeking funds under Funding Group I to investigate the following:

- Demand for surface water service in the Black Rock area;
- Potential market barriers;
- Willingness-to-pay and costs of implementing a water market program;

- Regulatory framework for water markets in the region, including institutional requirements and potential water market strategies;
- Water right permitting requirements and mechanisms;
- Engineering requirements to leverage existing infrastructure to serve new areas currently irrigated with groundwater;
- Surface and groundwater flow from potential new service area to Yakima River to ensure water budget neutrality; and,
- Opportunities to coordinate this work with overall Yakima Basin Integrated Plan water supply development goals.

This work will culminate in a water market strategy document that will detail SMID’s water market structure including implementation and operation.

**Element 1. Outreach and Partnership Building**

At the outset of this project, SMID will work to develop an outreach and communication plan to ensure input for basin stakeholders and potential water market customers. SMID will conduct outreach meetings with stakeholders in the basin including the Yakama Nation, Department of Ecology, Department of Fish and Wildlife, and Bureau of Reclamation. Additionally, SMID will engage with current SMID customers and potential customers through educational brochures, workshops, and surveys on how surplus water from the District could be used. Finally, SMID will contact groundwater users in the Black Rock area to determine their interest in being served in the future under a new water market strategy.

The overall goal of the communication strategy is three-fold. To provide context and background on water banking and the potential issues regarding water supply in the Black Rock Area, gain broad support from stakeholders in the basin, and obtain information that will help shape the Black Rock Area Water Marketing Strategy, including:

- Concerns, interests, and preferences of customers, water users in the Black Rock Area, and basin stakeholders,
- Perceived market barriers
- Demand and types of potential new uses
- Willingness-to-pay

**Element 2. Scoping and Planning Activities**

To develop the water market strategy, SMID will work closely with stakeholders to develop the scope of the water marketing strategy and identify data gaps. To meet the project objectives discussed above, SMID will:

- Research the different bank structures currently operating in Washington State and other western states to determine options and adopt a preferred structure.
- Investigate water market governance, administration and institutional requirements for implementing and managing a water bank.

- Conduct water use audits and water user surveys to determine demand, and quantify demand in consumptive use.
- Verify water market supply. SMID has already conducted a water rights review that included analyzing consumptive use and validity of water rights.
- Evaluate Yakima River Basin water value and pricing and conduct surveys with potential customers to determine willingness-to-pay.
- Determine administrative requirements for developing a water market, including water right transfers and new permitting requirements.
- Determine costs of developing and implementing a water bank, including water right permitting costs for transferring water rights and obtaining water budget neutral permits for new uses.
- Document the economic, social, community, and environmental impacts of potential market.
- Evaluate and determine what infrastructure upgrades may be required to provide service to the Black Rock Area. The Black Rock area is approximately five miles east of the SMID's main canal. SMID will investigate how to provide service to this area and options for managing existing infrastructure to carry additional water to this area..
- Evaluate surface and groundwater flow from potential new service area to Yakima River to ensure water budget neutrality

### **Element 3. Development of a Water Market Strategy**

Elements 1 and 2 will be used to develop the water market strategy (Element 3). The Water Marketing Strategy will include an implementation plan that selects a preferred water market structure and business rules, and provides guidelines on water bank/water market operation and administration, and long-term financial sustainability. More specifically, the water marketing strategy will include:

- The administrative structure and institutional components of the water market.
- How to track transactions, enter into agreements, and transfer water.
- Identify water market participants and their role in the water market.
- Water market prices and costs.
- Water rights to be used and permitting requirements for bank operation.
- Metrics to evaluate water marketing success, including monitoring water budget neutrality and impacts on surface and groundwater.

## **1.5 Evaluation Criteria**

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*The evaluation criteria portion of your application should thoroughly address each criterion and subcriterion in the order presented to assist in the complete and accurate evaluation of your proposal.*

### **Criterion A – Water Marketing Benefits (up to 40 points)**

**Explain whether the water market/activity will address a specific water supply shortfall and describe the extent of benefits to different sectors, including agricultural, municipal/industrial, tribal and environmental sectors:**

The Black Rock/Moxee Area is located in the eastern portion of the Yakima Valley, in rural Yakima County. Physical water supply is limited in this area because of a combination of high demand, low recharge, aquifer isolation by faults and folds, and no perennial surface water sources. This combination has resulted in significant and long-term groundwater declines, which if left unchecked will result in significant disruption of water with both public health and safety and commercial implications.

Groundwater is derived from a structurally isolated groundwater basin that lies within the Yakima Fold Belt. Local aquifers are part of the Columbia Plateau Regional Aquifer System, with groundwater declines observed in the Saddle Mountain, Wanapum, and Grande Ronde Basalt aquifer zones. Groundwater declines are greatest in the eastern portion of the Black Rock/Moxee Area, which is isolated from the western portion of the area by the northeast-southwest trending Bird Canyon Fault. As reported in a Department of Ecology (Ecology) groundwater study of the area, groundwater has been declining up to 6 ft/year in the Saddle Mountain unit, 12 ft/year in the Wanapum unit, and 13 ft/year in the Grande Ronde unit through the 1980's (Kirk and Mackie, 1993). More recent study has indicated that these declines have continued to the present (Snyder et al., 2010).

Water use in the Black Rock/Moxee area is primarily agricultural and small, rural domestic uses. Currently, there are 160 water rights and claims within this region, and 57 domestic group systems that do not require a water right (Department of Ecology, WRTS Database, Accessed December 2016). All of these water users depend on declining groundwater and are at risk because of the insecurity of their supply. Future groundwater closures could occur based on the lack of physical availability. Without a source replacement strategy, a future public health crisis could occur, as well as significant economic hardship for existing irrigation, dairy, and other water users. The Black Rock Water Market Strategy will address this water supply shortfall by providing surface water to users in lieu of groundwater use to replace nonpotable irrigation uses (to start) and potentially potable uses for drinking water (if sustainable yield of the aquifers cannot be achieved by removing the most significant demands (irrigation). Expanding on existing infrastructure and water markets as the framework to supply new users, SMID can provide users in the Black Rock Area with Yakima River water that is water budget neutral.

Surface water demand in the Black Rock Area will be determined during Element 2 of the Water Market Analysis.

**Explain how and to what extent the proposed water market or water marketing activities will improve water supply reliability in general in the area upon implementation of the strategy (address all that apply):**

We anticipate that developing the Black Rock Water Market will help sustain the agricultural community in the Black Rock Area and potentially relieve the bulk of water demand on the over-stressed aquifers. This will potentially allow domestic supplies to be sustainable or stretch much further than if a source substitution market

is not developed. A water market in this area will likely delay any regulatory closure on the groundwater body, and reduce potential conflicts over this body of groundwater. Additionally, the Black Rock Water Market could serve as a model of how to use market based reallocation and irrigation district infrastructure to solve issues of declining groundwater throughout Washington State.

**Explain the extent to which the water market/activity will be ready to proceed upon completion of the strategy, addressing each of the following:**

At the conclusion of the Black Rock Water Marketing Strategy, the project will require additional work prior to implementation. To provide water to the Black Rock area, infrastructure upgrades will be required. At the conclusion of this study, next steps would include feasibility, design, and construction of the infrastructure upgrades. Given the infrastructure requirements, we anticipate approximately two-years to implement the marketing strategy upon its completion.

We do not anticipate complex issues related to law, policy, or water right authority. We have previously analyzed our water rights, quantifying the rights, estimated the consumptive use and return flows, and reviewing diversion records and relinquishment risk.

***Criterion B – Level of Stakeholder Support and Involvement (up to 30 points)***

While SMID has not yet engaged with stakeholders who have committed to be involved in the planning process, there is generally strong support for water banking within the Yakima River Basin, as well as a long history of collaboration to solve water management issues. Additionally, SMID has identified and met with stakeholders that have expressed interest and support in the planning process.

Washington State Department of Ecology’s Office of the Columbia River has indicated in meetings it’s support of this type of project and concept.

There is no known opposition to this project at this point. While there are diverse perspectives on water management in the Yakima Basin, we see this project as a proactive solution to an impending water management difficulty. Working with a diverse set of stakeholders should ensure a water banking strategy that is broadly supported.

To begin engaging with stakeholders SMID will initially set up meetings with basin representatives of state agencies with an interest in water management in the Yakima River Basin, specifically the Department of Ecology, Department of Fish and Wildlife, Yakama Nation, Bureau of Reclamation, and other irrigation districts within the basin. SMID will also present the project to the Water Transfer Working Group, which is a voluntary team of agency representatives, water managers, and water users who provide review of proposed water right transfers in the Yakima River Basin. Many stakeholders in the basin participate in this group, so presenting the proposal and receiving comments from them would be an important part of our outreach strategy.

Additionally, we will send out educational brochures to current SMID customers and water users in the Black Rock Area to explain the project and solicit participation in workshops. We hope these workshops will be informative to the public, and bring diverse ideas and opinions to the planning effort that will help inform the development of the water marketing strategy.

***Criterion C – Ability to Meet Program Requirements (up to 20 points)***

The three elements of the water marketing strategy will be addressed within the allotted two years by implementing the following schedules, which includes tasks, milestones, and dates:

Element	Description	Start Date - End Date
0	<b>Develop project workplan</b> , including tasks and subtasks, work schedule, plan for data gap resolution, and roles/responsibilities	September 2018 - November 2018
1	<b>Develop communication and outreach plan and materials</b>	September 2018 – November 2018
1	<b>Stakeholder Meetings</b> including presenting at WTWG, meeting with state agencies, the Yakama Nation, Reclamation, and other area irrigation districts	November 2018 – January 2019
1	<b>Stakeholder Workshops</b> providing information and soliciting feedback from SMID customers and water users in the Black Rock Area	January 2019- January 2019
1	<b>Ongoing outreach</b> with basin stakeholders, including SMID customers and Black Rock Area water users, presenting to interested parties in the basin, and continued meetings and workshops as determined in the communication and outreach plan	January 2019- August 2020
2	<b>Research Supply and Demand</b> using existing data and Black Rock Area water user surveys	February 2019- May 2019
2	<b>Determine water market structure</b> options within Washington State by reviewing existing literature and different models operating in the Yakima River Basin.	February 2019- May 2019
2	<b>Evaluate water rights issues or legal requirements</b> , including legal mechanisms for transferring water within the relevant area, and legal constraints on	February 2019- May 2019

	existing water rights	
2	<b>Determine agreements</b> and contracts needed to operate a water bank and ensure that the water is water budget neutral, including trust water right agreement and requirements to ensure water is protected.	February 2019- May 2019
2	<b>Analyze actual and potential rules</b> and requirements that will govern the implementation of the water market	February 2019- May 2019
2	<b>Evaluate water market administration</b> options, cost, and transaction costs of water marketing	September 2019- December 2019
2	<b>Conduct financial analysis</b> to determine cost of implementing a water market (existing data), participant willingness-to-pay (survey data), and water value (existing data)	September 2019- December 2019
2	Evaluate infrastructure needs to provide water to the Black Rock Area	September 2019- December 2019
2	<b>Evaluate surface water/groundwater movement</b> in the area to determine return flows from the Black Rock Area to the Yakima River to for purposes of determining a neutral water budget	September 2019- December 2019
3	<b>Select Preferred alternative(s)</b> for market structure based in Element 1 and 2 findings	January 2020- March 2020
3	<b>Formulate business rules</b> such as eligibility, trading protocols, rules and requirements, governance, and administrative processes	January 2020- March 2020
3	<b>Develop financial plan</b> for how the market will be funded and financed over time to ensure long-term financial sustainability	April 2020- June 2020
3	<b>Develop monitoring plan</b> for the market including database or system for tracking market activity	April 2020- June 2020
3	<b>Prepare technical report</b> summarizing the Black Rock Water Marketing Strategy based on the work completed under the 3 elements	June 2020- August 2020

Water marketing information and data is relatively available for the region. The Department of Ecology's Office of the Columbia River recently published a review of water market structures and operations within Washington State and in other western states (WSU, 2016). Additionally, the Department of Ecology operates a webpage that includes water market transactional data for water banks throughout Washington State (Ecology, accessed 7/9/2018). These data will help information on operation structures and administration of water banks, and water valuation.

### **Staff**

Nathan Draper, SMID, District Manager. Nathan has 20+ year of experience in irrigation district operation, planning and management. His long-tenure with the SMID and local stakeholder relationships will be key to the outreach strategy and market development.

Dan Haller, Principle Engineer, Aspect Consulting. Dan Haller has 20+ years of experience in water system planning, water banking, water right transactions, and facilitation of workgroups. Dan is currently leading permitting efforts for numerous water banking efforts throughout Washington, including in Kittitas County. Dan has worked in the Black Rock Area on water right transactions and stakeholder relationships over the last 20 years. Dan has a MS in Environmental Engineering from Washington State University.

Tyson Carlson, Associate Hydrogeologist, Aspect Consulting. Tyson Carlson has 20+ years in hydrogeologic evaluations of groundwater, water right transactions and transfers, and water system planning. Tyson has worked with Yakima Basin stakeholders on innovative project development in the basin and has key relationships with key basin stakeholders including regulators and senior water right holders.

Meghan O'Brien, Project Scientist, Aspect Consulting. Meghan has been working on water right permitting and planning for the past 10 years. Her work has included administering a water bank in the upper Yakima River Basin, permitting for water bank development and transactions, and developing legislative reports on water market structures and water banking activities. Meghan earned a MS in Cultural and Environmental Resource Management from Central Washington University.

Larry Martin, Attorney, Halverson NW. Larry is a water rights attorney for the District and has worked in the Yakima Basin for 30 years. Larry has strong stakeholder relationships necessary for outreach for this project, is fluent in the District's adjudicated water rights, and potential permitting needs to set up a water bank to serve this project.

### **Describe any plans to request additional technical assistance from Reclamation, or by contract.**

We hope to engage with Reclamation as a stakeholder in the development of the water marketing strategy. Additionally, we plan to reach out to key Reclamation staff in the Cascade Area Office regarding water right tracking at Parker gage and water budget neutrality to ensure Reclamations water management in the Yakima River Basin is fully considered in developing the water marketing strategy and how to

integrate this new planning effort into larger Yakima Integrated Plan efforts led by Reclamation.

***Criterion D – Department of Interior Priorities (up to 10 points)***

This project uses an innovative market approach to better managing water in an area of declining groundwater. The purpose of this project is to move already allocated water for an area of declining demand to solve an emerging water supply issue. Water supplies available for this project have come from water conservation efforts funded by the District, and create a new opportunity for use of conserved water.

The proposed work under the WaterSmart grant would explore how to operate such a water market in a way that puts water to its highest and best use, while streamlining the permitting process for market participants while maintaining a neutral water budget. This project would preserve existing agriculture and dairy use, create sustainable source solutions in an area of declining groundwater supplies, and potentially avert a public health crisis for domestic uses.

## **1.6 Environmental and Cultural Resources Compliance**

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**Will the proposed Project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any work that will affect the air, water, or animal habitat in the area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.**

Work proposed under this WaterSmart grant is not anticipated to impact the surrounding environment. The study of market solutions will not involve any earth-disturbing work or environmental impacts.

**Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the area? If so, would they be affected by any activities associated with the proposed Project?**

The reach of the Yakima River that is located downstream of the SMID diversion provides habitat to ESA listed bull trout and steelhead. This proposal is water budget neutral. Consequently, this proposal is not anticipated to affect these species.

**Are there wetlands or other surface waters inside the Project boundaries that potentially fall under Clean Water Act (CWA) jurisdiction as “Waters of the United States?” If so, please describe and estimate any impacts the proposed project may have.**

There are no known wetlands that fall under the jurisdiction of Waters of the United States in the project area.

**When was the water delivery system constructed?**

The canal system was originally constructed in the 1890s. The canals have been well maintained with minor upgrades since original construction.

**Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.**

No proposed infrastructure modifications will occur during the proposed study phase of market solutions. Any future required modification to deliver water to the Black Rock Area will be examined during the course of this market strategy analysis. Any modification to the existing canal system, which would not be part of the work conducted under this WaterSmart grant, are expected to be minor.

**Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.**

There are two farmsteads listed on the NRHP within the SMID service area. However, these areas are not expected to be impacted by the proposed project.

**Archeological Sites**

There are no known archeological sites within this area. No construction activities will occur under the WaterSmart grant. If construction is required to provide service to the Black Rock Area, prior to any construction, consultation with the Washington State Department of Archaeology and Historic Preservation will occur.

**Will the proposed Project have a disproportionately high and adverse effect on low income or minority populations?**

This project is not anticipated to have an adverse effect on low income or minority populations.

**Will the proposed Project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?**

This project will not limit access to Indian Sacred Sites or Tribal Lands.

**Will the proposed Project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?**

This project is not expected to contribute to the introduction or spread of noxious weeds or other non-native invasive species.

## 1.7 Required Permits or Approvals

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The activities proposed under the WaterSmart grant will not require permits or approvals. Future permit approvals will be evaluated in the market study.

## 1.8 Project Budget

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The total cost of this proposal is approximately \$145,000. Of this total cost, SMID is prepared to provide \$7,500 of in-kind contribution in the form of salaries, wages, and fringe benefits of staff working on outreach, scope of work, and project management. Additionally, SMID will provide \$65,400 in cash contributions from their reserves towards other costs associated with preparing the Black Rock Area Water Market Strategy.

SMID has not secured outside funding for this project. However, SMID plans to seek funding from the Washington State Department of Ecology Office of the Columbia River. This request would be to cover a portion of the SMID cost share for developing the Black Rock Area Water Market Strategy.

### Summary of Non-Federal and federal Funding Sources

FUNDING SOURCES	AMOUNT
<b>Non-Federal Entities</b>	
1. Selah Moxee Irrigation District	\$72,900
2.	
3.	
<i>Non-Federal Subtotal</i>	
<b>Other Federal Entities</b>	
1.	
2.	
3.	
<i>Other Federal Subtotal</i>	
<b>Requested Reclamation Funding</b>	\$72,900

### 1.8.1 Budget Proposal

The Budget Proposal table below details the budget of this proposal, including inhouse work and work provided by contractors.

#### Budget Proposal

Budget Item Description	\$/Unit	Quantity	Quantity Type	Total Cost
Salaries and Wages (SMID)				
Nathan Draper, Project Manager/District Manager	\$51.16	125	hours	\$6,395.00
Fringe Benefits				
Nathan Draper	\$9.09	125	hours	\$1,136.25
Travel				
Mileage	\$0.55	500	Miles	\$272.50
Supplies and Materials				
Outreach Materials Printing	\$0.05	2000	copy	\$100
Postage	\$0.49	2000	stamps	\$980
Equipment				
None	-	-	-	-
Contractual				
HalversonNW	\$250	30	Hours	\$7,500
Aspect Consulting Principle Engineer	\$244	212	Hours	\$51,728
Aspect Consulting Associate Hydrogeologist	\$200	40	Hours	\$8,000
Aspect Consulting Project Scientist	\$162	348	Hours	\$56,376
Other				
none	-	-	-	-
<b>Total Direct Costs</b>				<b>\$132,487.75</b>
Indirect Costs				
Indirect Costs	10%	Percentage	\$base	\$13,249
<b>Total Estimated Project Costs</b>				<b>\$145,737</b>

## 1.8.2 Budget Narrative

### 1.8.2.1 Salaries and Wages

The salaries and wages provided in the Budget Proposal an in-kind contribution of SMID staff time. SMID's district manager, Nathan Draper, will provide approximately 125 hours of his time towards this project. This work will include 80 hours of project coordination, grant management, preparing deliverables, and working with the board on selecting a preferred alternative and market business rules, and 45 hours of outreach and stakeholder meetings. Nathan's rate is \$51.16/hr.

Additional project management work is covered under indirect costs.

### **1.8.2.2 Fringe Benefits**

Nathan's fringe benefits provided by SMID is approximately \$9.09/hr. This is a fixed rate for billing purposes.

### **1.8.2.3 Travel**

We anticipate approximately 500 miles of travel for attending stakeholder meetings and coordination meetings. This will include several trips between Moxee, WA and Yakima, WA to meet with other area irrigation districts, and state and federal agencies; up to two trips between Moxee, WA and Toppenish, WA, where the Yakama Nation is headquartered; and several trips between Moxee, WA and the lower Yakima Valley to meet with area irrigation districts. Additionally, there will be some travel throughout the Yakima basin for additional outreach, meetings and research.

We do not anticipate any costs will be incurred for airfare, rental car, meals, lodging, or per diem.

### **1.8.2.4 Equipment**

We do not anticipate any equipment needs during the development of the Black Rock Area Water Market Strategy.

### **1.8.2.5 Materials and Supplies**

We anticipate spending approximately \$1,080 on printing and mailing outreach materials. This would include approximately 2000 mailings that will include a brief summary of the proposal and information about workshops.

### **1.8.2.6 Contractual**

SMID will hire Larry Martin with Halverson Northwest Law Group (HalversonNW) for legal services related to water rights review and provided legal advice regarding SMID actions and the development of the Black Rock Area Water Market Strategy. Larry's billing rate is \$250.00/hour and he will work approximately 30 hours.

SMID will also hire Aspect Consulting, LLC (Aspect) to assist with outreach, scope, development of the water market strategy, and preparing the technical report.

Dan Haller is a Principal Water Resources Engineer for Aspect, and is expected to spend 212 hours on this project. Dan's billing rate is \$244/hour.

Tyson Carlson is an Associate Hydrogeologist for Aspect, and is expected to spend 80 hours on this project. Tyson's billing rate is \$200/hr.

Meghan O'Brien is a project Scientist for Aspect, and is expected to spend 348 hours on this project. Meghan's bill rate is \$162/hr.

### **Proposed Tasks**

**Element 1. Outreach:** Aspect will work with SMID on developing outreach activities and materials for this project. Tasks will include: preparing outreach

materials, setting up and attending stakeholder meetings, presenting to the Water Transfer Working Group, and hosting a workshop for SMID customers and water users in the Black Rock Area.

**Key Staff w/hours:** Dan Haller – 30 hours; Meghan O’Brien – 60 hours

**Element 2. Scoping:** Aspect will work with SMID on developing a project workplan; researching supply and demand; determining water market structure options, evaluating water right issues or legal requirements; determining agreements and contracts required for bank operation; analyzing actual and potential rules and requirements that will govern the implementation of the water market; evaluating water market administration and transaction costs; conducting a financial analysis; evaluate infrastructure needs, and evaluating surface and groundwater movement.

**Key Staff w/hours:** Dan Haller – 110 hours; Tyson Carlson – 80 hours; Meghan O’Brien – 192 hours

**Element 3.** Aspect will work with the board to select a preferred alternative for water market structure and business rules; develop a financial plan for how the market will be funded and financed over time; Develop a monitoring plan; and prepare the final technical report.

**Key Staff w/hours:** Dan Haller – 72 hours; Meghan O’Brien – 96 hours

#### **1.8.2.7 Other Expenses**

We do not anticipate other expenses for the development of the Black Rock Area Water Market Strategy.

#### **1.8.2.8 Indirect Costs**

SMID does not have a federally approved indirect cost rate agreement and is proposing a de minimis rate of 10 percent of total direct costs.

#### **1.8.2.9 Total Costs**

The total estimated costs for this project are \$145,737.

## **2 Existing Analysis Contributing to the Water Marketing Strategy (if applicable)**

We will be using several sources that have analyzed water markets in Washington State, and specifically the Yakima River Basin. We plan to build on the conceptual information and data provided in these reports to develop a comprehensive strategy for using water markets to mover users off declining groundwater in the Black Rock Area.

1. Hall, S.A., J.C. Adam, M. Barik, J. Yoder, M.P. Brady, D. Haller, M.E. Barber, C.E. Kruger, G.G. Yorgey, M. Downes, C.O. Stockle, B. Aryal, T. Carlson, G. Damiano, S. Dhungel, C. Einberger, K. Hamel-Reiken, M. Liu, K. Malek, S. McClure, R. Nelson, M. O'Brien, J. Padowski, K. Rajagopalan, Z. Rakib, B. Rushi, W. Valdez. 2016. 2016 Washington State Legislative Report. Columbia River Basin Long-Term Water Supply and Demand Forecast. Publication No. 16-12-001. Washington Department of Ecology, Olympia, WA. 216 pp. Available online at: <https://fortress.wa.gov/ecy/publications/SummaryPages/1612001.html>.
2. HDR Engineering, Anchor QEA, Yakima River Basin Study: Water Needs for Out-of-Stream Uses – Technical Memorandum, U.S. Bureau of Reclamation, June 2011, Contract No. 08CA10677A ID/IQ, Task 2.1. Available at: <https://www.usbr.gov/pn/programs/yrbwep/reports/tm/2-1waterneeds.pdf>
3. U.S. Bureau of Reclamation, WA Dept. of Ecology, Yakima River Basin Integrated Water Resource Management Plan: Final Programmatic Environmental Impact Statement, March 2012. Available at: <https://www.usbr.gov/pn/programs/yrbwep/reports/FPEIS/fpeis.pdf>
4. ECO Northwest, Yakima River Basin Study: Market-Based Reallocation of Water Resources – Technical Memorandum, U.S. Bureau of Reclamation and Ecology, March 2011, Contract No. 08CA10677A ID/IQ, Task 4.12. Available at: <https://www.usbr.gov/pn/programs/yrbwep/reports/tm/4-12marketreallocation.pdf>
5. ESA Adolfson, Yakima River Basin Study: Environmental, Policy and Legal Barriers – Technical Memorandum, U.S. Bureau of Reclamation, June 2011, Contract No. 08CA10677A ID/IQ, Task 5.2. Available at: <https://www.usbr.gov/pn/programs/yrbwep/reports/tm/5-2ep-legbarriers.pdf>
6. U.S. Bureau of Reclamation, HDR Engineering, Anchor QEA, Yakima River Basin Study: Fish Benefits Analysis – Technical Memorandum, U.S. Bureau of Reclamation, May 2011, Contract No. 08CA10677A ID/IQ, Task 7. Available at: <https://www.usbr.gov/pn/programs/yrbwep/reports/tm/7-fishbene.pdf>
7. WA Dept. of Ecology, 2008 Report to the Legislature: Water Banking in Washington State, November 2009. Available at: <https://fortress.wa.gov/ecy/publications/documents/0911024.pdf>
8. Yakima River Basin Water Enhancement Program, Final Environmental Impact Statement, U.S. Bureau of Reclamation, January 1999. Available at: <https://www.usbr.gov/pn/programs/yrbwep/reports/1999peis.pdf>
9. Final Planning Report/Environmental Impact Statement, Vol 1&2: Yakima River Basin Water Storage Feasibility Study, U.S. Bureau of Reclamation, December 2008. Available at: <https://www.usbr.gov/pn/studies/yakimastoragestudy/reports/eis/final/index.html>

10. Yakima River Basin Integrated Water Resource Management Alternative, Final Environmental Impact Statement, WA Dept. of Ecology, June 2009. Available at: <https://fortress.wa.gov/ecy/publications/documents/0912009.pdf>
11. U.S. Bureau of Reclamation, Water Marketing Activities within the Bureau of Reclamation, December 2016. Available at: <https://www.usbr.gov/watersmart/docs/2016/2016watermarketingreport.pdf>
12. Cascadia Law Group, ECO Northwest, Technical Report on Market-Based Reallocation of Water Resources: A component of the Yakima River Basin Storage Feasibility Study, WA Dept. of Ecology, December 2007. Available at: [https://www.usbr.gov/pn/studies/yakimastoragestudy/reports/07-11-044/Market\\_Based\\_Reallocation.pdf](https://www.usbr.gov/pn/studies/yakimastoragestudy/reports/07-11-044/Market_Based_Reallocation.pdf)
13. WA Dept. of Fish and Wildlife, Columbia River Instream Atlas—Final Report, Ecology Pub. No. 11-12-015, November 2011. Available at: <https://fortress.wa.gov/ecy/publications/documents/1112015.pdf>

### **3 Letters of Support**



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

1250 W Alder St • Union Gap, WA 98903-0009 • (509) 575-2490

July 12, 2018

U.S. Bureau of Reclamation

**RE: Support for Selah Moxee Irrigation District's WaterSMART  
Water Marketing Strategy**

Dear U.S. Bureau of Reclamation:

The purpose of this letter is to express Washington State Department of Ecology Office of the Columbia River's (OCR) support of Selah Moxee Irrigation District's (SMID) proposed WaterSMART Water Marketing Strategy Grant application. OCR sees this as a proactive opportunity to meet future water needs in the Columbia River Basin through developing innovative, market based solutions to emerging water supply issues.

This proposal seeks to better understand an emerging water market within the Yakima Basin, and the potential for source substitution in areas of declining groundwater. Unlike the Upper Yakima Basin water markets, which arose in response to regulatory pressures for new development, this potential market is developing because of changes in the physical availability of water. Under the WaterSMART grant, SMID would investigate developing a water market, initially seeded with SMID's Yakima River water rights, to provide service to the Black Rock Area. Water users in this area rely on groundwater, which comes at substantial pumping costs and is currently declining by as much as 13 feet per year for the last several decades. Without a source substitution project, eventual curtailment of existing users and significant land use changes are inevitable. Because of the presence of domestic and group domestic users in the area, there is the potential for a public health crisis if a solution is not developed for existing groundwater users.

OCR supports the WaterSMART Water Marketing Strategy Grant project proposed by SMID. We encourage support and approval of this proposal.

Sincerely,

G. Thomas Tebb, L.Hg., L.E.G.  
Director  
Office of Columbia River

DS:GT:cmr (180708)

cc: Danielle Squeochs, Ecology- Office of Columbia River





STATE OF WASHINGTON  
DEPARTMENT OF HEALTH  
EASTERN DRINKING WATER REGIONAL OPERATIONS  
16201 E Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830  
TDD Relay 1-800-833-6388

July 13, 2018

Julie Hendricks  
Financial Assistance Support Section  
US Bureau of Reclamation  
PO Box 25007 MS 84-27814  
Denver, CO 80225

RE: Support for Selah Moxee Irrigation District's WaterSMART Water Marketing Strategy

Dear Ms. Hendricks:

The purpose of this letter is to express Washington State Department of Health's (DOH) support of Selah Moxee Irrigation District's (SMID) WaterSMART Water Marketing Strategy Grant application. DOH sees this as a proactive opportunity to ensure safe and reliable access to drinking water in an area of diminishing water supply.

This proposal seeks to understand an emerging water market within the Yakima Basin, and the potential for source substitution in areas of declining groundwater. Unlike the Upper Yakima Basin water markets, which arose in response to regulatory pressures for new development, this potential market is developing because of changes in the physical availability of water. Under the WaterSMART grant, SMID would investigate developing a water market, initially seeded with SMID's Yakima River water rights, to provide service to the Black Rock Area. Water users in this area rely on groundwater, which comes at substantial pumping costs and is currently declining by as much as 13-feet per year over the last several decades. Without a source substitution project, eventual curtailment of existing users and significant land use changes are inevitable. Because of the presence of domestic and group domestic users in the area, there is the potential for a public health crisis if a solution is not developed for existing groundwater users.

DOH supports the WaterSMART Water Marketing Strategy Grant project proposed by SMID. We encourage your support and approval of this proposal.

Sincerely,

Dorothy Tibbetts, MS, MPH  
Regional Manager, Eastern Regional Office  
Office of Drinking Water  
Division of Environmental Public Health

cc: Meghan O'Brien, CWRE, Aspect Consulting LLC  
Dan Haller, PE, CWRE, Aspect Consulting LLC  
Andres Cervantes, PE, DOH Regional Engineer



## **4 Official Resolution**

**Selah-Moxee Irrigation District**

113 East Moxee Avenue

P.O. Box 166

Moxee, WA 98936

(509) 469-0449 FAX (509) 469-0489

**Resolution 2018-11**

A RESOLUTION AUTHORIZING AND APPROVING A COOPERATIVE AGREEMENT WITH THE BUREAU OF RECLAMATION WATERSMART GRANT PROVIDING SUPPLEMENTAL FINANCING FOR INVESTIGATING WATER MARKET PROGRAMS

**Whereas**, the project will investigate options and opportunities for implementing a water marketing program; and

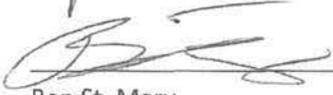
**Whereas**, The Selah-Moxee Irrigation District Board of Directors will realize options for transferring water rights to other entities and/or individuals.

**Now Therefore, Be It Resolved** that the Selah-Moxee Irrigation District agrees and authorizes that:

1. Nathan Draper, District Manager of Selah-Moxee Irrigation District is given authority to submit the application to the Bureau of Reclamation for the WaterSmart Grant Program;
2. Nathan Draper, District Manager of Selah-Moxee Irrigation District is given authority to enter into an agreement with the Bureau of Reclamation for the WaterSmart Grant Program;
3. The District is capable of providing the amount of funding and in-kind contributions specified in the funding plan; and
4. If selected to receive funds from Grant the District will work with Reclamation to meet established deadlines for entering into a cooperative agreement.

**Passed and Adopted** by the Selah-Moxee Irrigation District on this 11<sup>th</sup> Day of July, 2018

 \_\_\_\_\_ Date: 7/11/18  
Mike McGree, President

 \_\_\_\_\_ Date: 7/11/18  
Ben St. Mary

\_\_\_\_\_ Date: \_\_\_\_\_  
Michael Roy

 \_\_\_\_\_ Date: 7-11-18  
Nathan Draper, Manager

## 6 System for Award Management

SMID has an active System for Award Management (SAM) account.

Unique Entity Identify: 1238069544

CAGE: 37ED8

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