



# 2024 GRANT SOLICITATION

## IRRIGATION MODERNIZATION FUNDING

### GRANT APPLICATION

**APPLICATION DEADLINE: 5:00 PM ON JANUARY 17, 2024**

**\*Application must be received by this date and time\***

Send application electronically to: [OWRD.Grants@water.oregon.gov](mailto:OWRD.Grants@water.oregon.gov)

Mail application to: **OREGON WATER RESOURCES DEPARTMENT**  
**Attention: Grant Coordinator**  
**725 Summer Street NE, Suite A**  
**Salem, OR 97301**

#### **Application Assistance – Instructions, Scoring Criteria and Pre-Application Conferences**

We encourage all applicants to review the *Irrigation Modernization Funding Application Instructions* and *Scoring Criteria* while drafting their application and to request a *Pre-Application Conference* before applying. OWRD will review your draft application and provide feedback. You must submit your draft application two weeks before the pre-application conference. Pre-application conferences will not be scheduled the week of the application due date. To learn more, check out the Pre-application Conference document under Irrigation Modernization Funding on the [Water Project Grants and Loans, Applications, Forms and Guidance webpage](#).

### APPLICATION SUBMISSION INSTRUCTIONS

1. Complete Sections I through VIII in the spaces provided. **Use the Irrigation Modernization Funding Grant Application Instructions and Scoring Criteria documents when completing your application.** All resources are available at the [Water Project Grants and Loans webpage](#).
2. Complete the application checklist.
3. Submit the application on the form provided by OWRD. Do not alter the application for the purpose of formatting or changing the document structure.
4. Please ensure that the Certification portion of Section II is signed with a live signature by the Applicant and, if applicable, the Co-Applicant.
5. Submit the completed application and all attachments via email or in hard copy. Electronic application submission is the preferred method. You may scan a copy of the signed signature page and submit it with your application as long as both documents are included in the same email.
6. If the application is submitted in hard copy, use 8 ½" x 11" single sided, unstapled pages. Provide any attachments to the application on 8 ½" x 11" single-sided, unstapled pages.
7. Applicants are discouraged from submitting information considered proprietary unless it is deemed essential for proper evaluation of the application. Please note that eligible and complete applications will be posted on OWRD's [Funding Cycle History webpage](#).
8. Contact OWRD at 971-301-0718 or [OWRD.Grants@water.oregon.gov](mailto:OWRD.Grants@water.oregon.gov) if you have any questions.



IRRIGATION MODERNIZATION FUNDING
2024 GRANT APPLICATION

I. Project Information

Project Name: Piping Lateral Canals in the Vale Bench: Building on Experience

Grant Funding Request: \$ 3,601,238

Match Funding: \$ 2,520,000

Total Cost of Project (Grant Funding Request + Match Funding): \$ 6,121,238

II. Applicant Information

Table with 2 columns: Applicant Name, Co-Applicant Name, Address, Phone, Email. Applicant: Malheur Watershed Council. Co-Applicant: (blank).

Table with 2 columns: Principal Contact, Fiscal Officer, Address, Phone, Email. Both Ken Diebel.

Certification: I certify that this application is a true and accurate representation of the proposed work and that I am authorized to sign as the Applicant or Co-Applicant. By the following signature, the Applicant and Co-Applicant (if applicable) certify that they are aware of the requirements of an Oregon Water Resources Department funding award, have read and are aware of conditions within the example grant agreement on the OWRD's website and are prepared to implement the project, if awarded.

Signature of Applicant/Authorized Person: Ken Diebel Date: 1-17-24

Print Name: Ken Diebel Title: Exec. Dir.

Signature of Co-Applicant/Authorized Person: Date:

Print Name: Title:

III. Eligibility

1. Is your project an irrigation modernization project? [X] Yes [ ] No

An irrigation modernization project is a project that improves water use efficiency of irrigation systems on currently irrigated agricultural lands.

Attention - If the answer is "No" to this question, your project is not eligible for this funding.

2. Does your project leverage federal funding?  Yes  No

*Attention - If the answer is "No" to this question, your project is not eligible for this funding.*

If yes, please identify which qualifying federal match you have:

- Natural Resources Conservation Service funds associated with an authorized watershed plan
- U.S. Bureau of Reclamation WaterSMART grant
- U.S. Environmental Protection Agency grant *and* your entity is eligible to be on the Department of Environmental Quality's Intended Use Plan

Note: The federal funding source must also be listed in question 24 with match documentation.

3. Select applicant entity type for both applicant and co-applicant (if applicable).

<input type="checkbox"/>	City	<input checked="" type="checkbox"/>	Non-Profit Organization
<input type="checkbox"/>	Cooperative	<input type="checkbox"/>	Partnership
<input type="checkbox"/>	Corporation	<input type="checkbox"/>	Port
<input type="checkbox"/>	Oregon County	<input type="checkbox"/>	Soil and Water Conservation District
<input type="checkbox"/>	Drainage District	<input type="checkbox"/>	Sole Proprietorship
<input type="checkbox"/>	Indian Tribe	<input type="checkbox"/>	Water Control District
<input type="checkbox"/>	Individual	<input type="checkbox"/>	Water Improvement District
<input type="checkbox"/>	Irrigation District	<input type="checkbox"/>	Other:

4. Provide a brief, one to two paragraph description of the water supply need that the project intends to address. Please reference (and attach) supporting data or reports that document the need.

The Vale Oregon Irrigation District (VOID) faces a declining water supply due to recurring drought. They are struggling to meet the demands of agriculture, fish habitat, and water quality requirements. The best way to meet all demands with a smaller supply is to become more efficient in delivering water to patrons and helping them become more efficient in their use of the water.

5. Is either the Applicant or Co-Applicant required to have a Water Management and Conservation Plan (WMCP)?  Yes  No

If yes, has the plan been submitted to the Water Resources Department and received approval?

- Yes  No



*Pursuant to ORS 541.659, if an applicant is required to have a water management and conservation plan, the plan **must be submitted** to OWRD **and receive approval** prior to department acceptance of an application for a grant from the account. The application will be ineligible if a required plan has not been submitted and approved prior to the application deadline. Please contact [wrd\\_dl\\_wmcp@water.oregon.gov](mailto:wrd_dl_wmcp@water.oregon.gov) with any questions about WMCPs.*

#### IV. Project Summary and Location

6. Provide a brief, 4-5 sentence summary of the proposed project. Please include the goal and scope of the project and summarize project implementation. Refer to the *Irrigation Modernization Funding Application Instructions* for additional information on what to include.

We are piping 10.4 miles of earthen lateral canals. Our project will result in savings of approximately 4,896 acre-feet per year. These savings will help us achieve a carryover pool in Beulah Reservoir to benefit the habitat of the federally listed bull trout. Side benefits of piping will be improved water quality by enabling landowners to convert from furrow to sprinklers, which will eliminate irrigation-induced erosion. The future of our food supply will be protected by ensuring irrigation water supply and maintaining our soil quality.

**Instructions:** Please answer the following questions about the location of the proposed project.

7. Please provide the following information about the project location.
- a. Latitude, Longitude (in decimal degrees): 43.9655 / -117.3712
- b. County: Malheur
- c. Watershed/Basin: Lower Malheur
8. Please attach and label, Attachment #1, a site plan map(s) showing all the following items:
- a.  Project area boundaries
- b.  True north arrow
- c.  Map title and legend
- d.  Latitude and longitude of project location
- e.  Property boundaries
- f.  Surface water bodies
- g.  Location of involved structures (existing or proposed)
- h.  Tax Map and Lot numbers of each property in project area boundary. Use the same Tax Lot No. on the map as is used in Question 9 below. **Note: Each property where project work is planned must be identifiable on the map or your application will be deemed incomplete.**
- i.  Point(s) of Diversion and Place(s) of Use associated with the project (if applicable)
- j.  Proposed measurement location(s) (if applicable)
9. Complete the table below to identify any properties that will be impacted by project implementation. Indicate the types of activities that would occur on each impacted property. **Note: Each property identified below must be shown on the attached site map or your application may be deemed incomplete. Add rows as needed.**

Tax Map No. (e.g. 12S06W-12714)	Tax Lot No. (e.g. 100)	Ownership Type (✓ One)	Property Owner of Record	What type of activity occurs on this site as part of project implementation? (✓ all that apply)	If applicable, identify the type and extent of ground disturbing activity (e.g. test pits, borings, new road construction, excavation, etc.).	Property identified & labelled on the map (x when complete)	Map #
18S43E	6200	<input checked="" type="checkbox"/> Public <input type="checkbox"/> Private	VOID/BOR Easement	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 176	x	1

Tax Map No. (e.g. 12S06W-12714)	Tax Lot No. (e.g. 100)	Ownership Type (✓ One)	Property Owner of Record	What type of activity occurs on this site as part of project implementation? (✓ all that apply)	If applicable, identify the type and extent of ground disturbing activity (e.g. test pits, borings, new road construction, excavation, etc.).	Property identified & labelled on the map (x when complete)	Map #
18S43E	6200	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement AMODEI, MERVYN L & LINDA C adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 176	x	1
18S43E	5500	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement TIBBITTS, WILLIAM RAY & LORNA adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	2
18S43E	5400	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement HOLLENBECK, Travis and Katheryne Adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	3
18S43E	5300	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement Allum Angela G Adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	11
18S43E	5200	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement HYDE, RANDY adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	12
18S43E	5000	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement BEAUMONT FAMILY TRUST adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	13
18S43E	4900	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement WHITTENBURG, JOSEPH F & DENISE adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	5
18S43E	8300	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement LANG FAMILY TRUST adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	14

Tax Map No. (e.g. 12S06W-12714)	Tax Lot No. (e.g. 100)	Ownership Type (✓ One)	Property Owner of Record	What type of activity occurs on this site as part of project implementation? (✓ all that apply)	If applicable, identify the type and extent of ground disturbing activity (e.g. test pits, borings, new road construction, excavation, etc.).	Property identified & labelled on the map (x when complete)	Map #
18S43E	8200	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement VALE RANCHES LLC adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	18
18S43E	8400	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement LANG FAMILY TRUST adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	15
18S43E	8500	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement HUTCHINGS STEPHEN MC & ALICIA adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	16
18S43E	7900	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement PATTERSON, ROBERT R & DONNA E adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	17
18S44E	3100900	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement ATKINSON REVOCABLE TRUST adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	21
18S43E	4000	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement PALMER FAMILY TRUST adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 192	x	4
18S44E	8100	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement RUSSELL, CHARLES & BARBARA adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	10
18S44E	8200	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement ROCKEFELLER, SHANEY adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	8

Tax Map No. (e.g. 12S06W-12714)	Tax Lot No. (e.g. 100)	Ownership Type (✓ One)	Property Owner of Record	What type of activity occurs on this site as part of project implementation? (✓ all that apply)	If applicable, identify the type and extent of ground disturbing activity (e.g. test pits, borings, new road construction, excavation, etc.).	Property identified & labelled on the map (x when complete)	Map #
18S44E	8400	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement ATKINSON REVOCABLE TRUST adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	20
18S44E	8500	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement ATKINSON REVOCABLE TRUST adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	19
18S44E	8800	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement RODGERS, REID R & KARYN adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	26
18S44E	8900	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement TORREY, JACK LEE adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	27
18S44E	9000	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement EP MINERALS, LLC adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	28
18S44E	3100200	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement WINEBARGER VIRGIL adjacent private land	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	25
18S43E	5900	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement JACOBS, JERRY R & LAURA Adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	9
18S43E	4400	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement Copenhaver Crystal Adjacent Private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	6
18S44E	1901100	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement HIBBITTS, LONNIE & PAMELA K adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	7
18S44E	3100600	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement ATKINSON REVOCABLE TRUST adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	22

Tax Map No. (e.g. 12S06W-12714)	Tax Lot No. (e.g. 100)	Ownership Type (✓ One)	Property Owner of Record	What type of activity occurs on this site as part of project implementation? (✓ all that apply)	If applicable, identify the type and extent of ground disturbing activity (e.g. test pits, borings, new road construction, excavation, etc.).	Property identified & labelled on the map (x when complete)	Map #
18S44E	3100400	X public Private	VOID/BOR Easement OREGON, DEPT OF TRANSPORTATION	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	23
18S44E	3100300	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement WILSON, KYLE J & CRYSTAL L adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	24
18S43E	5600	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement Hyde Randall adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	29
18S43E	4600	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement Ryan and Jesse Steele adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	30

10. For each property listed in Question 9, evidence will be required documenting legal easement on or ownership of all lands where the work will be carried out. Evidence includes but is not limited to: (i) documentation of easement, (ii) easement holder's agreement to allow Grantee to carry out the work, or a portion of the work on the servient estate, or (iii) deed or other documentation of land ownership. Submission of this information will be a condition of the grant agreement; you can provide it now or after the grant agreement is signed.

## V. Project Details and Description

**Instructions:** Please answer the following questions.

11. Provide additional information (building on the project summary) to further describe the proposed project and how the project will achieve its goals.

**Goal:** Enhance irrigation infrastructure to improve water quality, increase water conservation for productive agriculture and bull trout habitat.

**Short water supply:** Water shortages have been an increasing problem for VOID especially since 2000. The area has been in a prolonged drought. In addition to the drought, Malheur County experiences some of the highest temperatures in eastern Oregon, exacerbating water shortage by increasing the rate of evaporation. Because of the water shortage in the reservoirs, the irrigation season has ended early for 7 of the past 12 years. We expect shortages will continue and may worsen with a changing climate. We are also challenged with increased demands for existing water for environmental concerns and to maintain a minimum pool in Beulah Reservoir for bull trout, a federally listed fish species.

Piping earthen laterals 176, 185, 188, 192, 195 will eliminate the seepage and transpiration common with earthen lateral and ditches. By saving approximately 4,896 acre-feet annually, this will enable VOID to provide irrigation water longer in the growing season. If the irrigation season is shortened due to insufficient water, certain crops requiring late-season irrigation cannot be grown. For example, predominant crops in this area include onions and corn which require late season irrigation to reach maturity and become economically viable. The water savings will assist VOID in maintaining the 2,000-acre-foot minimum pool in Beulah Reservoir for bull trout.

This area is considered part of the Western Treasure Valley which provides the largest percentage of yellow onions for the entire country. Sugar beets require late-season irrigation water and are an important crop in Malheur County. While alfalfa could still be grown, the number of cuttings would likely be limited to two instead of the typical three or four. Without late-season irrigation for alfalfa, less tonnage would be grown for livestock and feedlots and further negative economic impacts to Malheur County agriculture. Therefore, impacts to both farmers and livestock owners will occur.

By piping these earthen laterals, the irrigation district will be able to provide pressurized irrigation that generally eliminates the need for pumps (depending on the amount of fall). As water flows through the pipe, gravity will provide the pressure needed to run the pivot in most cases. Piping enables landowners to convert to sprinklers configured appropriately for each field.

Often more water needs to be diverted down the conveyance ditch to account for seepage and

loss as water is carried through the earthen ditch to the last user. This results in wasted water, but there is no other way to convey that water.

Installation of a pivot or sprinkler system enables the landowner to accurately measure all water use and utilize technology that applies irrigation water at different rates throughout the fields. Meters are attached to the pivot to accurately measure water use.

Currently if the full rate allowed on the certificate is used (600 CFS) it ends up being about 1/50th cfs per acre. An alfalfa pivot can operate on about 1/60th. When we achieve our goal of modernizing the water delivery infrastructure and producers convert to sprinklers or drip we will be able to reduce the amount diverted.

Malheur County typically experiences localized downpours in summer months. If the field is being irrigated concurrent with a downpour, excessive erosion will occur adversely impacting water quality and eroding precious soil. If a pivot is scheduled for irrigation and a rainfall or downpour occurs, the landowner can simply turn it off with a Smartphone. This conserves precious water and makes farming operations more efficient. The technology to integrate a Smartphones with a pivot computer is very innovative, enabling landowners to be much more efficient while saving water resources. The project will allow for more conversion to sprinkler, enabling use of Smart technology where it previously wasn't usable

**Water quality:** There are concerns in the Malheur River about poor water quality due to irrigation tailwater runoff. Tailwater contains high amounts of sediment, nutrients, bacteria, and may contain pesticides and other legacy contaminants. Oregon DEQ ranks the Malheur River in the top 3 rivers having the worst water quality in Oregon. Pollutants in the Malheur River also contribute to numerous water quality impairments in the downstream Snake River.

By piping these earthen laterals, producers can convert 10,000 acres from furrow/flood irrigation to sprinkler-pivot irrigation or drip tape. Converting to sprinkler irrigation not only reduces water use but eliminates the tailwater runoff. Under flood irrigation, the first irrigation set in the spring usually carries tremendous amounts of *E. coli* to nearby ditches and ultimately the Malheur River.

Landowners typically use the dormant fields as winter-feeding areas for livestock. Accumulated waste products will build up over several months. The first flood irrigation of the spring season then flushes tailwater laden with nutrients to the river which adversely affects water quality. Likewise, throughout the growing season as fields are flood-irrigated, runoff (tailwater) carries fertilizers, pesticides and other chemicals to nearby waterways.

By piping the earthen laterals, pivot-sprinkler irrigation can be installed that eliminates runoff or tailwater from flood irrigation. By enabling producers to convert to a pivot system, "precision agriculture" can be used. Pivots use innovative technology to apply water, fertilizers and other chemicals at varying rates in exact locations without having to apply them at the same rate to the entire field.

Application of chemicals and fertilizers can be turned off near waterways, ditches or riparian areas. Precise field mapping indicates where there are high and low spots, alkali areas, or other locations needing more or less application of water, fertilizers and other chemicals. This results in the application of less chemicals which is better for water quality and the overall

environment. Precision agriculture incorporates the latest innovative technology that increases the overall efficiency of farming operations. However, pivots systems are needed to be able to use this technology.

***Bull trout habitat:*** Bull trout overwinter in Beulah Reservoir that supplies VOID's irrigation water. Beulah Reservoir is formed by Agency Dam impounding water from the North Fork of the Malheur. The headwaters of the Malheur have some of the best habitat for bull trout where they forage and rear. There is a need to maintain water levels in the reservoir to protect bull trout, federally ESA-listed as "threatened".

To protect bull trout, minimum reservoir depths have been established during the irrigation season. Since 2010 VOID has leased water to the Bureau of Reclamation to **maintain 2,000 acre-feet carry-over pool**. Strategies that reduce water withdrawals from the reservoir and maximize water-use efficiency on irrigated lands in the watershed are critical to sustain bull trout and irrigated agriculture in the watershed. The 2,000 acre-feet carry-over pool cannot always be met, but through improved irrigation infrastructure this objective is more easily reached.

***Economic challenges in a rural area:*** Malheur County ranks near the bottom of all economic metrics. It is an economically depressed county. After the conclusion of the 2020 census, it was noted that Malheur County is one of only 3 Oregon counties to lose population in the 2020 census Population of Counties in Oregon (2022) (worldpopulationreview.com). Some of the decrease is because the agricultural community does not offer as many jobs as previously. Large corporate farming entities have purchased smaller ownerships to combine operations. Also, some of the agricultural workers live in Idaho where taxes and cost of living are less.

Malheur County has the second highest percentage of Hispanic population at 34.4%. Only Morrow County is higher at 37.3%. Oregon Hispanic or Latino Origin Population Percentage by County (indexmundi.com). Hispanic workers comprise the vast majority of agricultural workers in Malheur County. Maintaining a vibrant agriculture will ensure that these workers have steady employment. The Hispanic population is an underserved community.

Malheur County ranks 36 of 36 for income of Oregon counties. Malheur County ranks 36th in Oregon for poverty. The average poverty rate in Oregon is 14.9% with the poverty rate in Malheur County at 25.2%. The next lowest county poverty rate is Jefferson County at 20.9% almost 5% higher. The poverty rate in Vale, near this project site, is 19.2% (www.welfareinfo.org/povertyrate/oregon/compare-counties).

Clearly, Malheur County struggles with poverty, low wages, and population out-migration. Maintaining agriculture will help to keep the economy viable. By improving irrigation infrastructure, jobs will be created during installation and maintained afterwards through harvesting, transportation, packing and selling of products.

In Malheur County the percent of civilian employed population in agriculture 15.1%  
<https://statisticalatlas.com/county/Oregon/Malheur-County/Industries>

The Malheur Watershed Council, irrigators, the Vale Oregon, Warm Springs, Owyhee, and Orchard Irrigation Districts, and many other partners have been working on water quality and

quantity improvement projects in the watershed for more than 20 years.

12. Describe partnerships and collaborative efforts associated with the planning or implementation of this project. Include a description of how parties of diverse interests worked, or will work, together to achieve a common goal.

As evidenced by numerous projects, Malheur Watershed Council has a 20-year proven track record of working collaboratively with a variety of groups.

BOR -funder technical assistance  
DEQ – funder technical assistance  
ODA --funder technical assistance  
ODFW -- Technical assistance  
OWRD -- funder technical assistance  
NRCS -- funder technical assistance  
SWCD – technical assistance, obtained funding  
Burns-Paiute Tribe – technical assistance  
OSU Extension/Experiment Station – technical assistance  
Orchard Irrigation District -- funder technical assistance  
Idaho Power -- funder technical assistance  
BLM – technical assistance

Since the beginning of the Malheur Watershed Council, we have diligently worked with all these organizations. Likewise, these organizations have been part of the Malheur Watershed Council either currently or previously actively participating in meetings and various projects. We have collaborated on restoration projects, monitoring projects or educational efforts.

13. List letters of support for this project (name and/or affiliation of sender is sufficient). Attach copies of the letters to your application.

Burns Paiute Tribe  
NRCS  
Idaho Power  
ODA  
OSU Malheur Experiment Station  
Representative Mark Owens  
William Buhrig, farmer/former OSU Extension

**Project Tasks**

14. Identify tasks necessary for the proposed project using the following format. Include as many tasks as necessary to implement the project. If your proposed project receives grant funding, the tasks identified will be incorporated into your grant agreement as the “Project Description.”

*Note: Project management and administration are common functions within specified tasks and not a separate task. All cost match and grant budget funds must apply to the tasks identified below. See the Budget Procedures and Allowable Costs document on the [Applications, Forms and Guidance webpage](#) for more information.*

**For each task address the following:**

Task number. Task Title

- Task schedule: State the approximate dates during which the task will be completed.
- Description of task activities: Include specific details of the task such as purpose, planned approach, and proposed methods.

**Task 1.** Finalize engineering designs

- Task schedule: January to June 2024
- Description of task activities: Our contracted engineer will work with NRCS engineering staff to ensure the pipe sizes and accessories are adequate to deliver the proper amount of water.
- Permits/regulatory approvals required: Obtain NEPA approvals from BOR, which will include a cultural resources review.

**Task 2.** Year 1 of pipe installation

- Task schedule: October 2024 to March 2025
- Description of task activities: VOID crews will begin installing pipelines. Goal for the first year is about 15,000 feet Laterals 176, 188, 192 and part of 185
- Permits/regulatory approvals required: Our proposed project consists of laying pipe in existing dirt lateral irrigation canals. We will not disturb any existing wetlands or impact creeks or rivers. Thus, we are confident that we will not require any permits to conduct this project. There are some seepage areas along the laterals and piping them will prevent the seepage. We believe these wet areas along the laterals are not classified as jurisdictional wetlands requiring permitting under the Clean Water Act or the state's fill and removal statutes.

**Task 3.** Year 2 of pipe installation

- Task schedule: October 2025 to March 2026
- Description of task activities: VOID crews will begin installing pipelines. Goal for the 2nd year is about 15,000 feet remainder of 185
- Permits/regulatory approvals required: See above

**Task 4.** Year 3 of Pipe installation

- Task schedule: October 2026 to March 2027
- Description of task activities: VOID crews will begin installing pipelines. Goal for the 3rd year is about 20,000 feet Lateral 195
- Permits/regulatory approvals required: See above

**Task 5.** Final Report and final financial report

- Task schedule: March 2027
- Description of task activities: Malheur WSC will write the final report and submit the final financial requests.
- Permits/regulatory approvals required: none

*Copy and paste additional tasks as needed.*

15. Project Task Scheduling – Estimated total project duration: 36 months

Place an “X” in the appropriate column to indicate when each task would occur. Note that successful applicants will not receive their grant agreement until Q3 of 2024. OWRD cannot reimburse for costs incurred prior to the effective date of the grant agreement. Project tasks listed must match the tasks identified in Question 14.

Tasks <i>(Add more rows as needed)</i>	Calendar year 2024				Calendar year 2025				Calendar year 2026			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Grant Agreement Signed	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Final Pipeline Design/Cultural Resources/NEPA	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pipeline Installation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Break for Irrigation Season	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Final Report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

16. Describe how you propose to measure and report the water diverted and used from the proposed project. Include a proposed method, timing, frequency, and location of measurement in your proposal. Consider that many forms of measurement will incur additional costs.

*Note: Funded projects with any diversion of water are required by statute to “regularly measure and report the water diverted and used from the project” [ORS 541.692(3)]. OWRD makes the final determination on the method, timing, frequency, and location of measurement. Grant funds can be used to pay for measurement and reporting expenses during the life of the grant.*

VOID measures water at their main diversion, the Froman Diversion, and at each individual field. All pivots have measuring devices installed. Part of this infrastructure improvement project is to upgrade the existing measuring devices to obtain a more accurate measurement at the diversion and for each field.

**Water Rights, Permits, and Regulatory Approvals**

*Attention – All current, pending, or planned water rights necessary to implement the proposed project must be listed below for the application to be accepted as complete.*

17. Identify any currently held water rights needed to implement the proposed project below. Check all of the following that apply and provide the information requested in the table below:

- a.  The applicant holds the water right(s) required for the project. If checked, list all water rights required for the project in the table below, adding rows as needed. See the Application Instructions for further instruction, including how to find water right information.
- b.  The applicant has legal access to a water right that will be required for the project and has been given permission to use the water right(s). If checked, list all water rights required for the project in the table below, adding rows as needed. See the Application Instructions for further guidance, including how to find water right information.

Water Right Number (Include prefixes, if applicable, e.g., G 00010)	Is this an application, permit, certificate, limited license, special or final order, transfer, decree, lease, or claim?	Water Right Amount			Tax Map/Lot IDs within the Place of Use where water will be used to implement the proposed project
		Max Volume (ac-ft)	Max Rate (cfs)	Duty (ac-ft/ac)	
74080	certificate		600	4.5	See attachment

18. Identify any new water rights needed for the proposed project. Complete the table adding any essential information describing needed water rights or status.

Type of Water Right Surface water, Groundwater, Limited License, Conserved water certificate, Storage, Secondary Use permit, Transfer, Instream Lease, etc.	Status Application not yet submitted, Application submitted and in progress (if submitted include application number)	Anticipated Water Right Amount			Tax Map/Lot IDs within the anticipated Place of Use where water will be used to implement the proposed project
		Max Volume (ac-ft)	Max Rate (cfs)	Duty (ac-ft/ac)	

19. In the table below, provide a list of any permits and regulatory approvals needed to implement the project. Indicate the status and efforts to-date of each. Please attach copies of any secured permits/approvals. *Add rows as needed for additional permits.*

Project Activity Requiring Permit/Regulatory Approval	Permit/ Regulatory Approval Name and Entity Issuing	Status and Efforts to Date
NEPA	BOR	Pending

If no permits or regulatory approvals are required, please provide an explanation below.

Our proposed project consists of laying pipe in existing earthen lateral irrigation canals. We will not disturb any existing wetlands or impact creeks or rivers. Thus, we are confident that we will not require any permits to conduct this project. There are some seepage areas along the laterals and piping them will prevent the seepage. We believe these wet areas along the laterals are not classified as jurisdictional wetlands requiring permitting under the Clean Water Act or the state's fill and removal statutes. However, if funded we will conduct further investigation and permitting will be coordinated with DSL and the Army Corps of Engineers if needed.

## VI. Public Benefits

**Instructions:** Describe how the project would provide public benefits in each of the three public benefit categories (economic, environmental, social/cultural). In your responses, describe current conditions and anticipated project outcomes and benefits. Provide evidence to support your claims. Descriptions should be quantitative when possible.

Applications are scored and ranked based on the descriptions of the economic, environmental, and social/cultural public benefits and the likelihood of the project achieving the claimed benefits. More specifically, the evaluation is based on the change in conditions expected to result from the project as demonstrated in the application.

**Application Tip:** Please read the **Scoring Criteria** document on the [Applications, Forms and Guidance webpage](#) as you complete this section. The Scoring Criteria document will be used for both Irrigation Modernization Funding applications and Water Project Grants and Loans (WPGL) applications. Irrigation Modernization projects will be evaluated in the same manner as WPGL projects with one exception. For projects involving surface water rights where the project conserves water, priority shall be given to projects that legally protect a portion of the conserved water instream commensurate with the amount required under the approach described in ORS 537.470.

The Scoring Criteria document includes definitions of each public benefit and a description of how the public benefits are evaluated and scored. Applications that do not demonstrate public benefit in each of the three categories (economic, environmental, social/cultural) will be deemed incomplete. Applications **must** achieve a minimum score of seven in each of the three public benefit categories during the evaluation process to be eligible for funding.

Leave blank any public benefits that are not applicable to the proposed project.

### 20. Economic Benefits – ORS 541.673(2)

- a. Does the project create or retain jobs? If so, explain.

This proposal is requesting funding to hire employees to install the pipelines. We estimate the irrigation district will keep **15 or more laborers** employed during the non-irrigation season installing the pipeline.

We estimate the conservation work we have engaged in has directly or indirectly contributed to **18 or more jobs** in the area. We suspect it is far more than 18 but it is difficult to quantify. When contacted, the owner of Roman's Irrigation Supply indicated that he has grown from a staff of 4 employees in 2000 to 17 employees currently. He attributes this growth to the activities by VOID and the private landowners to improve irrigation infrastructure. Other local irrigation companies report similar growth and activity.

With funding from OWEB, NRCS and BOR, the number of sprinkler irrigation systems in the Malheur Basin has grown significantly. However, in almost all cases the ability to connect to a pressurized pipe- not an earthen lateral - is needed. A few sprinkler-pivot projects were installed that connect to the main irrigation canal, but that is rare. That is why this project is so important as it provides landowners on the lateral the ability to connect to pressurized water.

Funding this proposal will continue the positive economic activity in a depressed rural area. Much of the local agricultural laborers in Malheur County are members of the Hispanic community. Implementation of projects such as this will aid continuing this employment. Likewise, once these laterals are installed and the fields converted to sprinklers, future employment can be assured.

Agricultural products sold in Malheur county have a market value of \$353,326 (\$1,000). (2017)

[https://www.nass.usda.gov/Publications/AgCensus/2017/Online\\_Resources/County\\_Profiles/Oregon/cp41045.pdf](https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/Oregon/cp41045.pdf)

- b. Does the project increase economic activity? If so, explain.

Piping laterals has shown to be a local driver for the farm economy in Malheur County. There have been **grants totaling more than \$12 million in project money since 2000 spent on improving irrigation infrastructure**. It is only common sense to believe this has added greatly to the local economy because most of the money has been spent locally. This \$12 million does not include the cost share, most of it cash, provided by the landowners spending money to convert to sprinklers.

This spending has a multiplying effect on local economies. Research on spending on infrastructure projects such on highway projects indicates that for every dollar spent on the highway project 1.5 to 3 times that is re-spent in the local economy. Workers buy food, pay rent, buy gas and so forth (*Highway Grants: Roads to prosperity? (Sylvain Leduc and Daniel Wilson, Federal Reserve Bank of San Francisco Economic Letter)*).

More specific to spending in the Oregon natural resources' sector, *Ecotrust (2011)* published a short paper about Oregon's restoration economy. They estimate that **90% of the money spent on restoration stays local**; for every \$1 million spent on restoration 19 jobs are created;

and specific to Malheur County, they estimate that **restoration spending from 2001 to 2010 created 212 jobs and generated \$35 million in economic output.** Applying these figures to our proposed project the \$ 3.6 million requested should generate \$5.4 million to \$18 million in economic output and create or maintain 68 jobs.

Extension has found that irrigation supply companies all report increased activity in recent years. As stated before, Roman's Irrigation Company reports they needed to hire 13 more employees to keep up with the demand for new pivots. Extension has interviewed a few producers with new pivots, and they report that they are pleasantly surprised that pivots are paying for themselves faster than they expected.

- c. Does the project result in increases in efficiency or innovation? If so, explain.

Piping canals increases efficiency by saving water, delivers water to the farm more precisely, and in a timelier fashion. **VOID's average annual water supply is 87,000 acre-feet per year, and it is estimated they lose about 37% or 32,000 acre- feet. Most of the lost water is seeping into the ground and a smaller percentage is lost to evaporation.** The irrigation district estimates yearly losses in earthen lateral canals to be about 470 acre-feet per-mile annually. Yearly losses in earthen lateral canals are estimated to be about 470 acre-feet per mile per year. Installing the 55,000 feet of pipe requested in this proposal will save about **4,896 acre-feet per-year.** Enabling farmers to convert to sprinkler will **save an estimated 0.7 acre-feet per-acre annually** for each acre converted. This will allow VOID to more readily meet their 2,000 acre-feet pool objective for bull trout.

- d. Does the project result in enhancement of infrastructure, farmland, public resource lands, industrial lands, commercial lands or lands having other key uses? If so, explain.

The purpose of this proposed project is to modernize the infrastructure of the irrigation system in the Vale Bench area. Improving the delivery of irrigation water is a direct result of piping laterals. This results in improved water management and enables farmers to cost effectively convert to sprinkler or drip irrigation.

When farmers convert, they upgrade their farming system with new buried mainline pipes, doing away with outdated dirt or cement ditches. Booster pumps and electrical systems are installed to run the pivots. Many farmers are installing drip irrigation systems to take advantage of the gravity pressure supplied by the pipelines. Without the pipelines most of these upgrades would not occur.

**We estimate about \$12 million has been spent on upgrading irrigation infrastructure in the Vale area.**

- e. Does the project enhance economic value associated with tourism or recreational or commercial fishing, with fisheries involving native fish of cultural significance to Indian tribes, or with other economic values resulting from restoring or protecting water instream? If so, explain.

The Vale Oregon Irrigation District (VOID) obtains much of its irrigation water from Beulah Reservoir. The federally listed bull trout resides in the reservoir during the winter months and our project will help the District maintain a carryover pool. The bull trout is a species of significance to the Burns-Paiute Tribe and to the fisheries community in general.

Although we do not have data yet, USGS has been studying the effects of the 2,000 acre-feet the District has left in Beulah as a carryover pool since 2010. We have not seen any published reports.

It is safe to assume that the health of all the fisheries in the reservoir will improve. We can assume if this is improving fish and aquatic habitat, all species will benefit, even stocked fish. This will lead to better recreational fishing at Beulah Reservoir and is also an important economic driver in Malheur County.

Recreational fishing in Malheur County's reservoirs— including Warm Springs, Owyhee, Malheur, Bully Creek, and Beulah- among others – draws many local and out-of-state fishermen and helps to increase county and local business revenues. The carry-over pool will enable the reservoir to fill quicker and with our increased water efficiency will empty slower. And we will keep water in the reach below the reservoir longer. Logically, this will lead to increased tourism through more boating and swimming at the reservoir as we are able to leave more water in the reservoirs for a much longer period.

- f. Does the project result in increases in irrigated land for agriculture? (which may include increasing irrigated acres, agricultural economic value, or productivity of irrigated land) If so, explain.

In recent years, farmers have let many fields lie fallow because of the shortage in irrigation water. Estimates are that about 20% of the land within the Malheur was left fallow in 2015 (Bill Buhrig, OSU Extension). Cropping patterns have changed as well. Crops that do not require irrigation or late-season irrigation have increased. Extension estimates the conversion to these kinds of crops accounted for about 30% of the acres in 2015 (Bill Buhrig, OSU Extension).

The 2021 irrigation season was probably worse than the 2015 season. We estimate 25 to 30% of the acres were left fallow that year. However, the 2022 and 2023 irrigations seasons were much better, but it is likely that short water years like 2015 and 2021 will return.

With our continued improvements in water conservation that this proposal represents, we will help minimize the number of fallow acres and help farmers raise more productive crops

21. Environmental Benefits – ORS 541.673(3)

a. Does the project result in measurable improvement in protected streamflows? If so, complete the subquestions below and explain.

i. Complete the table below:

- List the existing water right information of the source water right to be moved, protected, or transferred instream, and
- Name the legal means proposed to permanently dedicate and protect water instream by the Oregon Water Resources Department.

**IMPORTANT Note:** You **MUST** include the legal protection of water instream to receive a score for this public benefit. Projects which permanently dedicate water instream will extra points. **If awarded funding, the legal protection of water instream will be a condition of funding. Contact the Grant Coordinator for any questions about these grant conditions.**

**Legal Protection of Water Instream** (add rows to table as needed)

Water right permit or certificate number to be used in transaction for instream protection (e.g., irrigation, reservoir, or AR/ASR; S-####)	Rate(s) (cfs)/duty (ac-ft/ac) or volume (ac-ft) of the contributing water right	Estimated rate (cfs)/duty (ac-ft/ac) or volume (ac-ft) of water to be legally protected instream	Percent (%) of right to be legally protected instream	Transaction for Legal Means of Instream Protection (chose one)
				<input type="checkbox"/> Instream transfer <input type="checkbox"/> Allocation of Conserved Water <input type="checkbox"/> Above-ground storage release <input type="checkbox"/> Below-ground storage release
				<input type="checkbox"/> Instream transfer <input type="checkbox"/> Allocation of Conserved Water <input type="checkbox"/> Above-ground storage release <input type="checkbox"/> Below-ground storage release

ii. **If using the Allocation of Conserved Water Program:** Identify the percent of the conserved water that will be permanently dedicated instream and protected by the Oregon Water Resources Department: \_\_\_\_\_%

- iii. Describe how the protected streamflows accomplish one or more of the following:
- (A) Supports the natural hydrograph;
  - (B) Improves floodplain function;
  - (C) Supports state- or federally-listed sensitive, threatened or endangered fish species;
  - (D) Supports native fish species of cultural importance to Indian tribes; or
  - (E) Supports riparian habitat important for wildlife:

**C & D)** Our project will benefit the federally listed bull trout, which is also a species of significance to the Burns-Paiute Tribe. A 2005 Biological Opinion written by the USFWS directed the Bureau of Reclamation (BOR) to implement measures to minimize the effect Agency Valley Dam on the habitat of the federally listed bull trout. Carryover pool volume

recommendations are needed to support a forage base for bull trout in Beulah Reservoir. A reservoir carryover pool can sustain a prey base for returning fish.

In the past, dam operations did not consider the importance of a carryover pool. Water levels fluctuated widely and depended only on water users' needs during the late summer and fall. In low water years, drawdown was 100%. Effects of drawdowns are difficult to evaluate because data is sparse. USGS studied the reservoir twice, during the winters of 2002-03 and 2007-09. The first was a moderate draw down and the second an extreme drawdown. There is not yet enough information to make scientifically based recommendations. The Bureau of Reclamation continues to study the problem.

**Vale Oregon Irrigation District has agreed to maintain a minimum pool of 2,000 acre-feet per-year.** This gives researchers more time to determine if this size of carryover pool will benefit bull trout.

The Districts' water conservation efforts made this carry-over pool possible. The latest published report in 2019 by the BOR, indicates the reservoir never fell below the 2,000-acre feet threshold. This is a significant achievement enabled by projects such as this one. Note the gradual decline in the number of days the reservoir was below the threshold in the following table.

**Year: Number of days below 2,000-acre feet**

2007: 60 days  
2008: 34 days  
2009: 53 days  
2010: 28 days  
2013: 45 days  
2014: 56 days  
2015: 35 days  
2016: 15 days  
2017: 0 days  
2018: 0 days

The Bureau of Reclamation and VOID have studied several alternatives to help maintain a sufficient carry-over pool and meet the needs of the irrigators. Some options discussed included raising dam height, dredging sediment out of the reservoir and continuing water conservation efforts. While BOR has not made a definitive conclusion, preliminary analysis shows that conservation is the most practical, cost-effective and beneficial way to address bull trout habitat needs in Beulah.

- b. Does the project result in water conservation? If so, explain.

VOID's average annual water supply is 87,000 acre-feet per-year and they estimate loss at 37% or 32,000 acre- feet. Most of the lost water is through seepage into the ground and a smaller percentage is lost to evaporation. They estimate yearly losses in the earthen lateral canals to be about 470 acre-feet per mile per year. **If we install the 55,000 feet of pipe (10.4**

**miles) are asking for in this proposal, we will save about 4,896 acre-feet per year.**

These estimates are calculated by measuring how much water is diverted from the main canal into the lateral canal. VOID then measures the amount applied to each field served by that canal. The difference between what is diverted and what is applied is the loss to seepage and evaporation.

After more than 20 years of monitoring, we have a good estimate of ditch loss. Our conservative estimate is 470 acre-feet of loss per mile of canal per year.

An example of how we arrived at this estimate is the 185 lateral. Ditch riders open the head gate at a measured rate of 35 acre-feet. They know that 26.5 acre-feet is delivered to individual fields because each field has a measuring device. This is about a 25% loss.

We know the canal is 4.7 miles long. Thus, we estimate the loss to be about 1.8 acre-foot per mile or just about 1 cfs per mile of canal.

The number of days we deliver water to each field varies from year to year. But with ditch losses of up to 25% it only takes about 50 days to hit our estimate of around 450 to 470 acre-feet of loss per mile per year. If you add in the losses from a couple days of charging the canal each year, we feel our estimates are conservative.

VOID has upgraded its ability to measure water significantly in the past few years. The pipelines allow for more sophisticated measuring devices to be installed for each field.

The headwalls installed for the pipelines will allow for more precise measurement of the water diverted from the main canal. VOID is in the process of installing real-time measuring devices within the main canal to get even more precise data on water losses and improve water management.

Another aspect of water conservation addressed by this project is improved on-farm efficiency. The pipelines make converting to sprinklers feasible. VOID estimates, based on NRCS data and VOID observations, that furrow irrigation is only 30-40% efficient. Properly managed center-pivot sprinklers are about 75 to 85% efficient and drip approaches 100% efficiency. It follows that about **0.7 acre-feet per-acre per-year could be saved** when the fields served by these pipelines are converted to sprinkler.

We fully expect that with more piping there will be more sprinklers. Landowners have spent a great deal of their own money in converting and we have been successful in obtaining OWEB, NRCS' EQIP, and other grants to install improved on-farm irrigation systems.

- c. Does the project result in measurable improvement in groundwater levels that enhances environmental conditions in groundwater restricted areas or other areas? If so, explain.

Malheur County groundwater has been studied for many years, mostly because of concerns

about contamination from nitrogen and pesticides. DEQ declared northern Malheur County to be a “Groundwater Management Area” in the late 1980s.

At the same time, Gannett (1990. *Groundwater Report #34. WRD*) studied groundwater levels and contaminant transport times. He found that it would take considerable time for the contaminates to flush through the system, and that water levels appeared to be stable at that time (Gannett, 1990). The Water Resources Department monitors wells in the basin and current information shows that water levels remain about the same (WRD, presentation at the Malheur Watershed Council, September 2015).

However, under continuous dry years, interest in drilling wells has increased. Most of these wells are or will be supplemental to surface water irrigation. We have shown that water conservation leads to a 2-3 week longer irrigation period. Thus, with our continued water conservation efforts **we can delay the use of supplemental wells by 2-3 weeks in dry years** and in moderate years we may be able to defer their use all together. Also, as more earthen laterals are piped, that time frame should increase. Thus, while there may be some recharge loss to the shallow aquifer, withdrawals from the deeper aquifer will be reduced by our piping efforts.

- d. Does the project result in a measurable improvement in the quality of surface water or groundwater? If so, explain.

Oregon DEQ ranks the Malheur River to be in the top 2 most polluted rivers in Oregon (DEQ. 2014. OWQI Report). DEQ set Total Maximum Daily Load targets for the Malheur Basin in 2010. They identified sediment, nutrients, (Total Phosphorus in particular) and bacteria as the main water quality concerns. They also concluded that flood irrigation is the primary human activity that leads to these problems. This project helps implement DEQ’s TMDLs by allowing farmers to switch to irrigation methods that reduce or eliminate agricultural runoff.

In DEQ’s 2020 OWQI Report (2021), the Malheur River still is rated as having “Very Poor” water quality. However, the last 7 years the downward trends have stopped. In fact, there has been an improving trend in bacteria levels at the mouth of the river. Other encouraging signs of improvement in the Malheur Basin are that Bully Creek has a significant improving trend for phosphorous levels, and Willow Creek has an improving trend for bacteria. The bright spot is that the Malheur River below Little Valley has an improving trend for nitrogen, phosphorus, and bacteria levels.

Flood and furrow irrigation systems present water quality and water quantity concerns. As irrigation water moves over the surface of cropland or pasture, it picks up bacteria and nutrients from manure, sediment and nutrients from cropland soils. The drainage water moves to downstream water users and eventually into the Malheur River. This kind of irrigation also requires more applied water so that the water reaches the bottom of the field in a timely manner to allow for infiltration in the lower part of the field.

The Malheur Watershed Council has been intensively monitoring the Malheur River since 1997. We have measured the river itself, drains entering the river, and individual fields. Our

conclusions are that tailwater from irrigated pastures and row crop fields have a significant detrimental effect on water quality. The Malheur meets most of the state's water quality standards in the reaches above the irrigated portion of the basin. However, it is among the most polluted rivers in the state at the mouth.

Our on-farm monitoring leads us to the following conclusions. When compared to the applied irrigation water:

- Bacteria levels increase 23-fold in tail-water from irrigated pastures.
- Total phosphorus levels increase 3.7 times in tail-water from furrow irrigated row crop fields. Phosphorus amounts average about 10.4 pound per acre per year lost with furrow irrigation.

Thus, conversion to sprinkler or drip systems eliminates field runoff and erosion, greatly reducing pollutant loads going into the Malheur. Conversion of earth irrigation water laterals to pipe facilitates the conversion to efficient irrigation systems because growers receive pressurized water.

We estimate that approximately 35,000 acres have been converted to sprinklers in the Malheur River Basin since 2000. Applying the results of our monitoring, we estimate that we are preventing billions of colonies of bacteria, 350,000 tons of sediment and almost 375,000 pounds of phosphorus from entering streams in the basin each year. This is significant but there is still a long way to go. The completion of this project will only increase farmers' ability to convert to sprinklers or drip irrigation and continue the trend of improving water quality.

### **Groundwater**

As stated earlier, DEQ designated northern Malheur County as a groundwater management area in the late 1980s. A quote from Gannett's report summarizes the situation with groundwater very well.

"Reducing the level of ground water contamination will require reducing the amount of irrigation water lost to deep percolation, reducing the amount of nitrogen in the water that is lost to deep percolation, and reducing the amount of nitrogen in tailwater from the fields discharging to ditches. Irrigation and nitrogen application should be managed to ensure that nitrogen in the soil profile is not flushed below the rooting depth of the crop during irrigation." Gannett 1990.

OSU Extension, the Malheur Experiment Station, the Council, the SWCD, NRCS, DEQ and ODA have worked with growers to cut their application of fertilizers and pesticides with great success. "Multiple lines of evidence suggesting improving water quality (including the statistically significant decreasing area-wide trend) provide sufficient evidence to conclude there has been an overall improvement in groundwater nitrate concentrations from 1991 through 2012." (DEQ. 2015. Groundwater Trend Analysis Report.) DEQ concludes that while progress has been made there is still much more work to be done.

The piping of canals and converting to sprinklers is the second component in protecting groundwater.

- e. Does the project increase ecosystem resiliency to climate change impacts? If so, explain.

Improving infrastructure and becoming more efficient with water is one of the best ways farmers can adapt to climate change (John Stevenson, former OSU Regional Climate Specialist). Most estimates are that eastern Oregon will experience longer and drier summers and less snow during the winter. This means more short-water years, as we have experienced in the last 10 to 12 years.

- f. Does the project result in improvements that address one or more limiting ecological factors in the project watershed? If so, explain.

The Oregon Watershed Enhancement Board has developed a list of limiting ecological factors in each watershed in Oregon. For the Lower Malheur River Watershed these factors are:

*-Water quality*  
*Bacteria Nutrients Sediment*  
*-Degraded aquatic habitat*  
*-Degraded riparian habitat*

DEQs' 2010 TMDL verifies these are the leading ecological problems in the Malheur River Basin. Our proposed project directly addresses the first and perhaps most critical ecological limiting factor, water quality.

Flood irrigation of pastures is the primary source of bacteria and furrow irrigation of row crops is leading cause of sediment and nutrients entering the Malheur River.

As we have stated previously, installation of pipelines leads to sprinklers and sprinklers eliminate irrigation induced erosion and tailwater from entering the Malheur River. With less sediment and nutrients in the system aquatic habitat will improve.

This project is just one of many we have implemented in the last 20 to 25 years. We are seeing significant improvement in water quality as the result of our work. However, we still have a long way to go. We need to keep implementing projects such as this one.

We are not addressing riparian habitat in this proposal although the Council is working on this issue on the Malheur and other areas of the watershed.

22. Social/Cultural Benefits – ORS 541.673(4)

- a. Does the project promote public health and safety and of local food systems? If so, explain.

With improvements to irrigation system infrastructure, local food systems will be improved. Fewer acres will be left fallow, and a greater variety of crops will be grown. Crop yields will improve as well. NRCS studies show a 25 to 35% increase in crop yield under sprinklers. This is attributed to more uniform application of water and better timing of application. Producers

can tailor their irrigation to meet crop water demands. Many have installed soil moisture sensors to help them apply in an even more precise manner. By using pivot systems to automatically apply fertilizers and other farm chemicals (chemigate), exact amounts can be used at precise locations and applied without waste or overage. Areas not requiring any or smaller amounts of chemicals or fertilizers can either be skipped or have rates lowered during the application. Precision agriculture with Smart Technology enables applications of less chemicals more accurately which leads to enhanced food safety.

Increased yields are expected for alfalfa and irrigated pasture as well. According to the Montana Water Bureau, "one would expect yields to be slightly higher in properly designed center-pivot systems since these systems can uniformly apply small amounts at frequent intervals and thus avoid the larger swings in soil moisture associated with flood systems that apply water every 10-14 days".

- b. Does the project result in measurable improvements in conditions for members of minority or low-income communities, economically distressed rural communities, tribal communities or other communities traditionally underrepresented in public processes? If so, explain.

According to the Oregon State Employment Bureau "Poverty is a serious issue in Malheur County." Based on U.S. Census Bureau statistics, Malheur County's 2012 poverty rate was 25.8 percent, which was Oregon's highest. Things have improved slightly in recent years with the poverty rate declining to 19.5 percent in 2020, but that is still very high. According to Oregon Employment Department data, the average job in Malheur County paid \$43,313 in 2020.

Here's a quote from the Oregon Center for Public Policy:

"The highest poverty rate in Oregon is in Malheur County, where nearly one in four residents has income below the poverty level.

Rural areas have higher unemployment rates, a lower minimum wage floor, and substantially lower per capita personal income than urban areas. These factors likely contribute to higher levels of poverty."

As we discussed earlier, spending on natural resources benefits the local economy. Most of the money stays in the local economy and there is a 1.5 to 3.0 multiplier effect. Our spending on this project will benefit the local economy.

According to the **U.S. Census Bureau**, the population of Malheur County, Oregon is **31,879** people, of which **35.5%** are Hispanic or Latino. Malheur County's census comprises the eastern half of the city of Ontario. It is the smallest, most densely populated census tract in an otherwise rural county. It is very high in number of households getting by on less than \$10,000 a year (21 percent), very high in number of Hispanic residents (54 percent), and is very high in residents who speak a language other than English in the home (45 percent). Only 65 percent of the residents of the eastern part of Ontario completed high school.

### **Tribal Interests**

The Burns Paiute Tribe has been a valued partner for the watershed council for many decades. They have a vested interest in working to improve water quality in the basin, and the tribe is keenly interested in recovering bull trout populations.

Beulah Reservoir seasonally contains migratory bull trout a species that the Tribe has long sought to recover. Bull trout need cold, clean water in order to survive and a portion of the North Fork Malheur River populations utilize Beulah to grow and mature.

However, given the current drought, the needs of native fish such as bull trout and those of irrigators can lead to drawdown of the reservoir below suitability for this species. The proposed project is a positive step towards minimizing that conflict while increasing the likelihood that both needs are met.

Implementing this project will improve downstream conditions in the Snake River. Snake River fish are culturally important to the Nez Perce Tribe.

Water quality improvement in the region is critical for fisheries, which are currently challenged because of mercury contamination. A recently published study on mercury in Brownlee Reservoir provided strong evidence that irrigation induced erosion is a major source of inorganic mercury to the Snake River system (Baldwin et al, 2023). High mercury levels in fish can cause human health concerns when consumed. Indigenous people are particularly vulnerable because they tend to eat more fish.

- c. Does the project promote recreation and scenic values? If so, explain.

Cleaning up the Malheur River so it doesn't look like chocolate pudding in the summer months will go a long way to improving scenic values in the area. As one farmer described conditions along the river in the summer months, *"You don't have to be religious to believe someone could walk on water if you look the river in the summer."*

The State's bacteria standard is designed to protect swimmers and boaters from water borne illnesses. Any reductions in bacteria levels will help encourage more water-based recreation in the Malheur area.

Having a minimum pool in Beulah Reservoir will enhance scenery. A pool of water is much better looking than an empty mud flat behind the dam all winter. We have already discussed that we believe fishing opportunities in the reservoir will be improved because of the carry over pool. We also think swimming and boating will improve as well. The reservoir is more likely to fill and stay fuller longer because of our water conservation efforts.

The downstream Snake River experiences algal blooms every summer, sometimes associated with recreational advisories due to presence of toxins. Downstream waters are affected by upstream watershed practices. DEQ's Snake River TMDL (2004) set a phosphorus limit for tributaries, including the Malheur, to help mitigate these blooms. Piping projects that

facilitate irrigation modernization and reduction in agricultural runoff will help make progress on these water quality goals for the Snake River.

- d. Does this project contribute to the body of scientific data publicly available in this state? If so, explain.

With OWEB and DEQ 319 funding the Watershed Council has conducted a rigorous water quality monitoring program in the Malheur Basin. The Council wrote a comprehensive report in 2021. Go to <https://www.malheurwatershed.com> for the complete report.

ODFW and the Burns-Paiute Tribe are proposing to install a weir near Beulah Reservoir to determine bull trout migration and survival in and out of the reservoir. If installed this will help us determine the success of maintaining a minimum pool for winter habitat.

- e. Does this project promote state or local priorities, including but not limited to the restoration and protection of native fish species of cultural significance to Indian tribes? If so, explain.

Restoration of bull trout populations is a priority for Oregon. It is one of the key species listed in ODFW's Conservation Strategy (2016). As stated before, recovering cold- water fisheries in the Malheur Basin, which includes the federally listed bull trout, is a priority for the Burns-Paiute Tribe.

NRCS has designated the Vale Bench area to be a priority area for their work

- f. Does this project promote collaborative basin planning efforts, including but not limited to efforts under Oregon's Integrated Water Resources Strategy? If so, explain.

Our proposal furthers the goals of each of the collaborative basin planning efforts:

*Malheur River Watershed Action Plan. 2015. Malheur Watershed Council.*

Goals are to improve water quality, upland and riparian habitat, bank stabilization and outreach.

*Malheur River TMDL. 2010. Oregon DEQ.* In the Malheur Basin, TMDLs are established for three water quality parameters: chlorophyll, temperature, and bacteria. To reduce chlorophyll, a proxy for algal growth, the TMDL determined that reductions in phosphorus loading to surface waters is needed. The TMDL's Water Quality Management Plan includes proposed management strategies that cause reduction in sediment loading, which will also reduce bacteria, phosphorus, and pesticide loading. Practices to improve irrigation and reduce agricultural runoff are included as important TMDL implementation efforts under this plan.

*Malheur River Agricultural Water Quality Management Plan. 2021. ODA*

*Bull Trout Recovery Plan. 2015. USFWS. Upper Snake River Recovery Unit. Pg. E-40.*

*Oregon Conservation Strategy. 2016. ODFW -- Northern Basin & Range Ecoregion. Develop shared priorities to address conservation needs. The Strategy notes that stream water quality in the Northern Basin Ecoregion is poor compared to other ecoregions in Oregon. Key conservation issues include water quality and quantity. Water is limited and fully allocated in storage and other uses.*

*Bull Trout Biological Opinion. 2005. USFWS*

*Snake River-Hells Canyon TMDL. 2004. Idaho and Oregon DEQ. This TMDL set allocations for the Malheur River to help mitigate water quality issues in the downstream Snake River. Allocations were set for total phosphorus and total suspended solids. The targets set for the Malheur require large reductions in current loading. While these goals are not yet met, water quality is showing improvement in the region. Providing piped laterals will allow continued progress by allowing more farmers to convert to sprinkler and reduce or eliminate runoff.*

*Northwest Power Conservation Council's -- Malheur Subbasin Plan (2004) prepared for the Malheur Watershed Council and Burns-Paiute Tribe.*

## VII. Project Budget

**Instructions:** Please answer the following questions about the proposed project budget using the table provided. All Grant and Match Funds must be allowable costs as described in the OWRD’s Grant Budget Procedures and Allowable Costs document.

23. Please provide an estimated line-item budget for the proposed project. Please note that indirect costs **are not** an allowable grant expense. See the Budget Procedures and Allowable Costs on the OWRD [Applications, Forms, and Guidance webpage](#) for further guidance.

OVERALL PROJECT BUDGET Line Items	In-Kind Match	Cash Match Funds	OWRD Grant Funds	Total Cost
Staff Salary/Benefits			\$2,205,000	\$2,205,000
Contractual/Consulting			\$188,853	\$188,853
Supplies and Supplies		\$2,400,000		\$2,400,000
Machine Costs			\$885,000	\$885,000
Travel				
Equipment (must be approved)				
Other: Admin		\$120,000	\$327,385	\$447,385
<b>Total</b>		<b>\$2,520,000</b>	<b>\$3,601,238</b>	<b>\$6,121,238</b>

## VIII. Match Funding

24. **Instructions:** Fill out the table below and attach the appropriate documentation for both secured and pending match (add rows as needed). Label the documentation as Attachment #3.

Applicants must have one of the following sources of federal match:

- Natural Resources Conservation Service funds associated with an authorized watershed plan
- U.S. Bureau of Reclamation WaterSMART grant
- U.S. Environmental Protection Agency’s grants that are eligible to be on the Department of Environmental Quality’s Intended Use Plan

For secured funding, you must attach a letter of support or other documentation from the match funding source (including match from your own organization) that:

- Specifies the dollar amount identified for this project,
- Equals the dollar amount shown in the “Amount/Dollar Value” column in the table below,
- Describes the work to be accomplished through the match.

For pending resources, you must attach other written documentation showing a request for match funding. Documentation must:

- Include the amount of match funding requested or anticipated,
- Include the project name,
- Note the date on which a future funding application will be submitted,
- Identify the funding program from which funds are pending, and
- Provide evidence that the project is eligible for the funding program identified.

The total match funds listed below must match the amounts in Section I and Question 23.

Match Funding Source (if in-kind, briefly describe the nature of the contribution)	Type (✓ only one)	Status (✓ only one)	Amount/ Dollar Value	Date Match Funds Available (Month/Year)
U.S. Bureau of Reclamation WaterSMART grant	<input checked="" type="checkbox"/> cash <input type="checkbox"/> in-kind	<input checked="" type="checkbox"/> secured <input type="checkbox"/> pending	\$2,520,000	February, 2024
	<input type="checkbox"/> cash <input type="checkbox"/> in-kind	<input type="checkbox"/> secured <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in-kind	<input type="checkbox"/> secured <input type="checkbox"/> pending		
<b>Total of Match Funds</b>			= \$2,520,000	

# IRRIGATION MODERNIZATION FUNDING

## APPLICATION CHECKLIST

**Please use this checklist to ensure that your application is complete, and you have included required attachments with your application.** We will not accept an application deemed ineligible or incomplete in any section.

### ***Application:***

- X Section II is signed by Applicant/Authorized Person and Co-Applicant/Authorized Person (if applicable).
- X All questions have been addressed.

### ***Required Attachments:***

- X Attachment 1 – Site map (Question 8)
- X Attachment 2 – Documentation of match funding (Question 24) includes the following:
  - a) Match documentation for **all** match funding sources listed in the match fund table.
  - b) Match funding documentation that clearly identifies the dollar amount and describes the work to be accomplished with the match.

### ***Optional Attachments:***

- Property access authorization (Question 10): Attachment #
- Letters of support (Question 13): Attachment #
- Plans, designs, and/or engineering specifications: Attachment #
- Secured permits and regulatory approvals needed to implement the project (Question 19): Attachment #
- Other: Attachment #

# **Location Maps: Attachment #1**

# Piping Lateral Canals in the Vale Bench: Building on Experience

Lat 43.9655 Long -117.3712

Bully Creek

Malheur River

## Legend

- Proposed Pipelines
- Lateral 185
- Lateral 195
- Lateral 192
- Lateral 188
- Lateral 176

6 3 0 6 Miles



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, Kong, Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

# Piping Lateral Canals in the Vale Bench: Building on Experience

Lat 43.9655 Long -117.3712

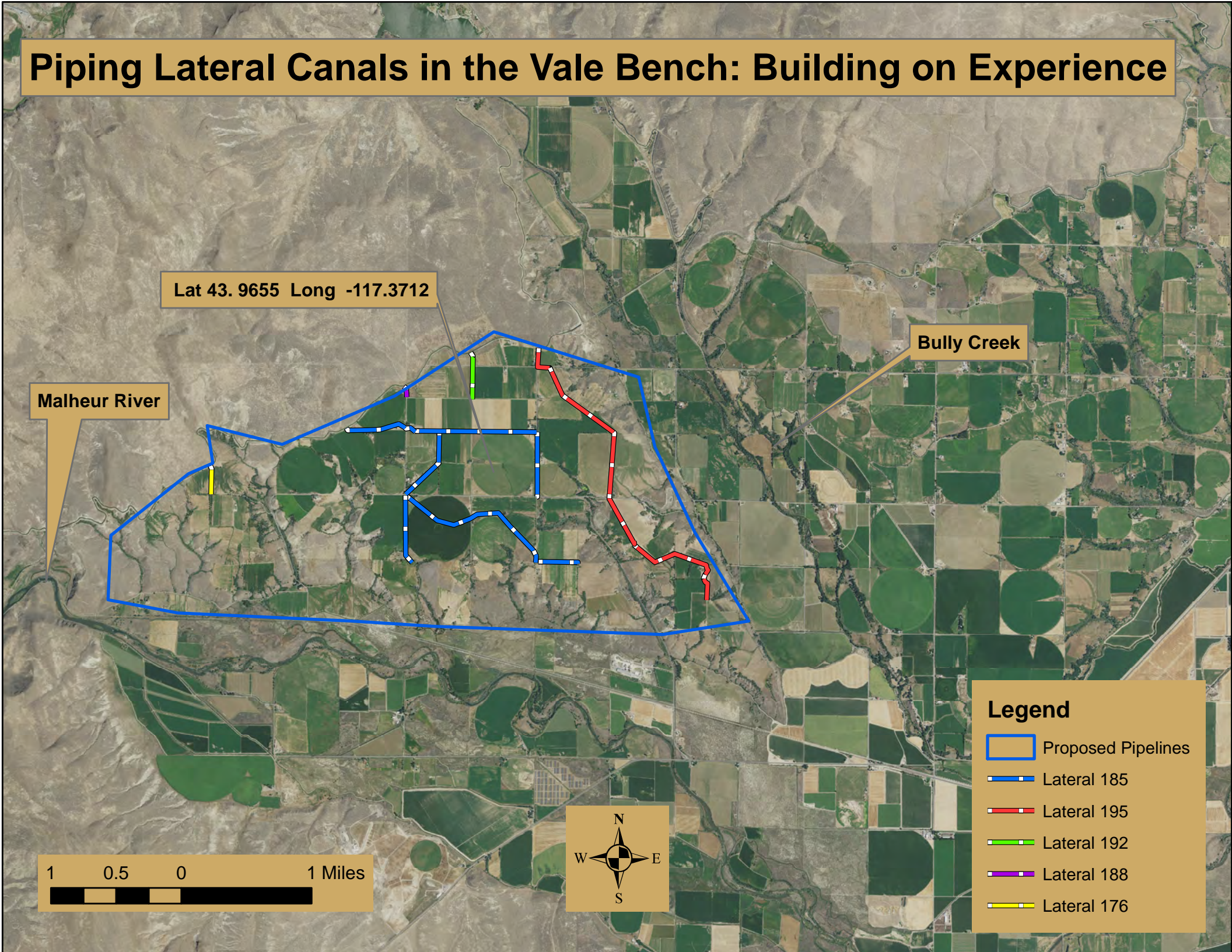
Malheur River

Bully Creek

## Legend

- Proposed Pipelines
- Lateral 185
- Lateral 195
- Lateral 192
- Lateral 188
- Lateral 176

1 0.5 0 1 Miles



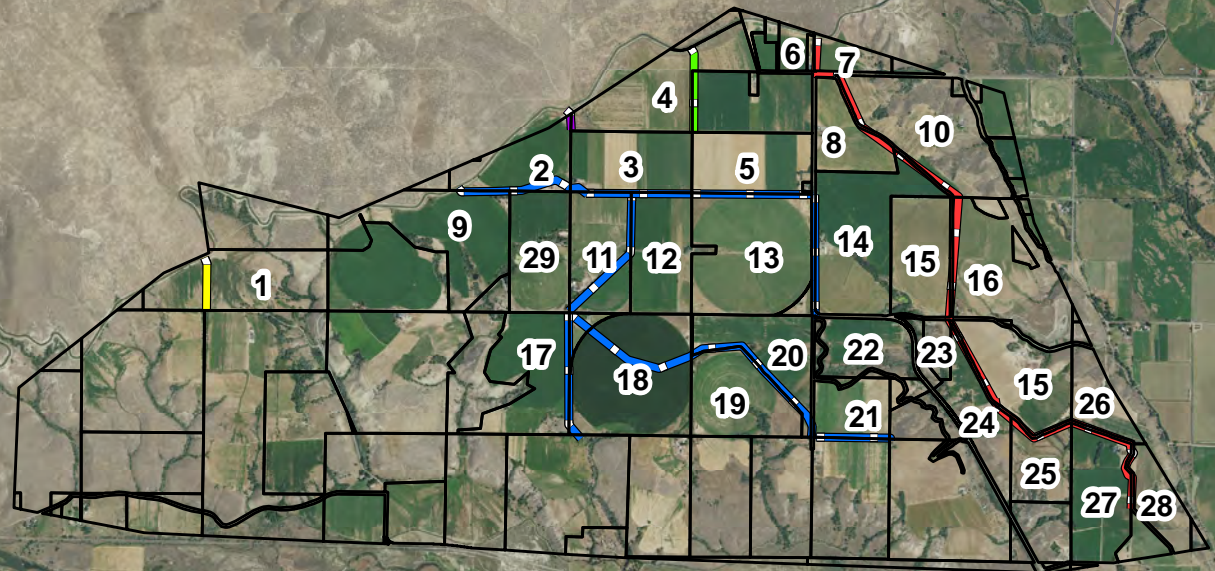
# Map with Tax lot Numbers:

Note that the numbers on the map correspond to the Map # on the far right hand column of the tables that follow the map.

# Piping Lateral Canals in the Vale Bench: Building on Experience

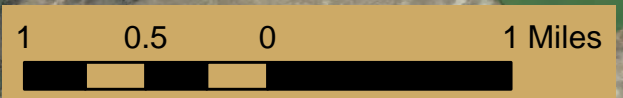
Malheur River

Bully Creek



**Legend**

- Affected Taxlots
- Lateral 185
- Lateral 195
- Lateral 192
- Lateral 188
- Lateral 176



Tax Map No. (e.g. 12S06W-12714)	Tax Lot No. (e.g. 100)	Ownership Type (✓ One)	Property Owner of Record	What type of activity occurs on this site as part of project implementation? (✓ all that apply)	If applicable, identify the type and extent of ground disturbing activity (e.g. test pits, borings, new road construction, excavation, etc.).	Property identified & labelled on the map (x when complete)	Map #
18S43E	6200	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement AMODEI, MERVYN L & LINDA C adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 176	x	1
18S43E	5500	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement TIBBITTS, WILLIAM RAY & LORNA adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	2
18S43E	5400	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement HOLLENBECK, Travis and Katheryne Adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	3
18S43E	5300	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement Allum Angela G Adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	11
18S43E	5200	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement HYDE, RANDY adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	12
18S43E	5000	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement BEAUMONT FAMILY TRUST adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	13
18S43E	4900	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement WHITTENBURG, JOSEPH F & DENISE adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	5
18S43E	8300	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement LANG FAMILY TRUST adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	14

Tax Map No. (e.g. 12S06W-12714)	Tax Lot No. (e.g. 100)	Ownership Type (✓ One)	Property Owner of Record	What type of activity occurs on this site as part of project implementation? (✓ all that apply)	If applicable, identify the type and extent of ground disturbing activity (e.g. test pits, borings, new road construction, excavation, etc.).	Property identified & labelled on the map (x when complete)	Map #
18S43E	8200	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement VALE RANCHES LLC adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	18
18S43E	8400	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement LANG FAMILY TRUST adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	15
18S43E	8500	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement HUTCHINGS STEPHEN MC & ALICIA adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	16
18S43E	7900	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement PATTERSON, ROBERT R & DONNA E adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	17
18S44E	3100900	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement ATKINSON REVOCABLE TRUST adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 185	x	21
18S43E	4000	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement PALMER FAMILY TRUST adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 192	x	4
18S44E	8100	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement RUSSELL, CHARLES & BARBARA adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	10
18S44E	8200	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement ROCKEFELLER, SHANEY adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	8

Tax Map No. (e.g. 12S06W-12714)	Tax Lot No. (e.g. 100)	Ownership Type (✓ One)	Property Owner of Record	What type of activity occurs on this site as part of project implementation? (✓ all that apply)	If applicable, identify the type and extent of ground disturbing activity (e.g. test pits, borings, new road construction, excavation, etc.).	Property identified & labelled on the map (x when complete)	Map #
18S44E	8400	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement ATKINSON REVOCABLE TRUST adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	20
18S44E	8500	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement ATKINSON REVOCABLE TRUST adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	19
18S44E	8800	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement RODGERS, REID R & KARYN adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	26
18S44E	8900	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement TORREY, JACK LEE adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	27
18S44E	9000	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement EP MINERALS, LLC adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	28
18S44E	3100200	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement WINEBARGER VIRGIL adjacent private land	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	25
18S43E	5900	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement JACOBS, JERRY R & LAURA Adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	9
18S43E	4400	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement Copenhaver Crystal Adjacent Private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	6
18S44E	1901100	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement HIBBITTS, LONNIE & PAMELA K adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	7
18S44E	3100600	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement ATKINSON REVOCABLE TRUST adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	22

Tax Map No. (e.g. 12S06W-12714)	Tax Lot No. (e.g. 100)	Ownership Type (✓ One)	Property Owner of Record	What type of activity occurs on this site as part of project implementation? (✓ all that apply)	If applicable, identify the type and extent of ground disturbing activity (e.g. test pits, borings, new road construction, excavation, etc.).	Property identified & labelled on the map (x when complete)	Map #
18S44E	3100400	X public Private	VOID/BOR Easement OREGON, DEPT OF TRANSPORTATION	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	23
18S44E	3100300	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement WILSON, KYLE J & CRYSTAL L adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	24
18S43E	5600	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement Hyde Randall adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	29
18S43E	4600	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	VOID/BOR Easement Ryan and Jesse Steele adjacent private	<input type="checkbox"/> Access site <input checked="" type="checkbox"/> Project work <input type="checkbox"/> Ground disturbing activity <input type="checkbox"/> Other impact:	Pipe canal 195	x	30

**BOR Award Letter/Match  
Attachment #2**



# United States Department of the Interior

BUREAU OF RECLAMATION  
P.O. Box 25007  
Denver, CO 80225-0007



IN REPLY REFER TO:  
84-27814

1.3.11

April 2023

VIA ELECTRONIC MAIL ONLY

Malheur Watershed Council  
Attn: Ken Diebel  
710 SW 5th Ave.  
Ontario, OR

Subject: Funding Opportunity No. R23AS00008 – WaterSMART Grants: Water and Energy Efficiency Grants for Fiscal Year 2023 – Application Review Status, Your Application Titled, “Piping Lateral Canals in the Vale Bench” (WEEG-143)

Dear Mr. Diebel:

The Bureau of Reclamation (Reclamation) is pleased to inform you that your application for WaterSMART Grants: Water and Energy Efficiency Grant funding was among those receiving the highest ratings and is now being considered for award of a financial assistance agreement with funding available through the Bipartisan Infrastructure Law (BIL).

Your application included a request for \$2,520,000 to complete your proposal titled, “Piping Lateral Canals in the Vale Bench.” Reclamation anticipates awarding Federal funding available through the BIL in the amount of \$2,520,000 for your proposed project.

All new financial assistance awards for infrastructure projects must meet Buy America requirements. See OMB Memorandum M-22-11 at <https://www.whitehouse.gov/wp-content/uploads/2022/04/M-22-11.pdf> and the Department of the Interior “Buy America” Domestic Sourcing Guidance at <https://www.doi.gov/grants/buyamerica> for further details.

In addition, Section 41101 of the BIL requires that all laborers and mechanics employed by contractors or subcontractors to carry out a project funded through the BIL to be paid at prevailing wage rates, as determined by the Secretary of Labor in accordance with Subchapter IV of Chapter 31 of Title 40, United States Code (commonly referred to as the Davis-Bacon Act). Note that this requirement may not apply to some projects, such as rebate programs for water conservation projects implemented by homeowners. Further details about this requirement will be discussed during development of the financial assistance agreement for your project. For more information on Davis-Bacon requirements, see <https://www.dol.gov/agencies/whd/fact-sheets/66-dbra>. Reclamation will be scheduling a webinar with you and other new recipients to discuss the process for development of financial assistance agreements and next steps.

In working with you to develop your financial assistance agreement, Reclamation will closely

review the activities outlined in your proposal to ensure that all activities are eligible for funding and that the proposed costs are allowable under financial assistance regulations. If some costs or activities are determined to be ineligible or unallowable, Reclamation will work with you to refine the scope of work and budget for the project.

In the coming months, we will work with you to gather the information needed to enter into a financial assistance agreement. Please note that this letter is not a final commitment of funding and all pre-award clearances and approvals must be obtained as described in Section E.2.5 of the Funding Opportunity. In addition, Reclamation must have sufficient evidence prior to award that non-Federal cost share will be available. The final funding amount may be adjusted if necessary.

Federal statute (42 U.S.C. 10364(a)(3)(B)) requires that before any funds are awarded, you agree not to use any water savings resulting from your proposed project to increase your total irrigated acreage or to otherwise increase the consumptive use of water in your operations. This requirement, which was discussed in Section F.2.4 of the Funding Opportunity, will be included in the financial assistance agreement for your project.

Please be advised that your application has been ranked, in part, based on your description of the expected benefits of your project and the non-Federal cost share percentage identified in your application. Selection criteria placed an emphasis on conserving and using water more efficiently; increasing the production of hydropower; mitigating conflict risk in areas at a high risk of future water conflict; and accomplishing other benefits that contribute to water supply reliability in the western United States.

In order to demonstrate the success of the program and to provide a guide for future applicants, we will post copies of all successful Water and Energy Efficiency Grant applications as examples on Reclamation's website. While this generally does not raise any issues, we find it prudent to provide successful grant applicants with an opportunity to redact any sensitive information from their proposals prior to posting them on our website. As a rule, we remove the SF-424s; however, if there are any other items you would like to request be redacted, please notify us by sending an email to [jgerman@usbr.gov](mailto:jgerman@usbr.gov) no later than Friday, May 5, 2023. If we do not hear from you by this date, we will assume that there are no objections to posting the full application.

Again, a webinar will be scheduled to discuss next steps in further detail. Thank you for your interest and participation in the WaterSMART Program. The success of the WaterSMART Program depends on collaboration with partners to improve water management. We look forward to working with you.

Sincerely,

/s/ Christina Munoz

Christina Munoz  
Grants Officer

# **Minimum Pool Contract**

## STORAGE RENTAL AGREEMENT

THIS AGREEMENT is entered into by and between the VALE OREGON IRRIGATION DISTRICT (District) and THE UNITED STATES OF AMERICA, by and through the Department of the Interior, Bureau of Reclamation (Reclamation) pursuant to the Act of June 17, 1902, 32 Stat. 388, and acts amendatory and supplementary thereto, including section 14 of the Act of August 4, 1939, ch. 418, 53 Stat. 1187, and section 5 of the Act of December 28, 1973, 87 Stat. 884.

### RECITALS

- A. WHEREAS in 2005 the U. S. Fish and Wildlife Service (Service) issued its Biological Opinion for Bureau of Reclamation Operations and Maintenance in the Snake River Basin Above Brownlee Reservoir (2005 BO) regarding, in part, listed bull trout in Beulah Reservoir;
- B. WHEREAS under Terms and Conditions 4a and 4c of the 2005 BO, the establishment of a minimum pool elevation in Beulah Reservoir is required to minimize impacts to bull trout resulting from reservoir drawdown;
- C. WHEREAS in April 2018 Reclamation submitted to the Service a recommendation that Agency Valley Dam be operated in a manner that reserves a target storage level of 2,000 acre-feet in Beulah Reservoir as a biologically-based minimum conservation pool;
- D. WHEREAS, the Service considered Reclamation's recommendation and made a determination in accordance with the Endangered Species Act consistent with Reclamation's recommendation;
- E. WHEREAS, pursuant to state law and contract(s) heretofore entered into between the District and Reclamation, the District has the right to use water stored in Beulah Reservoir, and the District is responsible for operation and maintenance of Agency Valley Dam and Beulah Reservoir;
- F. WHEREAS Reclamation desires to rent from the District 2,000 acre-feet of storage annually for the term of this Agreement when necessary to maintain a minimum conservation pool in Beulah Reservoir; and
- G. WHEREAS in exchange for compensation, the District is willing to rent to Reclamation 2,000 acre-feet of storage annually from Beulah Reservoir for the term of this Agreement.

## AGREEMENT

NOW, THEREFORE, IN CONSIDERATION of the exchange of mutual covenants and promises set forth herein, and in the recitals hereinabove, the parties agree as follows:

1. Storage Rental. For each year of this Agreement in which Reclamation determines in its sole discretion, after consultation with the District, that the volume of water stored in Beulah Reservoir is likely to be insufficient to maintain a minimum conservation pool under normal operating conditions, the District agrees to rent to Reclamation two-thousand (2,000) acre-feet of storage from Beulah Reservoir for the purpose of maintaining a minimum conservation pool in the reservoir. The District shall effectuate this rental by operating Agency Valley Dam so that at all times during the term of this Agreement, not less than 2,000 acre-feet of water is retained in Beulah Reservoir, and the elevation of water in the reservoir is not less than 3343.06 feet as measured using the original project datum established by Reclamation, which is 11.1 feet lower than the North American Vertical Datum of 1988 (NAVD88).
2. Payment Terms. Reclamation agrees to pay \$21.06 per acre-foot of water rented under this Agreement for a total of \$42,120 for each year in which water is rented under this Agreement. Payment shall be made to the District on or before September 30 of the applicable year.
3. Renegotiation of Payment Terms. The District may request renegotiation of the payment terms set forth in Article 2 of this Agreement by providing written notice to Reclamation. Such notice must be received by Reclamation no later than December 31st to initiate renegotiation of the payment terms for the subsequent contract year. Upon receipt of timely notice, Reclamation will engage in good-faith negotiations with the District. If the parties agree to new payment terms, those terms shall be effective only if set forth in a written amendment to this Agreement signed by both parties. If the parties are unable to agree to new payment terms, the terms set forth in Article 2 shall remain in effect.
4. Effective Date. This Agreement shall become effective on the date of the last signature hereto.
5. Term and Termination. The term of this Agreement shall be from the effective date to March 1, 2027. Reclamation may terminate this Agreement at any time and for any reason upon 60 days written notice to the District.
6. Indemnification. The District will indemnify, defend, and hold Reclamation harmless from and against any and all claims, liabilities, losses, damages, costs and expenses arising from or related to claims made by entities or individuals, who claim or have an interest in the water rights or any land or other property now associated with or previously associated with said water rights, related to

claims involving damage or liability on account of personal injury or death, property damage, economic loss of any kind or nature, arising from or related to lease of the water rights to Reclamation under this Agreement. This provision shall not apply to any claims brought against Reclamation under the Endangered Species Act.

7. Warranties and Covenants

- (a) Of Reclamation. Reclamation makes the following warranties:
  - i. Power and Authority. That Reclamation has all necessary power and authority to enter into this Agreement so as to consummate the transaction herein contemplated.
  - ii. Executing Parties. That the person executing this Agreement on Reclamation's behalf is an officer of the United States and has full power and authority to bind the United States to the terms hereof.
- (b) Of the District. The District makes the following warranties:
  - i. Power and Authority. That the District has all necessary power and authority to enter into this Agreement so as to consummate the transaction herein contemplated.
  - ii. Executing Parties. That the person executing this Agreement on behalf of the District is fully authorized to bind the District to the terms hereof.

8. Miscellaneous Provisions.

- (a) Governing Laws. This Agreement shall be governed by and construed pursuant to federal law.
- (b) Existing Contracts Not Affected. This Agreement does not amend, supersede, alter, or in any way affect the terms of any written contracts or agreements heretofore entered into between Reclamation and the District.
- (c) Officials Not to Benefit. No member of or delegate to Congress or the Resident Commissioner shall be admitted to any share or part of this Agreement or to any benefit to arise therefrom, but this restriction shall not be construed to extend to this Agreement if made with a corporation or company for its general benefit.
- (d) Anti-Deficiency Act. Notwithstanding any other provision of this Agreement, no provision of this Agreement shall be interpreted to

constitute a commitment or requirement obligating Reclamation to pay funds in violation of the Anti-Deficiency Act, 31 U.S.C. § 1341, and nothing herein shall be construed to obligate Reclamation to expend money in excess of appropriations authorized by law and administratively allotted and allocated for the purposes contemplated hereunder. Notwithstanding any other provision of this Agreement, Reclamation shall not be in default and shall not be liable for the failure to pay funds under this Agreement where payment of such funds would violate the Anti-Deficiency Act.

- (e) Covenant Against Contingent Fees. The District warrants that no person or agency has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee except bona fide employees and bona fide commercial agencies maintained by the District for the purpose of securing business. For breach or violation of this warranty, Reclamation shall have the right to revoke this Agreement without liability or in its discretion to require the District pay the full amount of such commission, percentage, brokerage, or contingency fee to Reclamation.
- (f) Costs and Fees. Except as otherwise provided for in this Agreement, each party shall bear its own costs and fees incurred in connection with this transaction. In the event of any dispute or litigation concerning this Agreement, each party shall pay its own attorney fees and costs incurred therein.
- (g) Notices. Any notice, demand, or request authorized or required by this Agreement shall be deemed to have been given, when the party providing the notice mails the notice, postage prepaid or delivered to the appropriate parties at the following addresses:
  - i. To the District: Ty King, Vale Oregon Irrigation District, 521 S. Street West, Vale, Oregon 97918.
  - ii. To Reclamation: Deputy Area Manager, MSF-1100, Middle Snake Field Office, 230 Collins Road, Boise, Idaho 83702.
- (h) Counterpart Originals. This Agreement may be executed in two counterparts, each of which will be an original, but all of which will constitute one contract, binding on the parties.





# **Budget Details**

<b>Budget Categories</b>	<b>Quantity</b>	<b>Unit</b>	<b>Cost/Unit</b>	<b>OWRD</b>	<b>Match</b>	<b>Total</b>
<b>Personnel Costs (Titles)</b>						
Back Hoe Operator	3000	Hrs	\$ 75.00	\$ 225,000.00		\$ 225,000.00
Cat Operator	3600	Hrs	\$ 75.00	\$ 270,000.00		\$ 270,000.00
Dump Truck Operator	2800	Hrs	\$ 75.00	\$ 210,000.00		\$ 210,000.00
General Labor	20000	Hrs	\$ 75.00	\$ 1,500,000.00		\$ 1,500,000.00

**Personnel Cost Sub-total**      \$ 2,205,000.00      \$ -      \$ 2,205,000.00

<b>Contractual Costs</b>						
Cultural Resources Review	1	Contract	\$ 11,353.00	\$ 11,353.00		\$ 11,353.00
Engineer (Final Designs, Construction oversite)	500	Hrs	\$ 150.00	\$ 75,000.00		\$ 75,000.00
Watershed Council Project Management	1500	Hrs	\$ 65.00	\$ 97,500.00		\$ 97,500.00

**Contractual Costs Sub-total**      \$ 183,853.00      \$ -      \$ 183,853.00

<b>Machine Costs</b>						
Cat 320DL	1800	Hrs	\$ 125.00	\$ 225,000.00		\$ 225,000.00
Dump truck	2800	Hrs	\$ 75.00	\$ 210,000.00		\$ 210,000.00
Backhoe	3000	Hrs	\$ 75.00	\$ 225,000.00		\$ 225,000.00
D5 Cat and Grader	1800	Hrs	\$ 125.00	\$ 225,000.00		\$ 225,000.00

**Machine Costs Sub-total**      \$ 885,000.00      \$ -      \$ 885,000.00

<b>Materials and Supplies</b>						
HDPE pipe, Tracerwire, tees, valves vents, thrustblocks, headgates, screens					\$ 2,400,000.00	\$ 2,400,000.00

**Materials and Supplies Costs Sub-total**      \$ -      \$ 2,400,000.00      \$ 2,400,000.00

**Sub-totals**      \$ 3,273,853.00      \$ 2,400,000.00      \$ 5,673,853.00

<b>Administrative Costs</b>						
BOR Admin	1		\$ 120,000.00		\$ 120,000.00	\$ 120,000.00
OWRD Admin	1		\$ 327,385	\$ 327,385		\$ 327,385

**Administrative Costs Sub-total**      \$ 327,385      \$ 120,000.00      \$ 447,385

<b>Total funding request</b>	<b>\$ 3,601,238</b>	<b>\$ 2,520,000.00</b>	<b>\$ 6,121,238</b>
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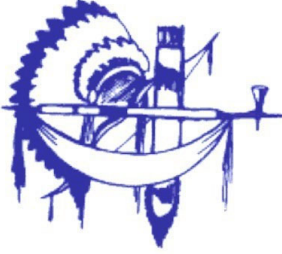
**Budget Narrative:**

The budget was built based on our experience in piping over 50 miles of canals in the Willow Creek area. This informed our estimate of the number of hours for each piece of equipment, the types of equipment needed, and labor hours. Costs for equipment and labor were set to be competitive in the tight labor market in Malheur County.

Contractual costs are based on quotes from experienced contractors. The Council intends to hire a contractor to be a project manager to help with scheduling, procurement, invoicing, and budgeting.

Administrative costs are about 7% of the total project cost.

# Letters of Support



## *Burns Paiute Tribe*

*Natural Resources Department*

*100 Pasigo St*

*Burns, OR 97720*

*Phone (541) 573-1375*

January 12, 2024

Ken Diebel  
Malheur Watershed Council  
710 S.W. 5th Ave  
Ontario, Oregon 97914

Re: Support for the MWC's grant application, "Piping Lateral Canals in the Vale Bench: Building on Experience"

To the Funding Coordinator,

On behalf of the Burns Paiute Tribe (BPT, Tribe) Fish Program, we would like to express our support for Malheur Watershed Council's (MWC) application to Oregon Water Resource Department's 2024 Irrigation Modernization Funding solicitation. This MWC grant application, titled "Piping Lateral Canals in the Vale Bench: Building on Experience", seeks funding for the Vale Oregon Irrigation District (VOID) to pipe 10.4 miles of earthen lateral canals in the West Branch area near Vale, Oregon.

By installing pressurized pipe in earthen laterals of the VOID, an estimated annual savings of approximately 4,896 acre-feet will remain in Beulah Reservoir. This minimum pool benefits threatened populations of ESA-listed bull trout. Bull trout are a culturally and ecologically significant species and a focal restoration species for the BPT. The Tribe's Fish Program has spent decades researching and restoring native salmonids (bull trout and redband trout) and their habitats in the Malheur Basin. Beulah Reservoir is important over-wintering habitat for bull trout. By piping these laterals and retaining 4,896 acre-feet in Beulah Reservoir, bull trout habitat will be improved.

We support this effort to improve bull trout habitat, water quality and irrigation efficiency. The BPT's Fish Program has previously worked collaboratively with the Malheur Watershed Council and see this effort as another positive step to bull trout habitat restoration, conservation of water, and pollution reduction.

Sincerely,

A handwritten signature in blue ink, appearing to read "Brandon Haslick". The signature is stylized and cursive.

Brandon Haslick, Fish Program Manager  
Burns Paiute Tribe  
Office: (541) 573-8084  
[brandon.haslick@burnspaiute-nsn.gov](mailto:brandon.haslick@burnspaiute-nsn.gov)

January 10, 2024

RE: Oregon Water Resources Department Irrigation Modernization Funding Application

Dear Funding Coordinator,

Idaho Power would like to offer this letter of support for the Malheur Watershed Council (MWC) application to the Oregon Water Resources Department (OWRD) 2024 Irrigation Modernization Funding Program. This 2024 MWC grant application, titled “Piping Lateral Canals in the Vale Bench: Building on Experience”, seeks funding for the Vale Oregon Irrigation District to pipe 10.4 miles of earthen lateral canals in the Vale Bench area. This application to OWRD builds off a successful application to the Bureau of Reclamation WaterSMART grant program in which MWC received over \$2.5M for this project.

Idaho Power supports this proposal because piping water delivery canals will promote installation of sprinkler-irrigation systems that use less water and eliminate irrigation tailwater from entering the Malheur River. The conversion from flood irrigation to pressurized sprinklers or drip irrigation will directly result in less phosphorus and sediment loading to waters such as the Malheur and Snake rivers. Idaho Power (and others) have documented significant improvement in water quality in the Snake River (Brownlee Reservoir) as inflowing phosphorus and sediment loads have declined. This project will continue this trend towards improved water quality conditions in the Snake River.

This Vale Bench Piping Project would also complement future water quality funding that Idaho Power will provide for Hells Canyon Complex License mitigation. Specifically, the Clean Water Act §401 certification for the Hells Canyon Complex, issued by Oregon DEQ in 2019, requires Idaho Power to fund \$6.8 million of water quality improvements on agricultural land within the Malheur and Owyhee river basins. Piping Lateral Canals in the Vale Bench would complement and enhance Idaho Power’s funded activities because piped canals increase the opportunity for irrigation upgrades such as conversion from gravity, furrow irrigation to pressurized sprinkler or drip irrigation.

If you have any questions or would like additional information regarding the value of the Malheur Watershed Council proposal to Idaho Power’s water quality improvement interests, please do not hesitate to contact me

Sincerely,



Steve Brink



**OREGON  
DEPARTMENT OF  
AGRICULTURE**

*Protect. Promote. Prosper.*

635 Capitol St NE, Salem, OR 97301-2532  
503.986.4700 | Oregon.gov/ODA

January 8, 2024

Oregon Water Resources Department  
725 Summer Street NE, Suite A  
Salem, OR 97301

Dear Oregon Water Resources Department,

The Oregon Department of Agriculture (ODA) would like to express our support for the Malheur Watershed Council's Irrigation Modernization Funding proposal titled "Piping Lateral Canals in the Vale Bench: Building on Experience" to pipe 10.4 miles of earthen laterals in the Vale Bench area.

The proposed project supports the Malheur Agricultural Water Quality Management Area Plan, which identifies strategies to prevent and control water pollution from agricultural activities and soil erosion on agricultural and rural lands within the boundaries of this Management Area, and to achieve and maintain water quality standards. The proposed project will result in 10.4 miles of pressurized laterals which will enable landowners to convert from furrow to sprinkler-irrigation systems to eliminate irrigation-induced erosion and tailwater from entering the Malheur River, and therefore reducing water pollution from bacteria, sediment, and nutrients.

Because of these efforts, the ODA fully supports the Malheur Watershed Council's proposal. Please feel free to contact me if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Isaak Stapleton", with a long horizontal line extending to the right.

Isaak Stapleton, Director  
Natural Resources Program Area  
PH (503) 986-4700  
FX (503) 986-4730



Natural  
Resources  
Conservation  
Service

2925 SW 6<sup>th</sup> Ave.  
Suite 2  
Ontario, OR 97914  
Voice 541-823-  
5132

January 5, 2024

Dear OWRD,

I am writing to concur with the goals of the Oregon Water Resources Department Irrigation Modernization Funding grant application being submitted by the Malheur Watershed Council (MWC) titled "Piping Lateral Canals in Vale Bench: Building on Experience".

MWC seeks BOR funds to pipe 10.4 miles of earthen laterals in the West Branch area of the Vale Oregon Irrigation District (VOID). Piping these laterals will result in a savings of approximately 4,896 acre-feet per-year and help achieve a carry-over pool in Beulah Reservoir. Since 2010, VOID leased water to the BOR to maintain a 2,000 acre-feet carryover pool in Beulah which will benefit the resident bull trout population. This project also complements many restoration efforts along the Malheur including those funded with Natural Resources Conservation Service (NRCS) program funds.

The Malheur Watershed Council is a valued partner with a strong history of quality conservation planning and implementation. Their work has made significant positive impacts to the environment and the economic outlook for the local citizens in Malheur County. NRCS has worked closely with their efforts.

This grant application proposes to continue the ongoing efforts to improve water quality in Malheur County. This is of particular interest to NRCS because it supports the local NRCS priorities in the Willow Creek+ Conservation Implementation Strategy and the NRCS county long range plan. Implementation of this project will leverage significant current and future NRCS conservation efforts in the area which includes up to \$3 million in program funds.

Thank you for your consideration,

A handwritten signature in blue ink, appearing to read "Lynn Larsen".

Lynn Larsen  
District Conservationist  
USDA-NRCS  
2925 SW 6<sup>th</sup> Ave. Ste 2  
Ontario, OR 97914



**Oregon State**  
**University**

**Malheur Experiment Station**

Oregon State University  
595 Onion Avenue  
Ontario, OR 97914

P 541-889-2174

[stuart.reitz@oregonstate.edu](mailto:stuart.reitz@oregonstate.edu)

<https://agsci.oregonstate.edu/mes>

11 January 2024

Adair Muth  
Grants Coordinator  
Oregon Water Resources Department  
725 Summer Street NE, Suite A  
Salem, OR 97301

Dear Ms. Muth,

As Director of the Malheur Experiment Station, I strongly support the Malheur Watershed Council's application, "Piping Lateral Canals in Vale Bench: Building on Experience," to the Oregon Water Resources Department's 2024 Irrigation Modernization Funding program. The project will result in piping 10.4 miles of earthen laterals in the Vale Bench area that are part of the Vale Oregon Irrigation District. Funding this proposal from the Malheur Watershed Council will complement funding the council received last year from the Bureau of Reclamation to start this pipeline project.

The Malheur Experiment Station has a long and continuing history of research and outreach efforts focused on improving irrigation practices, conserving water, and enhancing water quality. We are excited about how this pipeline project will benefit our community and our station's interests in irrigation improvements. Installing pressurized laterals will allow greater use of sprinkler-irrigation systems to replace flood and furrow irrigation. Greater use of sprinkler systems will help growers increase crop yields and reduce fertilizer inputs.

Flood and furrow irrigation are responsible for high loads of bacteria, sediment and nutrients flowing into the Malheur River. Phasing out flood and furrow irrigation will virtually eliminate irrigation-induced erosion and greatly improve downstream water quality and aquatic habitats. Piping of these laterals will save more than 4,800 acre-feet annually, which will help maintain a carry-over pool in Beulah Reservoir that will benefit its resident bull trout population.

Clearly, this project will have many benefits and it will complement the numerous other restoration projects conducted in the Malheur River basin. I urge the department to strongly consider funding the project.

Sincerely,

Stuart Reitz, Ph.D.  
Director

January 12, 2024

Adair Muth  
Grants Coordinator  
Oregon Water Resources Department  
725 Summer Street NE, Suite A  
Salem, OR 97301

Dear Ms. Muth,

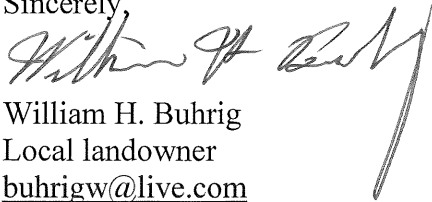
The purpose of this correspondence is to encourage consideration of the Malheur Watershed Council application titled "Piping Lateral Canals in Vale Bench: Building on Experience." The following reasons are paramount in my support for this work:

1. Pressurizing water delivered to fields enables the adaption of sprinkler and drip technologies. By reducing the amount of flood and furrow irrigation, the corresponding runoff is reduced as well. It also enables producers to leave the crop residue on top which reduces both wind and water erosion when adapting reduced-tillage operations. High residue farming also helps maintain soil moisture and nutrients. Burying these laterals enables producers to convert to newer methodologies which will help conserve water in reservoirs such as Beulah (Agency Valley Dam).
2. Pressurized water also reduces the need for electricity to pump water. As we look to the struggle of our utilities trying to meet the overall increasing electrical load, one of the best mitigation techniques is to reduce the burden. Buried lines are a great example of using gravity to take pressure off the grid.
3. An ancillary benefit to the watershed is the reduction of input costs and losses pertaining to pest management. Noxious weeds are a perennial management challenge that everybody faces. Open ditches have been havens for weeds such as Canada Thistle, Hoary Cress, and Russian Olive to name a few. Removing open ditches is a massive step towards reducing the habitat for undesirable vegetation. Filling ditches enables better utilization and management of these areas while reducing opportunities for undesirable plants AND rodents such as voles, ground squirrels and gophers.

In closing, I would encourage you to consider this application. Projects like this have great utility in allowing further water quality improvements to take place. They are investments in future investments.

Thank you for your time.

Sincerely,



William H. Buhrig  
Local landowner  
[buhrigw@live.com](mailto:buhrigw@live.com)  
541-709-7987



**REPRESENTATIVE MARK OWENS  
HOUSE DISTRICT 60**

January 12, 2024

Dear Funding Coordinator,

I am submitting this letter to express my support for the Malheur Watershed Council's (MWC) application titled "Piping Lateral Canals in the Vale Bench: Building on Experience" to the Oregon Water Resource's grant solicitation, "Irrigation Modernization Funding". MWC seeks funding for the Vale Oregon Irrigation District to pipe 10.4 miles of earthen lateral canals in the West Branch area near Vale, Oregon.

MWC proposes to install pressurized pipe in 10.4 miles of earthen laterals in the West Branch area of the Vale Oregon Irrigation District (VOID). Piping these laterals will result in savings of approximately 4,896 acre-feet per-year and help achieve a carry-over pool in Beulah Reservoir to benefit ESA federally listed bull trout. MWC successfully received a \$2,520,00 BOR WaterSMART grant in 2023 for this project.

Implementation of future piping and conversion to sprinklers will greatly aid in improving water quality and quantity in the Malheur and Snake River basins. Piping earthen laterals eliminates seepage and evaporation and will improve water quality by eliminating runoff of sediment, nutrients, and bacteria into drainage ditches. It complements many previous Malheur basin projects and will benefit Beulah's bull trout population as well as local fisheries.

Malheur County is consistently ranked as the poorest county in the state of Oregon. In addition, they have the second highest Hispanic population by county in Oregon which is an underserved community. Projects such as this also help improve the local business community. If MWC is successful in receiving the OWRD grant, they can continue this mutually beneficial effort for the environment, farmers, and the local economy.

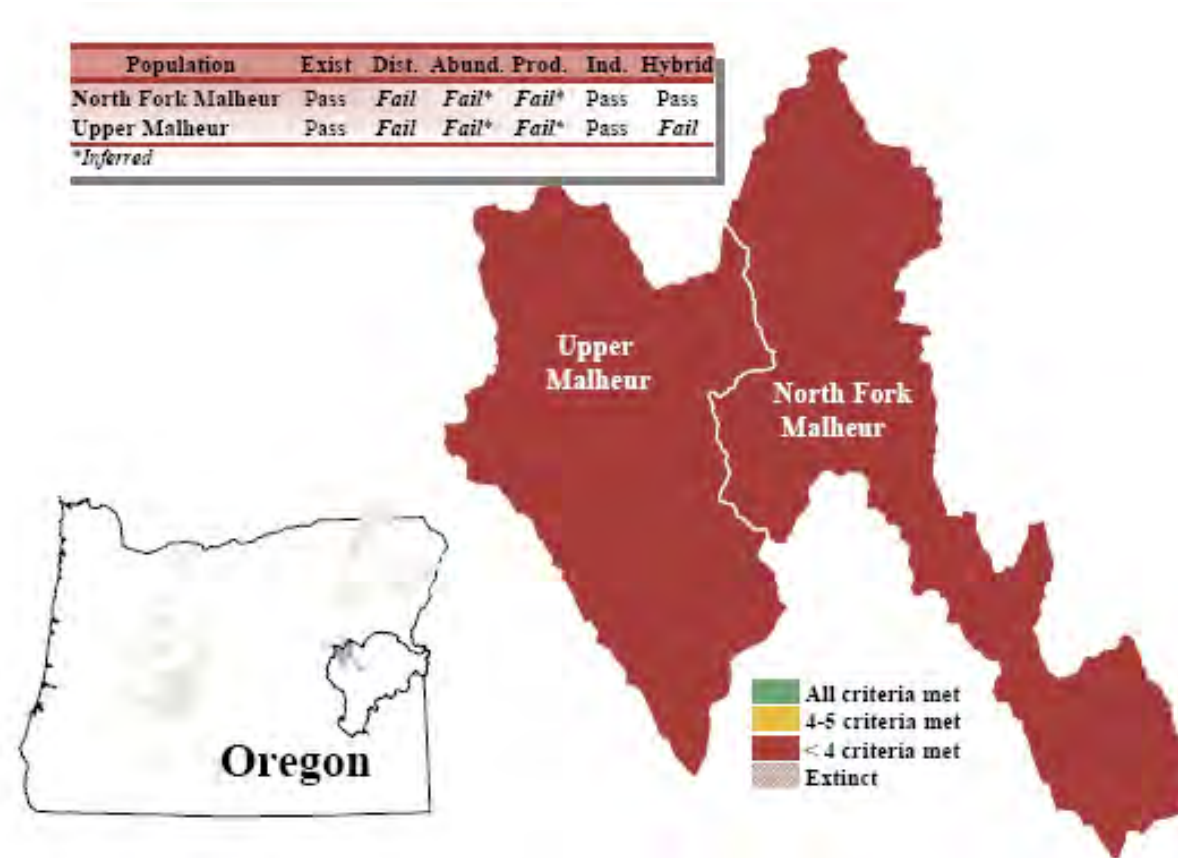
Sincerely,

Representative Mark Owens

# **Bull Trout**



# Bull Trout



Beulah Reservoir

Bull trout rear and over winter in Beulah Reservoir.

Populations in general are in poor shape.

# Beulah Minimum Pool to Benefit Bull Trout

BOR studies have shown benefits to bull trout by having a minimum pool.

(Horn and Best. 2015)

**RECLAMATION**  
*Managing Water in the West*

**Beulah Reservoir Minimum Pool and Prey  
Base Studies 2010 – 2013:  
Part 2 Bioenergetics, Population  
Sustainability**



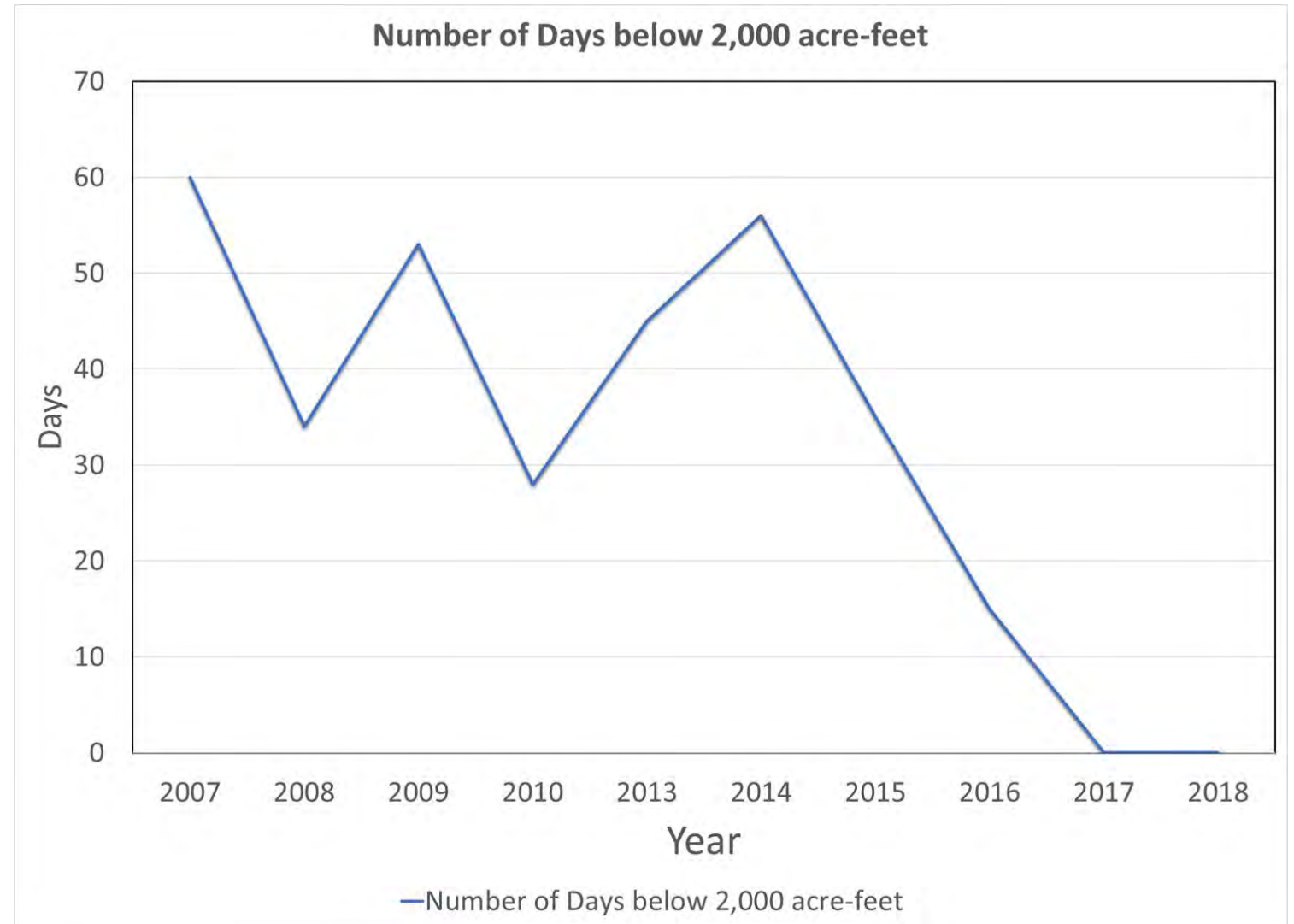
Prepared for: Bureau of Reclamation, Snake River Area Office, Boise, Idaho



U.S. Department of the Interior  
Bureau of Reclamation

June 2015

The District has been able to meet the minimum pool target, but it is difficult given the drought years. We need to continue improving our infrastructure.



# Typical dirt lateral canals

We estimate water loss to be about 479 acre-feet per canal mile per year.



Dirt canals are susceptible water loss through leakage and evaporation.



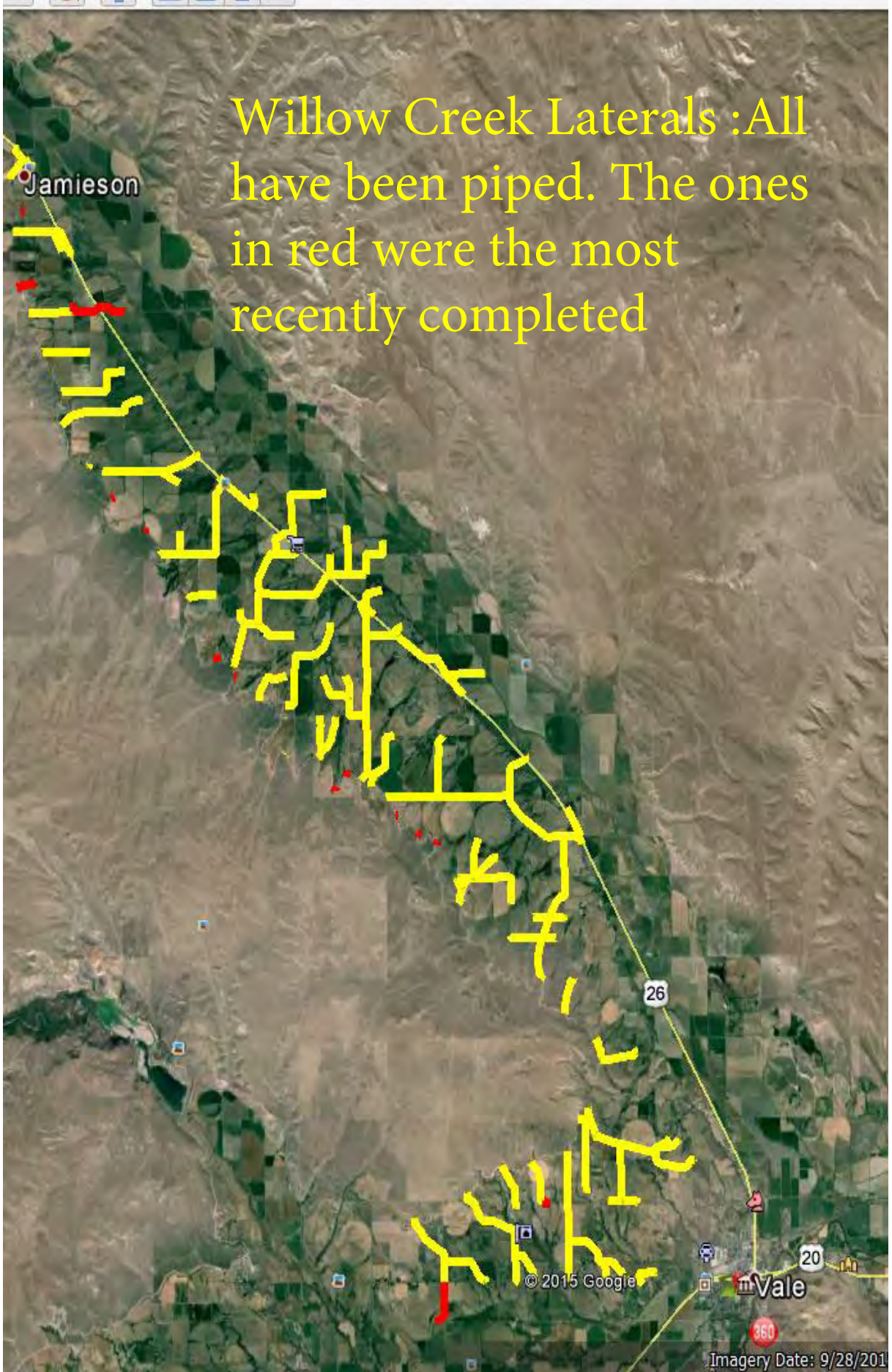
Typical spillway. Note the erosion of the ditch.

# Solution: Piping Lateral Canals



Building On Experience:  
Piping Laterals in Willow Creek

Willow Creek Laterals :All have been piped. The ones in red were the most recently completed



# Pipe Delivery



# Construction pictures of headwall and flowmeter for Lateral 273: Willow Creek



Lateral 273 headgate under construction



Lateral 273 headgate completed



Lateral 273 flowmeter being installed



Lateral 273 flowmeter

# Screen and headgate



Screen and headgate

Main Canal



Solar Panel

# Screen and concrete headwall



# **Irrigation District Water Right**

STATE OF OREGON

COUNTY OF MALHEUR

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

VALE OREGON IRRIGATION DISTRICT  
521 "A" STREET WEST  
VALE, OREGON 97918

UNITED STATES OF AMERICA  
BUREAU OF RECLAMATION  
214 BROADWAY AVENUE  
BOISE, IDAHO 83702-7298

confirms the right to use:

1. 400 CUBIC FEET PER SECOND from MALHEUR RIVER with a priority of May 10, 1926.
2. (A) 200 CUBIC FEET PER SECOND from MALHEUR RIVER with a priority of January 11, 1927.  
  
(B) One half of the stored water available each year from Warm Springs Reservoir (Permit No. R-457), which is to be released into the Malheur River and re-diverted therefrom through Vale Oregon Project main canal at a maximum rate of 600 CUBIC FEET PER SECOND.  
  
(C) All of the drainage water, seepage water, return flow, and waste water from the Vale Oregon Project, estimated to be 200 CUBIC FEET PER SECOND to be used in Warm Springs Irrigation District under contract between that District and the United States under which the Warm Springs District is to accept such return flow from the Vale Oregon Project and allow the United States, in return, an equivalent amount of stored water and natural flow from the Malheur River.

\*NOTE: All of "2" is under priority date of January 11, 1927.

for IRRIGATION of 28,291.2 ACRES and SUPPLEMENTAL IRRIGATION of 3,708.8 ACRES.

The amount of water to which this right is entitled, is limited to an amount actually beneficially used for said purposes, and shall not exceed 600 CUBIC FEET PER SECOND if available at the authorized points of diversion or the equivalent in case of rotation.

The points of diversion are located as follows:

WARMSPRINGS DAM - SW¼ SW¼, Section 8, Township 23 South Range 37 East, W.M.

VALE PROJECT MAIN CANAL - NW¼ SE¼, Section 31, Township 20 South, Range 41 East, W.M.; 1200 feet North and 300 feet East from the South ¼ Corner of Section 31.

The amount of water used for irrigation or supplemental irrigation, together with the amount secured under any other right existing for the same lands, is limited to a diversion of 4.5 ACRE-FEET PER ACRE, or the equivalent for each acre irrigated during the irrigation season of each year.

A description of the place of use to which this right is appurtenant is as follows:

**PRIMARY IRRIGATION**

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
16	43	10	SWNE	500	18.2
16	43	10	NENW	500	5.1
16	43	10	NWNW	500	41.3
16	43	10	SWNW	600	4.7
16	43	10	SWNW	600	3.6
16	43	10	SWNW	602	5.1
16	43	10	SENE	500	28.3
16	43	10	NWSW	600	29.2
16	43	10	SWSW	601	14.6
16	43	10	SWSW	700	9.2
16	43	10	SWSW	1790	0.3
16	43	10	SWSW	600	7.0
16	43	10	SESE	800	34.5
16	43	10	NESE	1100	20.0
16	43	10	NWSE	1100	11.8
16	43	10	SWSE	1101	13.5
16	43	10	SESE	1200	0.7

13.4

31.1

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
16	43	11	NWSW	1200	15.5
16	43	11	SWSW	1200	12.7
16	43	11	SESW	1200	18.2
16	43	11	SWSE	1502	0.9
16	43	13	NWSW	1500	19.3
16	43	13	SWSW	1500	29.7
16	43	14	NENE	1502	0.6
16	43	14	NWNE	1502	20.7
16	43	14	SWNE	1502	11.9
16	43	14	SENE	1502	22.9
16	43	14	SWSW	1400	7.1
16	43	15	NENE	1101	12.0
16	43	15	NWNE	1101	40.0
16	43	15	SWNE	1101	9.6
16	43	15	SWNE	1500	0.2
16	43	15	SWNE	2200	2.0
16	43	15	SWNE	1900	12.6
16	43	15	SENE	1101	25.9
16	43	15	NENW	690	0.1
16	43	15	NENW	301	3.4
16	43	15	NENW	400	0.4
16	43	15	NENW	200	4.6
16	43	15	NENW	100	5.0
16	43	15	NENW	600	0.8
16	43	15	NENW	900	6.4
16	43	15	NENW	700	1.3
16	43	15	NENW	601	0.1
16	43	15	NWNW	900	5.0
16	43	15	NWNW	400	0.3
16	43	15	NWNW	700	0.2
16	43	15	SWNW	401	0.9
16	43	15	SWNW	400	1.3
16	43	15	SWNW	900	11.3
16	43	15	SENW	200-BD	0.1
16	43	15	SENW	1900	0.4
16	43	15	SENW	1300-BD	0.5
16	43	15	SENW	100-BD	0.7

24.4

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
16	43	15	SENW	401	5.1
16	43	15	SENW	400	0.5
16	43	15	SENW	1200-BD	0.5
16	43	15	NESW	1500	19.1
16	43	15	NESW	1200-BD	3.0
16	43	15	NESW	1300-BD	2.5
16	43	15	NWSW	1700	1.1
16	43	15	NWSW	1500	0.1
16	43	15	NWSW	1600	1.0
16	43	15	NWSW	1600-BD	0.1
16	43	15	SWSW	1800	8.3
16	43	15	SESW	1800	14.2
16	43	15	SESW	1500	13.6
16	43	15	NESE	1101	3.3
16	43	15	NESE	2100	0.8
16	43	15	NWSE	1500	12.7
16	43	15	SWSE	1800	17.6
16	43	15	SWSE	1500	14.5
16	43	15	SWSE	1890	0.4
16	43	15	SESE	1800	0.9
16	43	15	SESE	2100	29.0
16	43	15	SESE	1890	1.0
16	43	22	NENE	1100	14.5
16	43	22	NENE	1300	17.3
16	43	22	NENE	1390	3.1
16	43	22	NWNE	1300	37.2
16	43	22	SWNE	1500	32.9
16	43	22	SENE	1290	1.1
16	43	22	SENE	1100	0.3
16	43	22	SENE	1500	16.7
16	43	22	SENE	1200	14.9
16	43	22	NENW	1400	34.8
16	43	22	NWNW	1400	24.8
16	43	22	SWNW	1500	36.0
16	43	22	SENW	1500	38.2
16	43	22	NESW	1600	34.4
16	43	22	NWSW	1600	3.2

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33

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres'
16	43	22	SESW	1600	10.4
16	43	22	NESE	1800	35.9
16	43	22	NWSE	1800	39.3
16	43	22	SWSE	1900	39.7
16	43	22	SESE	1900	39.1
16	43	23	SWNE	800	32.5
16	43	23	SENE	800	34.9
16	43	23	NENW	701	7.1
16	43	23	NWNW	1100	36.8
16	43	23	SWNW	1000	21.7
16	43	23	SWNW	1201	0.8
16	43	23	SWNW	1290	0.7
16	43	23	SENW	1000	20.0
16	43	23	NESW	900	26.6
16	43	23	NWSW	1290	3.2
16	43	23	NWSW	1201	15.6
16	43	23	NWSW	900	4.7
16	43	23	SWSW	1201	32.4
16	43	23	SWSW	900	0.1
16	43	23	SESW	1201	4.3
16	43	23	SESW	900	21.8
16	43	23	NESE	800	36.1
16	43	23	NWSE	800	17.7
16	43	23	SWSE	800	10.3
16	43	23	SESE	501	11.8
16	43	23	SESE	800	12.4
16	43	24	NWNW	600	38.2
16	43	24	SWNW	500	38.6
16	43	24	SENW	600	18.7
16	43	24	NESW	400	38.5
16	43	24	NWSW	500	34.4
16	43	24	SWSW	500	38.5
16	43	24	SESW	500	7.7
16	43	24	SESW	400	26.3
16	43	24	NESE	200	11.1
16	43	24	NWSE	300	18.7
16	43	24	NWSE	400	19.7

23.2

23.5

32.5

26.1

24.2

34

38.4

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
16	43	24	SWSE	400	17.7
16	43	24	SWSE	300	18.8
16	43	24	SESE	300	33.4
16	43	25	NENE	3600	3.1
16	43	25	NENE	3501	34.6
16	43	25	NWNE	3500	25.9
16	43	25	SWNE	3500	35.2
16	43	25	SENE	3501	35.4
16	43	25	NENW	3400	34.9
16	43	25	NWNW	3400	30.6
16	43	25	SWNW	3700	37.5
16	43	25	SENW	3700	34.5
16	43	25	NESW	3801	18.1
16	43	25	NWSW	3801	14.3
16	43	25	SWSW	3900	8.9
16	43	25	SWSW	3800	6.6
16	43	25	SWSW	3801	7.6
16	43	25	SESW	3900	33.7
16	43	25	NESE	4200	39.6
16	43	25	NWSE	4000	38.5
16	43	25	SWSE	4100	1.5
16	43	25	SWSE	4000	27.4
16	43	25	SESE	4200	37.6
16	43	26	NENE	3300	30.2
16	43	26	NWNE	3300	28.4
16	43	26	NWNE	3201	1.8
16	43	26	SWNE	3200	0.1
16	43	26	SWNE	3201	31.6
16	43	26	SENE	3201	13.3
16	43	26	SENE	3200	17.9
16	43	26	NENW	3300	2.4
16	43	26	NENW	2690	0.4
16	43	26	NENW	2601	28.8
16	43	26	NENW	2600	1.6
16	43	26	NWNW	2500	34.3
16	43	26	SWNW	2700	33.8
16	43	26	SENW	2700	37.2

36.5  
37.7  
23.1  
28.1  
30.2  
31.7  
31.2  
33.2

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
16	43	26	NESW	2800	34.9
16	43	26	NWSW	2700	35.0
16	43	26	SWSW	2800	36.0
16	43	26	SESW	2800	34.9
16	43	26	NESE	3190	0.9
16	43	26	NESE	3100	27.4
16	43	26	NWSE	3100	35.7
16	43	26	SWSE	2900	36.0
16	43	26	SESE	3001	30.4
16	43	27	NENE	2300	37.8
16	43	27	NWNE	2100	16.3
16	43	27	NWNE	2200	17.5
16	43	27	SWNE	2100	30.7
16	43	27	SENE	2400	36.5
16	43	27	NENW	2100	14.0
16	43	27	SENW	2000	2.2
16	43	27	NESE	2400	38.3
16	43	27	NWSE	2002	11.2
16	43	27	SESE	2400	29.2
16	43	3	SWSW	500	13.6
16	43	34	NENE	2003	7.9
16	43	34	SENE	5800	0.5
16	43	34	NESE	5800	6.9
16	43	35	NENE	5400	32.1
16	43	35	NWNE	5400	35.0
16	43	35	SWNE	5500	37.6
16	43	35	SENE	5400	37.9
16	43	35	NENW	5500	30.2
16	43	35	NWNW	5500	36.1
16	43	35	SWNW	5500	35.9
16	43	35	SENW	5500	37.5
16	43	35	NESW	5603	26.7
16	43	35	NESW	5601	10.5
16	43	35	NWSW	5700	38.7
16	43	35	SWSW	5700	22.6
16	43	35	SESW	5603	0.5
16	43	35	SESW	5300	3.6

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
16	43	35	SESW	5601	16.2
16	43	35	NESE	5201	33.6
16	43	35	NESE	5200	4.7
16	43	35	NWSE	5600	19.4
16	43	35	NWSE	5603	19.1
16	43	35	SWSE	5300	37.3
16	43	35	SESE	5201	39.6
16	43	36	NENE	4300	28.9
16	43	36	NWNE	4400	8.6
16	43	36	NWNE	4401	27.0
16	43	36	SWNE	690	0.1
16	43	36	SWNE	101	0.4
16	43	36	SWNE	100	33.8
16	43	36	SENE	100	33.9
16	43	36	NENW	4401	31.3
16	43	36	NENW	4500	2.8
16	43	36	NWNW	3901	1.2
16	43	36	NWNW	4401	0.9
16	43	36	NWNW	4500	29.4
16	43	36	SWNW	4600	39.7
16	43	36	SENW	4401	2.6
16	43	36	SENW	4400	4.3
16	43	36	SENW	4900	7.1
16	43	36	SENW	4600	8.3
16	43	36	SENW	4990	1.3
16	43	36	NESW	4900	35.9
16	43	36	NWSW	4900	38.3
16	43	36	SWSW	5100	34.7
16	43	36	SESW	5100	37.4
16	43	36	NESE	400	0.7
16	43	36	NESE	100	27.8
16	43	36	NWSE	100	18.7
16	43	36	NWSE	600	6.1
16	43	36	NWSE	690	0.2
16	43	36	SWSE	5000	0.3
16	43	36	SWSE	5100	21.7
16	43	36	SESE	5190	2.9

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
16	43	36	SESE	5000	25.4
16	43	36	SESE	5100	6.2
16	43	4	SWSW	300	34.0
16	43	4	SESW	300	4.1
16	43	4	SESW	200	14.3
16	43	4	SWSE	500	20.7
16	43	4	SESE	500	2.0
16	43	9	NENE	1700	37.3
16	43	9	NWNE	1700	35.4
16	43	9	NWNE	1701	2.6
16	43	9	NWNE	1790	1.1
16	43	9	SWNE	1700	7.6
16	43	9	SWNE	1790	2.2
16	43	9	SWNE	1701	25.1
16	43	9	SENE	1701	0.9
16	43	9	SENE	1790	0.8
16	43	9	SENE	1700	38.8
16	43	9	NENW	200	4.6
16	43	9	NENW	1600	32.4
16	43	9	NWNW	1600	15.0
16	43	9	NWNW	1601	0.9
16	43	9	SWNW	1600	19.7
16	43	9	SENW	1600	12.4
16	43	9	SENW	1600	8.9
16	43	9	NESE	1790	1.1
16	43	9	NESE	1701	8.9
16	43	9	NESE	1700	12.7
16	43	9	NWSE	1701	2.2
16	43	9	SESE	1701	6.6
16	44	30	SWNE	500	2.1
16	44	30	NWNW	600	16.1
16	44	30	SWNW	600	34.4
16	44	30	SWNW	700	0.4
16	44	30	SENW	600	27.8
16	44	30	NESW	600	32.7
16	44	30	NESW	900	1.9
16	44	30	NWSW	700	32.5

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
16	44	30	NWSW	600	3.7
16	44	30	NESE	1000	3.5
16	44	30	NWSE	1000	30.8
16	44	30	SESE	1000	20.7
16	44	31	NENE	1100	38.0
16	44	31	NWNE	1200	34.4
16	44	31	SWNE	1200	37.7
16	44	31	SENE	1200	26.1
16	44	31	NENW	1300	4.0
16	44	31	NWNW	1300	22.5
16	44	31	SWNW	1400	33.8
16	44	31	SENW	1400	39.2
16	44	31	NESW	1500	39.1
16	44	31	NWSW	1600	36.0
16	44	31	SWSW	1700	35.0
16	44	31	SESW	1700	35.6
16	44	31	NESE	1800	37.8
16	44	31	NWSE	1900	38.1
16	44	31	SWSE	2000	25.1
16	44	31	SESE	2100	35.7
16	44	32	NWNW	401	4.7
16	44	32	SWNW	2400	24.9
16	44	32	SWNW	2400	2.4
16	44	32	SENW	2300	12.4
16	44	32	NESW	2300	36.8
16	44	32	NWSW	1800	20.0
16	44	32	SWSW	2500	35.7
16	44	32	SESW	2500	27.3
16	44	32	NWSE	2300	18.1
16	44	32	SWSE	2500	30.0
17	43	1	NENE	100	34.0
17	43	1	NWNE	100	39.0
17	43	1	SWNE	200	38.0
17	43	1	SENE	300	36.5
17	43	1	NENW	400	38.3
17	43	1	NWNW	500	38.4
17	43	1	SWNW	600	31.4

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
17	43	1	SENW	600	33.7
17	43	1	NESW	700	39.0
17	43	1	NWSW	900	36.0
17	43	1	SWSW	900	9.4
17	43	1	SESW	700	37.0
17	43	1	NESE	300	32.8
17	43	1	NWSE	1000	40.4
17	43	1	SWSE	1000	35.0
17	43	1	SESE	1100	36.4
17	43	12	NENE	2100	33.1
17	43	12	NWNE	2200	33.8
17	43	12	SWNE	2200	29.2
17	43	12	SENE	2100	32.9
17	43	12	NENW	2300	22.4
17	43	12	NWNW	2400	4.4
17	43	12	SWNW	2400	0.3
17	43	12	SENW	2300	28.9
17	43	12	NESE	2800	1.3
17	43	12	NWSE	3000	2.0
17	43	12	SWSE	3000	21.6
17	43	12	SESE	3000	30.1
17	43	13	NENE	3000	23.2
17	43	13	SENE	3000	8.5
17	43	2	NENE	1200	37.7
17	43	2	NWNE	1300	32.9
17	43	2	SWNE	1400	32.5
17	43	2	SWNE	1300	2.2
17	43	2	SENE	1400	38.1
17	43	2	NENW	1300	7.9
17	43	2	SENW	900	2.4
17	43	2	NESW	900	3.6
17	43	2	NESE	900	27.0
17	43	2	NWSE	900	33.6
17	44	10	SWNE	800	6.5
17	44	10	NENW	600	9.5
17	44	10	NWNW	600	34.8
17	44	10	SWNW	600	33.9

34.7

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
17	44	10	SENW	600	32.8
17	44	10	NESW	700	38.6
17	44	10	NWSW	700	35.7
17	44	10	SWSW	700	36.7
17	44	10	SESW	700	32.7
17	44	10	NESE	800	12.7
17	44	10	NWSE	800	34.7
17	44	10	SWSE	700	35.9
17	44	10	SWSE	700	0.2
17	44	10	SESE	800	18.8
17	44	14	SWNW	1700	31.8
17	44	14	NWSW	1600	38.2
17	44	14	SWSW	1600	37.8
17	44	14	SESW	1500	35.1
17	44	14	SWSE	1500	36.3
17	44	14	SESE	1400	30.6
17	44	15	NENE	1900	34.6
17	44	15	NWNE	2000	35.9
17	44	15	SWNE	2000	34.9
17	44	15	SENE	1900	37.4
17	44	15	NENW	2100	34.5
17	44	15	NWNW	2100	37.8
17	44	15	SWNW	2200	31.9
17	44	15	SWNW	2300	1.4
17	44	15	SENW	2200	39.4
17	44	15	NESW	2400	34.8
17	44	15	NWSW	2400	3.6
17	44	15	NWSW	2600	12.7
17	44	15	SWSW	2600	35.0
17	44	15	SESW	2601	3.3
17	44	15	SESW	2600	11.0
17	44	15	SESW	2500	4.5
17	44	15	NESE	1900	34.5
17	44	15	NWSE	2400	38.6
17	44	15	SWSE	2500	30.3
17	44	15	SWSE	2601	3.2
17	44	15	SESE	2500	32.7

36.1

33.3

16.3

18.8

33.5

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
17	44	16	NENE	5100	27.7
17	44	16	NWNE	5001	11.2
17	44	16	NWNE	5001	7.5
17	44	16	SWNE	5001	34.9
17	44	16	SENE	5100	6.4
17	44	16	SENE	5090	2.0
17	44	16	SENE	5002	0.4
17	44	16	SENE	5001	12.3
17	44	16	NENW	5300	31.4
17	44	16	NWNW	5300	37.1
17	44	16	SWNW	5300	28.3
17	44	16	SENW	5300	25.5
17	44	16	NESW	5300	28.5
17	44	16	NWSW	5300	24.7
17	44	16	SWSW	5300	27.5
17	44	16	SESW	5300	9.0
17	44	16	NESE	5200	36.5
17	44	16	NWSE	5001	29.3
17	44	16	SESE	5200	23.5
17	44	17	NENE	5402	32.0
17	44	17	NENE	5400	3.0
17	44	17	NWNE	5500	31.1
17	44	17	SWNE	5500	23.9
17	44	17	SENE	5402	28.0
17	44	17	NENW	5500	5.4
17	44	17	NENW	5501	29.4
17	44	17	NWNW	6200	34.6
17	44	17	SWNW	6000	35.7
17	44	17	SENW	6100	24.2
17	44	17	NESW	5900	36.9
17	44	17	NWSW	6000	30.9
17	44	17	SWSW	6000	34.4
17	44	17	SESW	5900	38.3
17	44	17	NESE	5700	27.2
17	44	17	NWSE	5600	31.0
17	44	17	SWSE	5800	38.3
17	44	17	SESE	5700	23.8

18.7

21.1

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34.8

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
17	44	18	NENE	6300	16.7
17	44	18	NWNE	6300	8.8
17	44	18	SWNE	6400	12.6
17	44	18	SWNE	6300	14.3
17	44	18	SENE	6300	36.2
17	44	18	NENW	2502	14.3
17	44	18	NWNW	2400	1.6
17	44	18	NWNW	2400	26.3
17	44	18	SWNW	6400	5.1
17	44	18	SENW	6400	28.8
17	44	18	NESW	6500	33.7
17	44	18	NESW	6501	1.0
17	44	18	NWSW	6500	11.5
17	44	18	SWSW	6500	0.4
17	44	18	SESW	6500	0.8
17	44	18	NESE	6600	36.8
17	44	18	NWSE	6500	35.8
17	44	18	SWSE	6500	6.8
17	44	18	SESE	6600	24.2
17	44	19	NENE	200	27.6
17	44	19	SWNE	200	18.5
17	44	19	SENE	200	29.3
17	44	19	NESE	200	2.5
17	44	19	NWSE	200	4.1
17	44	20	NENE	601	35.0
17	44	20	NWNE	500	31.3
17	44	20	SWNE	500	37.0
17	44	20	SENE	601	20.0
17	44	20	SENE	602	4.0
17	44	20	NENW	400	35.9
17	44	20	NWNW	300	15.3
17	44	20	SWNW	300	37.4
17	44	20	SENW	400	19.3
17	44	20	SENW	300	10.3
17	44	20	NESW	500	7.2
17	44	20	NWSE	500	26.7
17	44	20	SWSE	500	16.1

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
17	44	21	NENE	900	34.4
17	44	21	NWNE	900	21.1
17	44	21	SWNE	1000	25.6
17	44	21	SENE	1000	25.4
17	44	21	NENW	800	35.5
17	44	21	NWNW	700	37.0
17	44	21	SWNW	700	35.0
17	44	21	SENW	1100	36.9
17	44	21	NESW	1100	34.1
17	44	21	NWSW	1200	17.9
17	44	21	SWSW	1200	14.7
17	44	21	SESW	1200	36.7
17	44	21	NESE	1401	30.3
17	44	21	NWSE	1300	39.7
17	44	21	SWSE	1401	8.3
17	44	21	SWSE	1300	25.1
17	44	21	SESE	1400	3.0
17	44	21	SESE	1401	29.4
17	44	22	NENE	100	27.7
17	44	22	NENE	190	2.2
17	44	22	NWNE	190	1.5
17	44	22	NWNE	100	25.2
17	44	22	SWNE	100	37.8
17	44	22	SENE	100	26.6
17	44	22	NENW	200	28.6
17	44	22	NWNW	200	31.4
17	44	22	SWNW	300	36.8
17	44	22	SENW	300	23.2
17	44	22	NESW	501	38.3
17	44	22	NWSW	401	31.4
17	44	22	SWSW	401	14.6
17	44	22	SESW	501	23.3
17	44	22	NESE	500	34.9
17	44	22	NWSE	500	39.0
17	44	22	SWSE	500	18.1
17	44	22	SESE	500	37.4
17	44	23	NENW	600	27.6

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
17	44	23	NWNW	600	33.8
17	44	23	SWNW	700	23.4
17	44	23	SENW	700	35.2
17	44	23	NESW	890	2.3
17	44	23	NESW	800	5.8
17	44	23	NESW	700	28.7
17	44	23	NWSW	800	27.4
17	44	23	SWSW	800	38.0
17	44	23	SESW	700	1.7
17	44	23	SESW	890	1.9
17	44	23	SESW	800	26.9
17	44	23	NWSE	700	36.0
17	44	23	SWSE	800	3.7
17	44	23	SWSE	700	1.0
17	44	23	SWSE	1000	3.2
17	44	23	SWSE	890	2.0
17	44	23	SESE	1000	18.3
17	44	24	NENW	1100	33.8
17	44	24	NWNW	1100	36.2
17	44	24	SWNW	1200	38.2
17	44	24	SENW	1300	33.9
17	44	24	NESW	1300	11.6
17	44	24	NWSW	1200	34.6
17	44	24	SWSW	1401	5.3
17	44	24	SWSW	1400	20.5
17	44	24	SESW	1400	19.4
17	44	24	NWSE	1600	28.7
17	44	24	SWSE	1600	19.2
17	44	24	SESE	1600	1.6
17	44	25	NWNW	2100	18.9
17	44	25	SWNW	2100	35.4
17	44	25	SENW	1900	2.0
17	44	25	NWSW	2200	29.8
17	44	25	SWSW	2201	10.6
17	44	25	SWSW	2200	1.2
17	44	26	NENE	2601	32.3
17	44	26	NENE	2600	1.5

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
17	44	26	NWNE	2800	3.7
17	44	26	NWNE	2602	0.8
17	44	26	NWNE	2600	21.2
17	44	26	SWNE	2700	17.6
17	44	26	SWNE	2600	19.7
17	44	26	SENE	2600	5.6
17	44	26	SENE	2790	1.0
17	44	26	SENE	2100	5.9
17	44	26	SENE	2601	2.0
17	44	26	SENE	2700	3.4
17	44	26	NENW	2800	34.9
17	44	26	NWNW	2800	31.4
17	44	26	SWNW	2900	20.4
17	44	26	SENW	2900	34.6
17	44	26	NESW	3000	29.2
17	44	26	NWSW	3000	28.5
17	44	26	SWSW	3000	27.6
17	44	26	SESW	3000	9.7
17	44	26	NESE	3100	33.1
17	44	26	NWSE	3100	39.2
17	44	26	SWSE	3200	24.3
17	44	26	SESE	3200	37.2
17	44	27	NENE	3300	30.5
17	44	27	NWNE	3300	20.3
17	44	27	SWNE	3300	39.9
17	44	27	SENE	3300	39.3
17	44	27	NENW	3400	34.0
17	44	27	NWNW	3400	28.8
17	44	27	SWNW	3400	38.0
17	44	27	SENW	3400	34.2
17	44	27	NESW	3500	32.8
17	44	27	NWSW	3500	1.7
17	44	27	SESW	3500	29.9
17	44	27	NESE	3703	12.6
17	44	27	NESE	3700	1.1
17	44	27	NESE	3701	16.0
17	44	27	NESE	3702	4.1

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
17	44	27	NWSE	3701	35.0
17	44	27	SWSE	3800	37.1
17	44	27	SESE	3800	23.6
17	44	28	NENE	1500	24.9
17	44	28	NWNE	1600	33.1
17	44	28	SWNE	1600	18.0
17	44	28	SENE	1500	34.9
17	44	28	NENW	1600	15.8
17	44	28	SENW	1600	0.1
17	44	28	NESE	1802	2.2
17	44	34	NENE	3800	33.6
17	44	34	NWNE	3900	36.3
17	44	34	SWNE	3900	34.8
17	44	34	SENE	3800	24.7
17	44	34	NENW	3900	5.4
17	44	34	SENW	3900	26.5
17	44	34	NESW	3900	2.0
17	44	35	NENE	3200	33.4
17	44	35	NWNE	3200	32.6
17	44	35	SWNE	4501	28.0
17	44	35	SENE	4500	37.7
17	44	35	NENW	4201	33.2
17	44	35	NWNW	4300	1.7
17	44	35	NWNW	4100	31.8
17	44	35	SWNW	4300	26.5
17	44	35	SWNW	4100	3.9
17	44	35	SENW	4203	16.8
17	44	35	NWSW	4300	39.8
17	44	35	NESE	4205	19.0
17	44	35	NESE	4200	18.0
17	44	35	NWSE	4204	16.0
17	44	36	NESW	5000	21.9
17	44	36	NWSW	5000	31.9
17	44	36	SWSW	5000	29.3
17	44	36	SESW	5000	31.9
17	44	4	SWNE	100	6.5
17	44	4	SWNW	301	0.3

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37

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
17	44	4	NESW	301	36.9
17	44	4	NWSW	301	34.6
17	44	4	SWSW	400	27.7
17	44	4	SWSW	401	5.0
17	44	4	SESW	100	31.0
17	44	4	NESE	100	7.3
17	44	4	NWSE	100	0.9
17	44	4	SWSE	100	23.3
17	44	4	SESE	100	20.0
17	44	5	NENE	600	38.8
17	44	5	NWNE	700	37.7
17	44	5	SWNE	700	34.6
17	44	5	SENE	600	32.0
17	44	5	NENW	700	3.7
17	44	5	NENW	801	32.0
17	44	5	NWNW	600	37.7
17	44	5	SWNW	900	33.9
17	44	5	SENW	900	39.4
17	44	5	NESW	1002	31.7
17	44	5	NWSW	1003	4.4
17	44	5	NWSW	1002	18.7
17	44	5	SWSW	1002	31.9
17	44	5	SESW	1003	27.3
17	44	5	NESE	600	31.7
17	44	5	NWSE	500	37.2
17	44	5	SWSE	500	27.7
17	44	5	SESE	400	33.4
17	44	6	NENE	1700	39.0
17	44	6	NWNE	1700	36.1
17	44	6	SWNE	1600	35.1
17	44	6	SENE	1600	29.9
17	44	6	NENW	1800	39.7
17	44	6	NWNW	1800	16.4
17	44	6	NWNW	1900	16.7
17	44	6	SWNW	1900	42.5
17	44	6	SENW	1800	12.5
17	44	6	SENW	1900	17.1

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
17	44	6	NESW	2000	37.1
17	44	6	NWSW	2000	46.7
17	44	6	SWSW	2100	39.5
17	44	6	SESW	2100	35.6
17	44	6	NESE	1600	17.4
17	44	6	NESE	1601	11.0
17	44	6	NWSE	1600	8.2
17	44	6	NWSE	1500	27.3
17	44	6	SWSE	1500	34.0
17	44	6	SESE	1500	24.6
17	44	6	SESE	1300	4.0
17	44	7	NENE	2700	36.1
17	44	7	NWNE	2300	2.5
17	44	7	NWNE	2700	33.9
17	44	7	SWNE	2700	38.1
17	44	7	SENE	2700	35.8
17	44	7	NENW	2300	34.3
17	44	7	NWNW	2200	7.2
17	44	7	NWNW	2201	40.3
17	44	7	SWNW	2201	51.6
17	44	7	SENW	2300	33.2
17	44	7	NESW	2500	36.2
17	44	7	NWSW	2400	33.3
17	44	7	SWSW	2400	19.3
17	44	7	SESW	2501	6.6
17	44	7	SESW	2500	14.8
17	44	7	NESE	2600	36.3
17	44	7	NWSE	2600	36.0
17	44	7	SWSE	2600	31.3
17	44	7	SESE	2600	34.4
17	44	8	NENE	4000	31.0
17	44	8	NWNE	3901	36.0
17	44	8	SWNE	3990	3.8
17	44	8	SWNE	3900	16.7
17	44	8	SWNE	3902	13.2
17	44	8	SENE	3800	34.4
17	44	8	SENE	3802	1.3

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres	
17	44	8	NENW	3090	0.6	} 31.5
17	44	8	NENW	3000	30.9	
17	44	8	NWNW	3000	31.7	} 32.4
17	44	8	NWNW	3090	0.7	
17	44	8	SWNW	3200	31.2	} 36
17	44	8	SENW	3300	35.3	
17	44	8	SENW	3390	0.7	} 36
17	44	8	NESW	3400	39.6	
17	44	8	NWSW	3400	37.6	} 36
17	44	8	SWSW	3400	35.5	
17	44	8	SESW	3400	33.3	} 36
17	44	8	NESE	3700	8.0	
17	44	8	NESE	3590	3.4	} 32.7
17	44	8	NESE	3500	19.3	
17	44	8	NWSE	3500	16.7	} 32.5
17	44	8	NWSE	3902	15.8	
17	44	8	SWSE	3500	32.6	} 33.9
17	44	8	SWSE	3902	1.3	
17	44	8	SESE	3600	37.0	} 36
17	44	9	NENE	4200	31.1	
17	44	9	NWNE	4200	34.8	} 36
17	44	9	SWNE	4200	38.1	
17	44	9	SENE	4200	35.0	} 36
17	44	9	NENW	4100	38.2	
17	44	9	NWNW	4100	35.0	} 36
17	44	9	SWNW	4300	30.2	
17	44	9	SENW	4300	34.6	} 36
17	44	9	NESW	4401	16.9	
17	44	9	NESW	4400	20.8	} 37.7
17	44	9	NWSW	4400	18.2	
17	44	9	NWSW	4401	17.0	} 35.4
17	44	9	NWSW	4502	0.2	
17	44	9	SWSW	4700	20.0	} 36
17	44	9	SWSW	4502	5.0	
17	44	9	SWSW	4790	1.2	} 32.9
17	44	9	SWSW	4600	2.1	
17	44	9	SWSW	4800	4.6	

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
17	44	9	SESW	4790	2.1
17	44	9	SESW	4700	3.6
17	44	9	SESW	4800	27.4
17	44	9	NESE	4902	37.9
17	44	9	NWSE	4901	1.7
17	44	9	NWSE	4902	32.4
17	44	9	SWSE	4900	16.3
17	44	9	SWSE	4902	9.4
17	44	9	SWSE	4901	3.4
17	44	9	SESE	4902	35.8
18	43	12	NESE	701	1.5
18	43	12	NWSE	701	1.2
18	43	12	SWSE	800	10.8
18	43	12	SESE	800	14.3
18	43	13	NENE	800	20.6
18	43	13	NWNE	800	3.8
18	43	13	SENE	800	4.9
18	43	13	SENE	900	2.1
18	43	13	NESE	900	11.0
18	43	13	SESE	900	18.9
18	43	24	NESW	102	5.0
18	43	24	NWSW	102	0.6
18	43	24	SWSW	200	1.4
18	43	24	SWSW	201	12.0
18	43	24	SESW	200	10.3
18	43	24	SESW	201	14.5
18	43	24	NWSE	102	8.1
18	43	24	SWSE	304	0.1
18	43	24	SWSE	201	6.5
18	43	24	SWSE	303	1.5
18	43	24	SWSE	200	18.3
18	43	24	SESE	301	2.1
18	43	24	SESE	300	10.9
18	43	24	SESE	302	2.2
18	43	24	SESE	303	1.2
18	43	24	SESE	304	7.0
18	43	24	SESE	200	0.3

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres	
18	43	25	NENE	401	0.3	} 37
18	43	25	NENE	400	36.7	
18	43	25	NWNE	400	37.4	} 38
18	43	25	NWNE	401	0.6	
18	43	25	SWNE	500	39.2	} 37.8
18	43	25	SENE	501	1.0	
18	43	25	SENE	500	36.8	
18	43	25	NENW	200	38.5	
18	43	25	NWNW	200	23.3	
18	43	25	SWNW	600	37.9	
18	43	25	SENW	600	39.1	
18	43	25	NESW	800	38.0	
18	43	25	NWSW	700	36.8	
18	43	25	SWSW	700	33.2	
18	43	25	SESW	800	38.3	
18	43	25	NESE	900	35.7	
18	43	25	NWSE	900	37.0	
18	43	25	SWSE	900	39.2	
18	43	25	SESE	1000	36.9	
18	43	26	NENE	1100	5.5	
18	43	26	SWNE	1100	9.7	
18	43	26	SENE	1100	34.8	
18	43	26	NESW	1201	18.6	} 22.7
18	43	26	NESW	1300	3.8	
18	43	26	NWSW	1300	4.1	
18	43	26	SWSW	1300	34.7	
18	43	26	SESW	1300	33.4	
18	43	26	NESE	1400	34.9	
18	43	26	NWSE	1201	35.1	
18	43	26	SWSE	1201	24.3	
18	43	26	SESE	1400	32.8	
18	43	27	SESW	1600	16.7	
18	43	27	SWSE	1600	36.7	
18	43	27	SESE	1600	3.6	
18	43	34	NENE	1700	11.5	
18	43	34	NWNE	1700	35.7	
18	43	34	SWNE	1700	32.9	

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
18	43	34	SENE	2200	30.4
18	43	34	NENW	1800	28.7
18	43	34	NWNW	1800	12.1
18	43	34	SWNW	1800	15.1
18	43	34	SENW	1800	16.6
18	43	34	NESE	2200	30.7
18	43	34	NWSE	2200	28.3
18	43	35	NENE	2401	38.0
18	43	35	NWNE	2400	1.9
18	43	35	NWNE	2401	7.5
18	43	35	NWNE	2500	4.8
18	43	35	SWNE	2400	0.8
18	43	35	SWNE	2401	7.9
18	43	35	SENE	2401	30.2
18	43	35	SENE	2400	1.7
18	43	35	NENW	2500	26.4
18	43	35	NWNW	2500	27.7
18	43	35	SWNW	2500	0.9
18	43	35	SENW	2500	35.2
18	43	35	NESW	2601	6.7
18	43	35	NWSW	2602	4.0
18	43	35	SESW	2601	18.2
18	43	35	NESE	2800	32.2
18	43	35	NWSE	2900	8.4
18	43	35	SWSE	2900	26.7
18	43	35	SESE	2800	7.1
18	43	36	NENE	3100	1.5
18	43	36	NENE	3000	35.5
18	43	36	NWNE	3100	13.2
18	43	36	NWNE	3000	20.6
18	43	36	SWNE	3100	36.5
18	43	36	SENE	3100	22.1
18	43	36	SENE	3000	10.8
18	43	36	NENW	3200	37.0
18	43	36	NWNW	3200	34.7
18	43	36	SWNW	3200	38.7
18	43	36	SENW	3200	39.1

14.2

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
18	43	36	NESW	3300	22.8
18	43	36	NWSW	2800	16.2
18	43	36	SWSW	2800	24.5
18	43	36	SESW	3300	28.2
18	43	36	NESE	3400	19.3
18	43	36	NWSE	3500	30.3
18	43	36	SWSE	3500	4.4
18	43	36	SESE	3400	3.3
18	44	1	NENW	901	33.0
18	44	1	NWNW	1000	7.0
18	44	1	NWNW	901	8.8
18	44	1	SWNW	901	0.4
18	44	1	SENW	901	33.7
18	44	1	SENW	902	3.0
18	44	1	NESW	600	2.1
18	44	1	NESW	700	33.4
18	44	1	NWSW	902	3.0
18	44	1	SWSW	800	10.5
18	44	1	SESW	800	26.2
18	44	1	NWSE	700	1.6
18	44	1	NWSE	600	34.0
18	44	1	SWSE	800	30.3
18	44	12	NENE	2100	30.0
18	44	12	NWNE	1900	7.9
18	44	12	NWNE	2000	23.1
18	44	12	SWNE	2000	25.7
18	44	12	SENE	2200	32.0
18	44	12	NENW	1900	28.2
18	44	12	SENW	1900	0.1
18	44	12	NESW	1800	7.6
18	44	12	NWSW	1800	11.7
18	44	12	SWSW	1800	14.2
18	44	12	SESW	1800	35.5
18	44	12	NESE	2300	20.0
18	44	12	NESE	2301	5.0
18	44	12	NWSE	2500	6.2
18	44	12	NWSE	2601	6.0

15.8  
36.7  
35.5  
35.6  
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18

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
18	44	12	NWSE	2503	1.8
18	44	12	NWSE	2502	4.0
18	44	12	SWSE	2700	20.7
18	44	12	SWSE	2601	11.0
18	44	12	SESE	2400	29.0
18	44	13	NENE	2801	28.4
18	44	13	NWNE	2801	32.9
18	44	13	SWNE	2900	36.8
18	44	13	SENE	2900	24.5
18	44	13	NENW	4300	5.3
18	44	13	NWNW	4300	16.2
18	44	13	SWNW	4300	36.2
18	44	13	SENW	4300	37.0
18	44	13	NESW	3200	35.9
18	44	13	NWSW	3303	2.2
18	44	13	NWSW	3302	35.5
18	44	13	SWSW	3303	2.8
18	44	13	SWSW	3301	4.0
18	44	13	SWSW	3300	10.0
18	44	13	SWSW	3302	14.2
18	44	13	SESW	3200	27.1
18	44	13	NESE	2900	18.1
18	44	13	NWSE	3100	0.4
18	44	13	NWSE	2900	29.2
18	44	13	SWSE	3100	8.1
18	44	13	SWSE	3102	0.9
18	44	13	SWSE	3101	10.5
18	44	13	SESE	2900	1.3
18	44	13	SESE	3000	18.2
18	44	14	NENE	3500	14.4
18	44	14	SWNE	3900	8.8
18	44	14	SENE	3601	2.8
18	44	14	SENE	3600	13.4
18	44	14	SENE	3500	14.6
18	44	14	NESW	4000	33.4
18	44	14	NWSW	4101	16.5
18	44	14	SWSW	4100	24.0

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
18	44	14	SESW	4000	34.1
18	44	14	NESE	3800	16.4
18	44	14	NESE	3600	13.9
18	44	14	NESE	3700	4.3
18	44	14	NWSE	3900	35.4
18	44	14	SWSE	3900	27.7
18	44	14	SESE	3800	33.5
18	44	15	NESW	4200	3.4
18	44	15	SESW	4200	12.8
18	44	15	NESE	4200	18.1
18	44	15	NESE	4201	1.1
18	44	15	NWSE	4200	4.3
18	44	15	SWSE	4200	38.3
18	44	15	SESE	4201	4.2
18	44	15	SESE	4200	29.2
18	44	16	SWSW	900	11.8
18	44	17	NESE	902	3.4
18	44	17	SESE	900	25.4
18	44	18	SENE	1200	1.0
18	44	18	NENW	1400	11.6
18	44	18	NWNW	1500	20.3
18	44	18	SWNW	1500	17.5
18	44	18	SENE	1400	14.6
18	44	18	NESW	1401	4.6
18	44	18	NESW	1600	10.0
18	44	18	NWSW	1600	21.8
18	44	18	SWSW	1600	38.3
18	44	18	SESW	1600	4.8
18	44	18	SESW	1301	6.5
18	44	18	NESE	1301	13.2
18	44	18	NWSE	1301	22.3
18	44	18	SWSE	1301	14.2
18	44	18	SESE	1301	10.3
18	44	19	NWNE	101	30.6
18	44	19	SWNE	300	14.5
18	44	19	SWNE	700	0.4
18	44	19	SWNE	400	8.3

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
18	44	19	SWNE	500	0.6
18	44	19	SENE	500	12.3
18	44	19	SENE	400	0.3
18	44	19	NENW	600	25.9
18	44	19	NWNW	600	24.5
18	44	19	SWNW	700	18.6
18	44	19	SENW	700	27.5
18	44	19	SWSW	1000	16.0
18	44	19	NESE	400	11.4
18	44	19	NWSE	400	15.4
18	44	19	SWSE	1300	8.7
18	44	19	SESE	1300	6.2
18	44	20	NENE	1500	2.3
18	44	20	NWNE	1500	6.7
18	44	20	SWNE	1500	31.1
18	44	20	SENE	1500	32.1
18	44	20	NENW	1500	32.5
18	44	20	NWNW	1601	15.4
18	44	20	SWNW	1601	21.7
18	44	20	SENW	1500	20.7
18	44	20	NESW	1800	11.2
18	44	20	NWSW	1800	5.2
18	44	20	SWSW	1700	8.9
18	44	20	SESW	1800	24.0
18	44	20	NESE	1500	30.8
18	44	20	NWSE	1900	9.2
18	44	20	SWSE	1802	0.8
18	44	20	SWSE	1800	32.7
18	44	20	SWSE	1801	2.8
18	44	20	SESE	1801	1.4
18	44	20	SESE	2000	29.5
18	44	21	NENE	2200	4.4
18	44	21	SENE	2200	3.6
18	44	21	NENW	2400	3.8
18	44	21	NWNW	2400	15.2
18	44	21	NWSW	2500	21.2
18	44	21	SWSW	2600	32.8

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
18	44	21	SESW	2701	18.0
18	44	21	NESE	2800	15.8
18	44	21	SWSE	2700	13.0
18	44	21	SWSE	2703	5.0
18	44	21	SESE	2800	36.2
18	44	22	NENE	517	5.4
18	44	22	NENE	500	3.6
18	44	22	NENE	502	8.8
18	44	22	NWNE	502	21.4
18	44	22	NWNE	515	3.0
18	44	22	NWNE	400	9.6
18	44	22	SWNE	700	18.3
18	44	22	SWNE	300	20.4
18	44	22	SENE	700	23.0
18	44	22	NENW	100	27.3
18	44	22	NWNW	200	6.1
18	44	22	NWNW	100	27.1
18	44	22	SWNW	200	36.9
18	44	22	SENW	300	33.8
18	44	22	NESW	300	39.8
18	44	22	NWSW	800	36.1
18	44	22	SWSW	800	33.9
18	44	22	SESW	900	36.0
18	44	22	NESE	700	38.6
18	44	22	NWSE	300	40.0
18	44	22	SWSE	1007	2.7
18	44	22	SWSE	1003	9.0
18	44	22	SWSE	1004	3.8
18	44	22	SWSE	1002	19.0
18	44	22	SESE	1005	3.0
18	44	22	SESE	1007	1.8
18	44	22	SESE	1001	5.0
18	44	22	SESE	1000	18.3
18	44	22	SESE	1006	8.6
18	44	23	NENE	1500	36.1
18	44	23	NWNE	1400	36.4
18	44	23	SWNE	1400	35.7

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
18	44	23	SENE	1501	8.0
18	44	23	SENE	1500	27.6
18	44	23	NENW	1300	28.2
18	44	23	NWNW	512	7.2
18	44	23	NWNW	507	19.0
18	44	23	NWNW	1300	1.2
18	44	23	NWNW	504	4.7
18	44	23	NWNW	501	1.5
18	44	23	SWNW	1200	21.8
18	44	23	SWNW	501	4.5
18	44	23	SWNW	504	0.3
18	44	23	SWNW	512	5.8
18	44	23	SENW	1301	1.6
18	44	23	SENW	1300	25.9
18	44	23	NESW	1600	31.5
18	44	23	NWSW	1600	32.9
18	44	23	SWSW	1700	2.9
18	44	23	SWSW	1701	30.2
18	44	23	SESW	1700	26.7
18	44	23	NESE	1502	3.7
18	44	23	NESE	1500	26.3
18	44	23	NESE	1503	5.3
18	44	23	NWSE	1800	29.5
18	44	23	SWSE	1800	19.5
18	44	23	SESE	2004	1.5
18	44	23	SESE	2005	2.3
18	44	23	SESE	2002	5.0
18	44	23	SESE	2003	1.5
18	44	23	SESE	2009	1.0
18	44	23	SESE	2010	4.0
18	44	23	SESE	2014	3.0
18	44	23	SESE	2011	3.7
18	44	23	SESE	2012	1.0
18	44	23	SESE	2000	4.0
18	44	23	SESE	2013	6.6
18	44	24	NENE	2600	27.1
18	44	24	NWNE	2400	35.0

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
18	44	24	SWNE	2500	28.4
18	44	24	SENE	2700	37.0
18	44	24	NENW	2300	30.7
18	44	24	NWNW	2200	18.5
18	44	24	NWNW	2201	8.0
18	44	24	SWNW	2200	37.8
18	44	24	SENW	2300	25.3
18	44	24	NESW	2800	34.7
18	44	24	NWSW	2800	32.0
18	44	24	NWSW	2801	0.8
18	44	24	SWSW	2900	21.4
18	44	24	SWSW	3000	3.7
18	44	24	SWSW	3101	6.8
18	44	24	SWSW	3000	0.1
18	44	24	SWSW	3002	3.9
18	44	24	SESW	3200	12.6
18	44	24	SESW	3101	8.5
18	44	24	SESW	3300	4.0
18	44	24	SESW	3100	5.5
18	44	24	NESE	3401	22.6
18	44	24	NESE	3400	9.0
18	44	24	NWSE	2800	9.5
18	44	24	SWSE	3200	1.3
18	44	24	SWSE	3300	32.0
18	44	24	SESE	3600	0.9
18	44	24	SESE	3602	3.2
18	44	24	SESE	3603	0.8
18	44	24	SESE	3500	16.0
18	44	24	SESE	3601	5.0
18	44	24	SESE	3604	1.2
18	44	25	NENE	3804	11.5
18	44	25	NENE	3700	7.0
18	44	25	NENE	3803	5.2
18	44	25	NWNE	3800	22.5
18	44	25	SWNE	3800	18.8
18	44	25	NENW	4000	29.6
18	44	25	NENW	3900	1.5

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
18	44	25	NENW	4001	5.0
18	44	25	NWNW	4000	27.6
18	44	25	SWNW	4500	23.5
18	44	25	SENW	4100	8.7
18	44	25	SENW	4101	4.3
18	44	25	SENW	4000	2.2
18	44	25	NWSW	4400	2.0
18	44	25	SWSW	4400	2.3
18	44	26	NENE	4500	32.6
18	44	26	NWNE	4700	3.0
18	44	26	NWNE	4702	7.0
18	44	26	SWNE	4702	11.0
18	44	26	SENE	4500	11.6
18	44	26	NENW	4801	3.6
18	44	26	NENW	4800	12.8
18	44	26	NWNW	4900	22.5
18	44	26	SWNW	4900	10.6
18	44	26	SENW	4801	4.6
18	44	26	SENW	4802	2.2
18	44	26	NESW	5201	10.8
18	44	26	NESW	5301	4.5
18	44	26	NWSW	5200	1.4
18	44	26	NWSW	5201	4.4
18	44	26	NWSW	5402	4.2
18	44	26	SWSW	5404	2.2
18	44	26	SWSW	5402	2.4
18	44	26	SWSW	5400	1.8
18	44	26	SWSW	5401	2.7
18	44	26	SESW	5301	4.2
18	44	26	SESW	5300	2.6
18	44	26	NESE	5000	11.9
18	44	26	NWSE	5100	11.0
18	44	26	SWSE	5100	4.3
18	44	26	SESE	5000	8.7
18	44	27	NENE	5501	4.0
18	44	27	NENE	5505	5.0
18	44	27	NENE	5500	13.1

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres	
18	44	27	NWNE	5600	31.8	
18	44	27	SWNE	5600	11.3	
18	44	27	SENE	5503	5.1	} 13.2
18	44	27	SENE	5500	8.1	
18	44	27	NENW	5700	39.4	
18	44	27	NWNW	5900	37.3	
18	44	27	SWNW	6001	2.5	} 32.5
18	44	27	SWNW	6000	30.0	
18	44	27	SENE	5901	1.6	} 25.5
18	44	27	SENE	5900	23.9	
18	44	27	NESW	6100	13.7	
18	44	27	NWSW	6100	12.3	
18	44	27	SWSW	6200	11.1	
18	44	27	SESW	6200	13.1	
18	44	27	NESE	6300	7.3	
18	44	27	NESE	6302	1.1	} 12.1
18	44	27	NESE	6301	3.7	
18	44	27	NWSE	6301	12.4	
18	44	27	SWSE	6400	11.9	
18	44	27	SESE	6400	11.1	
18	44	28	NENE	2900	36.7	
18	44	28	NWNE	2900	38.3	
18	44	28	SWNE	3000	39.7	
18	44	28	SENE	3000	34.0	
18	44	28	NENW	3101	9.2	} <del>20.4</del>
18	44	28	NENW	3100	27.2	
18	44	28	NWNW	3101	28.6	} 36.4
18	44	28	SWNW	3200	34.7	
18	44	28	SENE	3100	38.8	
18	44	28	NESW	3600	4.9	
18	44	28	NESW	3500	6.0	} 38.6
18	44	28	NESW	3400	27.7	
18	44	28	NWSW	3200	22.5	} 22.5
18	44	28	NWSW	3500	0.3	
18	44	28	SWSW	3500	14.8	
18	44	28	SESW	3400	1.5	} 20.4
18	44	28	SESW	3500	6.5	

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
18	44	28	SESW	3600	12.4
18	44	28	NESE	3700	13.1
18	44	28	NWSE	3700	33.9
18	44	28	SWSE	3800	23.1
18	44	28	SESE	3800	11.3
18	44	29	NENE	3900	34.0
18	44	29	NWNE	4000	25.7
18	44	29	SWNE	4000	21.0
18	44	29	SENE	3900	22.1
18	44	29	NENW	4100	27.2
18	44	29	NWNW	4100	9.0
18	44	29	SWNW	4200	11.1
18	44	29	SENW	4200	11.8
18	44	29	NESW	4400	10.6
18	44	29	NWSW	4300	14.5
18	44	29	SWSW	4300	10.1
18	44	29	SESW	4500	15.2
18	44	29	NESE	4600	8.9
18	44	29	NWSE	4400	5.7
18	44	29	NWSE	4700	6.2
18	44	29	SWSE	4700	13.1
18	44	29	SESE	3500	9.8
18	44	30	NENE	4902	9.3
18	44	30	NENE	4903	3.2
18	44	30	NWNE	4903	7.7
18	44	30	NWNE	4904	0.8
18	44	30	SWNE	4901	6.9
18	44	30	SENE	4201	10.1
18	44	30	NENW	5002	13.8
18	44	30	NWNW	5001	20.0
18	44	30	NWNW	5002	16.5
18	44	30	SWNW	5002	0.4
18	44	30	SWNW	5000	4.0
18	44	30	SWNW	5001	24.4
18	44	30	SWNW	5100	18.9
18	44	30	SENW	5001	1.0
18	44	30	SENW	5100	14.4

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
18	44	30	SENW	5002	14.2
18	44	30	NESW	5200	38.7
18	44	30	NWSW	5100	47.6
18	44	30	SWSW	5100	47.0
18	44	30	SESW	5200	31.5
18	44	30	NESE	3100	3.5
18	44	30	NESE	5302	3.5
18	44	30	NESE	5301	6.7
18	44	30	NWSE	3100	35.4
18	44	30	SWSE	3100	33.1
18	44	30	SESE	3100	17.7
18	44	30	SESE	5301	0.8
18	44	31	NENE	5600	10.0
18	44	31	NENE	5400	3.3
18	44	31	NWNE	5600	32.5
18	44	31	SWNE	5600	18.2
18	44	31	SENE	5800	5.4
18	44	31	SENE	5600	26.3
18	44	31	NENW	6100	6.1
18	44	31	NWNW	6100	34.4
18	44	31	SWNW	6200	45.2
18	44	31	NESW	6400	36.4
18	44	31	NWSW	6500	37.9
18	44	31	SWSW	6500	10.3
18	44	31	SESW	6400	16.7
18	44	31	NESE	5800	32.9
18	44	31	NWSE	6400	5.9
18	44	31	SWSE	6400	22.6
18	44	31	SESE	6600	2.7
18	44	32	NWNE	6700	16.8
18	44	32	SWNE	6700	11.8
18	44	32	SENE	6700	9.7
18	44	32	NENW	6800	17.5
18	44	32	NWNW	6900	1.1
18	44	32	SWNW	7000	6.0
18	44	32	SWNW	6900	25.4
18	44	32	SENW	6900	4.2

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
18	44	32	SESW	6800	15.3
18	44	32	NESW	7100	12.4
18	44	32	NWSW	7100	0.4
18	44	32	NWSW	7000	35.4
18	44	32	SWSW	7000	34.6
18	44	32	SESW	7100	34.7
18	44	32	NESE	7200	15.0
18	44	32	NWSE	7200	17.4
18	44	32	SWSE	7200	12.5
18	44	32	SESE	7200	16.6
18	44	33	NENE	7300	37.0
18	44	33	NWNE	7400	24.0
18	44	33	NWNE	7300	10.5
18	44	33	SWNE	7400	39.1
18	44	33	SENE	7300	20.2
18	44	33	SENE	7400	15.9
18	44	33	NENW	7500	14.0
18	44	33	NWNW	7500	9.7
18	44	33	SWNW	7500	6.0
18	44	33	SESW	7500	14.8
18	44	33	NESW	7700	10.1
18	44	33	NWSW	7600	11.0
18	44	33	SWSW	7600	13.1
18	44	33	SESW	7800	0.6
18	44	33	SESW	7700	10.5
18	44	33	NESE	8000	12.0
18	44	33	NWSE	7900	13.5
18	44	33	SWSE	7901	3.0
18	44	33	SWSE	7900	9.4
18	44	33	SESE	8000	15.9
18	44	34	NENE	6500	6.1
18	44	34	NWNE	6500	12.4
18	44	34	SWNE	6601	13.6
18	44	34	SENE	6601	7.2
18	44	34	NENW	6700	4.0
18	44	34	NENW	6701	8.8
18	44	34	NWNW	6701	14.6

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
18	44	34	SWNW	6800	11.3
18	44	34	SENW	6800	4.5
18	44	34	NESW	6900	17.4
18	44	34	NWSW	6900	14.5
18	44	34	SWSW	6900	10.7
18	44	34	SWSW	6901	0.8
18	44	34	SESW	7000	14.1
18	44	34	NESE	7100	9.7
18	44	34	NWSE	7100	12.5
18	44	34	SWSE	7101	13.2
18	44	34	SESE	7101	15.1
18	44	35	NENE	7400	1.0
18	44	35	NWNE	7403	6.7
18	44	35	NWNE	7406	1.0
18	44	35	SWNE	7501	7.4
18	44	35	SENE	7501	2.5
18	44	35	SENE	7500	6.9
18	44	35	NENW	7201	11.9
18	44	35	NWNW	7200	13.0
18	44	35	SWNW	6600	11.7
18	44	35	SENW	7300	8.3
18	44	35	NESW	7700	15.1
18	44	35	NWSW	7600	12.5
18	44	35	SWSW	7600	6.2
18	44	35	SESW	7700	5.9
18	44	35	NWSE	7700	7.3
18	44	35	SWSE	7700	0.8
18	44	7	NWSW	600	3.9
18	44	7	SWSW	600	18.3
18	44	7	SESW	600	2.5
18	45	18	NWNE	6600	14.1
18	45	18	SWNE	6601	0.3
18	45	18	SWNE	6600	33.2
18	45	18	SENE	6600	1.4
18	45	18	NENW	6700	25.7
18	45	18	NWNW	6800	30.3
18	45	18	SWNW	6900	18.3

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
18	45	18	SESW	6900	19.1
18	45	18	NESE	6900	28.0
18	45	18	NWSE	6900	22.1
18	45	19	SWSW	403	2.3
18	45	19	SWSW	411	1.1
18	45	19	SWSW	410	1.6
18	45	7	SWNW	2300	26.4
18	45	7	NWSE	2400	30.0
18	45	7	SWSW	2500	30.6
18	45	7	SESE	2500	15.4
19	41	23	SWSE	200	2.4
19	41	25	SWNE	300	7.6
19	41	25	SENE	300	5.3
19	41	25	SESW	300	3.9
19	41	25	NESE	400	3.2
19	41	25	NWSE	400	4.2
19	41	25	SESW	400	20.2
19	41	25	NESE	500	16.1
19	41	25	NWSE	500	6.2
19	41	25	SWSE	600	8.6
19	42	24	NESE	300	1.3
19	42	24	SESW	600	5.1
19	42	24	NESE	300	13.4
19	42	24	NWSE	300	14.5
19	42	24	SWSE	300	10.8
19	42	24	SESE	300	9.1
19	42	25	NENE	800	21.3
19	42	25	NWNE	1000	19.9
19	42	25	SWNE	1100	24.7
19	42	25	SWNE	800	3.3
19	42	25	SENE	900	20.1
19	42	25	SENE	800	4.6
19	42	25	NENW	1200	14.2
19	42	25	NWNW	1200	20.9
19	42	25	SWNW	1200	29.4
19	42	25	SWNW	1201	6.0
19	42	25	SESW	1200	29.7

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35.4

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
19	42	25	NESW	1100	34.5
19	42	25	NWSW	1400	29.7
19	42	25	SWSW	1400	30.3
19	42	25	SESW	1100	37.0
19	42	25	NESE	900	10.5
19	42	25	NESE	800	14.1
19	42	25	NWSE	1100	14.5
19	42	25	NWSE	800	12.7
19	42	25	SWSE	1600	22.4
19	42	25	SESE	1600	19.1
19	42	25	SESE	900	4.1
19	42	27	NWNE	1802	0.8
19	42	27	SWNE	1802	37.2
19	42	27	SENE	1802	19.2
19	42	27	NENW	2301	7.8
19	42	27	NWNW	2400	11.1
19	42	27	SWNW	2400	14.7
19	42	27	SENW	2301	32.6
19	42	27	NESW	2301	35.1
19	42	27	NWSW	2500	37.1
19	42	27	SWSW	2500	14.3
19	42	27	SESW	2301	7.4
19	42	27	NESE	1802	2.3
19	42	27	NWSE	1802	26.5
19	42	28	NENE	300	10.6
19	42	28	NWNE	300	11.3
19	42	28	SWNE	400	4.4
19	42	28	SWNE	300	5.5
19	42	28	SENE	300	17.8
19	42	28	SENW	400	13.0
19	42	28	NESW	900	25.5
19	42	28	NWSW	900	6.4
19	42	28	SWSW	900	29.9
19	42	28	SESW	900	26.2
19	42	28	NESE	400	5.3
19	42	28	NESE	800	31.9
19	42	28	NWSE	400	36.0

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
19	42	28	SWSE	400	31.9
19	42	28	SESE	800	16.1
19	42	28	SESE	400	3.4
19	42	29	NWSW	1100	26.6
19	42	29	SWSW	1100	25.1
19	42	30	SWNE	1300	2.5
19	42	30	SENE	1300	15.7
19	42	30	NESE	1300	38.4
19	42	30	NWSE	1300	30.4
19	42	30	SWSE	1300	19.1
19	42	30	SESE	1300	26.1
19	42	31	NENE	1500	27.2
19	42	31	NWNE	1600	33.5
19	42	31	SWNE	1600	35.6
19	42	31	SENE	1500	32.7
19	42	31	NENW	1600	21.9
19	42	31	NWNW	1600	28.5
19	42	31	SWNW	1600	6.4
19	42	31	SENW	1600	26.7
19	42	31	NESW	1600	2.2
19	42	31	NWSE	2000	24.8
19	42	31	SWSE	2000	0.4
19	42	31	SESE	2200	28.1
19	42	32	NENW	2700	18.7
19	42	32	NWNW	2700	20.7
19	42	32	SWNW	2800	31.3
19	42	32	SENW	2800	1.1
19	42	32	SWSW	900	2.8
19	42	32	SWSE	2900	0.2
19	42	34	NENW	2500	4.3
19	42	34	NWNW	2500	1.4
19	42	36	NENE	1600	10.6
19	42	36	NWNE	1600	19.2
19	42	36	NENW	3400	29.5
19	42	36	NWNW	3400	26.9
19	42	36	SWNW	3400	6.9
19	43	18	NWNW	1200	10.7

19.5

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
19	43	18	SWNW	1200	10.5
19	43	18	NWSW	1200	13.2
19	43	19	NWNE	104	13.3
19	43	19	SWNE	104	25.6
19	43	19	SWNE	100	14.2
19	43	19	SENE	100	19.8
19	43	19	SENE	104	4.9
19	43	19	NENW	104	27.4
19	43	19	SENW	104	5.4
19	43	19	SENW	100	14.1
19	43	19	NESW	300	31.3
19	43	19	NWSW	200	5.0
19	43	19	SWSW	200	18.6
19	43	19	SESW	300	38.2
19	43	19	NESE	100	33.0
19	43	19	NWSE	100	28.6
19	43	19	SWSE	300	36.5
19	43	19	SESE	100	34.9
19	43	20	SWSW	100	13.4
19	43	29	NWNW	600	30.8
19	43	29	SWNW	700	34.9
19	43	29	SENW	700	11.1
19	43	29	NESW	802	5.2
19	43	29	NWSW	801	14.2
19	43	29	NWSW	802	19.0
19	43	29	SWSW	801	29.1
19	43	29	SESW	801	13.5
19	43	30	NENE	600	35.2
19	43	30	NWNE	1201	34.1
19	43	30	SWNE	1201	6.7
19	43	30	SWNE	1201	13.4
19	43	30	SENE	802	7.6
19	43	30	SENE	700	15.0
19	43	30	NENW	1201	26.6
19	43	30	SENW	1201	22.7
19	43	30	SENW	1201	4.8
19	43	30	NESW	1300	2.3

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
19	43	30	NESW	1201	30.8
19	43	30	NWSW	1300	22.2
19	43	30	NWSW	1201	3.4
19	43	30	SWSW	1300	33.4
19	43	30	SESW	1300	28.1
19	43	30	NESE	900	6.1
19	43	30	NESE	802	19.2
19	43	30	NWSE	1201	34.5
19	43	30	SWSE	1400	28.7
19	43	30	SESE	900	20.9
19	43	30	SESE	1500	7.8
19	43	31	NENE	1500	33.0
19	43	31	NWNE	1400	25.3
19	43	31	SWNE	1400	15.0
19	43	31	SENE	1500	20.2
19	43	31	NENW	1300	16.9
19	43	31	NWNW	1300	14.6
19	43	31	NESE	1500	4.0
19	43	32	NENW	801	18.8
19	43	32	NWNW	801	24.9
19	43	32	SWNW	801	21.3
19	43	32	SENW	801	20.4
19	44	2	NWNW	1300	10.2
19	44	3	NENE	1000	12.5
19	44	3	NWNE	1000	18.2
19	44	3	SWNE	1100	18.5
19	44	3	SENE	1100	12.1
19	44	3	NENW	1200	13.6
19	44	3	NWNW	1300	12.7
19	44	3	SENW	1100	13.8
19	44	3	NESW	1100	17.3
19	44	3	NWSW	1400	13.2
19	44	3	SWSW	1100	13.7
19	44	3	SESW	1100	9.5
19	44	3	NESE	1700	6.3
19	44	3	NWSE	1700	8.8
19	44	3	SWSE	1700	4.3

25.6

25.3

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
19	44	4	NENE	101	13.4
19	44	4	NWNE	200	8.1
19	44	4	SWNE	200	1.9
19	44	4	SENE	101	8.3
19	44	4	SENE	502	8.4
19	44	4	NENW	600	4.1
19	44	4	NENW	600	2.2
19	44	4	NWNW	600	15.7
19	44	4	SWNW	600	1.1
19	44	4	NESE	502	4.0
19	44	5	NENE	600	5.0
19	44	5	NWNE	1300	23.2
19	44	5	NWNE	600	8.2
19	44	5	SWNE	1300	26.8
19	44	5	SENE	600	1.8
19	44	5	SENE	1300	2.9
19	44	5	NENW	1300	31.9
19	44	5	NWNW	1300	17.7
19	44	5	NWNW	1301	5.0
19	44	5	NWNW	1302	2.9
19	44	5	SENW	1300	4.8
20	41	12	NENW	600	6.1
20	41	14	SWSE	1800	3.7
20	41	14	SESE	1800	14.1
20	41	23	SWNE	300	13.8
20	41	23	SENW	101	3.7
20	41	23	NESW	300	10.5
20	41	23	SESW	300	5.3
20	41	23	NWSE	300	0.2
20	41	27	NESW	600	3.9
20	41	27	SESW	600	9.2
20	41	33	NENE	800	1.4
20	41	34	NENW	800	3.1
20	41	34	NWNW	800	12.9
20	42	5	NWNW	2000	0.4
20	42	5	SENW	1800	1.2
20	42	5	NESW	1800	0.5

16.7

6.3

31.7

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25.6

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
20	42	5	NWSW	1800	1.1
Total:					28291.2

**SUPPLEMENTAL IRRIGATION**

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
16	43	10	SWNW	600	24.6
16	43	10	SENW	502	6.3
16	43	10	NESW	700	40.2
16	43	10	NWSW	600	4.6
16	43	10	NWSW	700	5.7
16	43	10	NESE	1100	20.2
16	43	10	NWSE	1100	28.7
16	43	10	SWSE	1100	22.4
16	43	10	SESE	1200	9.0
16	43	10	SESE	1100	28.7
16	43	11	SWSW	1200	23.9
16	43	11	SESW	1200	6.7
16	43	13	SWSW	1500	3.4
16	43	14	NWNE	1502	9.1
16	43	14	SWNE	1502	23.5
16	43	14	SENE	1502	1.7
16	43	14	NENW	1200	38.4
16	43	14	NWNW	1200	39.4
16	43	14	SWNW	1200	34.3
16	43	14	SWNW	1101	3.4
16	43	14	SENW	1200	38.7
16	43	14	NESW	1303	10.1
16	43	14	NESW	1101	0.3
16	43	14	NESW	1200	17.5
16	43	14	NESW	1303	6.9
16	43	14	NWSW	1303	18.5
16	43	14	NWSW	1101	5.1
16	43	14	NWSW	1101	10.2
16	43	14	NWSW	1200	3.0
16	43	14	SWSW	1302	1.1
16	43	14	SWSW	1301	11.3

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37.7  
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34.8  
36.8  
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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
16	43	14	SWSW	1303	1.7
16	43	14	SWSW	1302	5.4
16	43	14	SESW	1301	29.0
16	43	14	SESW	1500	0.3
16	43	14	SESW	1303	5.1
16	43	14	NESE	1502	36.5
16	43	14	NWSE	1502	37.8
16	43	14	SWSE	1500	16.4
16	43	14	SWSE	1301	1.9
16	43	14	SWSE	1502	18.3
16	43	14	SESE	1502	21.1
16	43	14	SESE	1500	14.5
16	43	15	NENE	1200	26.7
16	43	15	SENE	1200	2.3
16	43	15	NESE	1303	2.9
16	43	15	NESE	1101	7.8
16	43	23	NENE	700	37.6
16	43	23	NENE	701	1.0
16	43	23	NWNE	700	7.1
16	43	23	NWNE	701	28.1
16	43	23	NENW	701	4.5
16	43	23	NENW	701	12.8
16	44	30	SWSW	800	15.0
16	44	30	SWSW	800	21.5
16	44	30	SESW	900	35.3
16	44	30	SWSE	900	39.8
16	44	31	NENW	1300	35.2
16	44	31	NWNW	1300	14.7
17	44	13	SWSW	1300	19.2
17	44	23	NENE	900	33.7
17	44	23	NWNE	900	33.2
17	44	23	SWNE	900	26.8
17	44	23	SENE	900	27.1
17	44	23	NENW	600	7.2
17	44	23	NESE	1000	32.3
17	44	23	SESE	1000	13.1
17	44	4	NENW	301	11.5
17	44	4	NWNW	301	33.1
17	44	4	SWNW	301	35.0

37.4

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35.6

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36.5

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
17	44	4	SENW	301	30.4
17	44	4	NESE	100	2.3
17	44	4	NWSE	100	33.2
17	44	4	SWSE	100	6.8
17	44	4	SESE	100	12.7
19	41	23	SESW	200	4.6
19	41	23	SESW	200	4.5
19	41	23	SWSE	200	14.8
19	41	23	SWSE	200	9.5
19	41	23	SESE	200	4.1
19	41	23	SESE	200	9.0
19	41	25	NWNW	101	2.3
19	41	25	SWNW	400	29.5
19	41	25	SENW	300	9.7
19	41	25	NESW	400	28.9
19	41	25	NWSW	400	4.0
19	41	25	SESW	400	0.9
19	41	25	NESE	500	1.1
19	41	25	NWSE	600	1.6
19	41	25	NWSE	500	19.2
19	41	25	SWSE	600	27.5
19	41	25	SWSE	500	0.7
19	41	25	SESE	500	18.8
19	41	25	SESE	600	3.6
19	41	26	NENE	400	34.1
19	41	26	NWNE	400	4.8
19	41	26	SENE	400	14.0
19	41	36	NENE	1000	28.9
19	41	36	NENE	500	1.4
19	41	36	NWNE	1000	12.1
19	41	36	SWNE	1000	16.5
19	41	36	SENE	1000	35.4
19	41	36	NESE	900	27.2
19	41	36	SWSE	900	4.6
19	41	36	SESE	900	38.2
19	42	31	SENE	1500	5.6
19	42	31	NWNW	1600	3.5

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 24.3  
 13.1  
 20.8  
 28.2  
 22.4  
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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
19	42	31	SWNW	1600	30.0
19	42	31	SENW	1600	5.1
19	42	31	NESW	2100	0.5
19	42	31	NESW	1800	1.1
19	42	31	NESW	1802	27.8
19	42	31	NESW	1600	0.4
19	42	31	NESW	1802	1.2
19	42	31	NWSW	1800	27.8
19	42	31	NWSW	1802	6.3
19	42	31	SWSW	1800	4.5
19	42	31	SWSW	1900	27.9
19	42	31	SWSW	1802	1.2
19	42	31	SESW	1802	30.1
19	42	31	SESW	1802	7.4
19	42	31	NESE	1500	38.5
19	42	31	NWSE	2100	11.9
19	42	31	SWSE	2100	32.8
19	42	31	SESE	2300	4.7
19	42	32	SWNW	2800	7.0
19	42	32	SENW	2800	39.0
19	42	32	NESW	2900	37.7
19	42	32	NWSW	2900	37.1
19	42	32	SWSW	2900	25.0
19	42	32	SESW	2900	14.9
19	42	32	SWSE	2900	7.2
20	41	1	NENE	100	35.0
20	41	1	SENE	200	35.5
20	41	1	NESW	400	5.6
20	41	1	SESW	600	6.1
20	41	1	SESW	400	3.7
20	41	1	NESE	200	3.3
20	41	1	NWSE	700	32.8
20	41	1	SWSE	400	17.1
20	41	1	SWSE	600	16.6
20	41	1	SESE	700	8.0
20	41	12	NENE	1100	22.5
20	41	12	NENE	1100	4.0

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31.1

33.6

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
20	41	12	NWNE	600	39.1
20	41	12	SWNE	1100	38.1
20	41	12	SENE	1100	8.0
20	41	12	SENE	1100	22.1
20	41	12	NENW	600	4.7
20	41	12	SENW	600	10.9
20	41	12	NESW	600	12.9
20	41	12	SWSW	1000	9.1
20	41	12	SESW	1000	38.8
20	41	12	NESE	1200	18.8
20	41	12	NESE	1200	1.3
20	41	12	NWSE	1100	20.9
20	41	12	SWSE	1000	27.7
20	41	12	SWSE	1000	1.2
20	41	12	SESE	1200	7.1
20	41	13	NENE	1200	1.2
20	41	13	NWNE	1200	14.8
20	41	13	SWNE	1300	22.0
20	41	13	NENW	1500	22.8
20	41	13	NWNW	1500	28.9
20	41	13	SWNW	1600	34.0
20	41	13	SENW	1600	20.6
20	41	13	NESW	1800	20.0
20	41	13	NWSW	1800	21.5
20	41	13	NWSW	1800	1.3
20	41	13	SWSW	1800	19.1
20	41	13	SESW	1800	10.9
20	41	13	SESW	1800	4.1
20	41	13	NWSE	1800	2.6
20	41	14	NENE	1500	0.3
20	41	14	SENE	1600	5.2
20	41	14	NESE	1800	11.2
20	41	14	SESE	1800	2.3
20	41	23	NENE	200	1.0
20	41	23	NENE	200	5.5
20	41	23	NENE	200	18.8
20	41	23	NWNE	200	1.9

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
20	41	23	SWNE	300	5.5
20	41	24	NWNW	200	3.9
20	42	5	NWNE	900	0.3
20	42	5	NWNE	800	4.3
20	42	5	NWNE	2000	0.7
20	42	5	NWNE	2901	7.4
20	42	5	NENW	1000	1.0
20	42	5	NENW	1900	0.6
20	42	5	NENW	1100	1.1
20	42	5	NENW	1900	4.7
20	42	5	NENW	900	5.2
20	42	5	NENW	2000	5.3
20	42	5	NENW	100-5BA	3.4
20	42	5	NENW	2000	6.0
20	42	5	NENW	1000	2.0
20	42	5	NENW	100-5BA	2.7
20	42	5	NENW	900	6.0
20	42	5	NWNW	500-5BC	0.2
20	42	5	NWNW	3200-5BC	0.1
20	42	5	NWNW	800-5BC	0.2
20	42	5	NWNW	300-5BA	0.2
20	42	5	NWNW	2600-5BC	0.3
20	42	5	NWNW	5200-5BC	0.6
20	42	5	NWNW	200-5BC	0.1
20	42	5	NWNW	301-5BA	0.3
20	42	5	NWNW	3000-5BC	0.6
20	42	5	NWNW	400-5BC	0.3
20	42	5	NWNW	900-5BC	0.2
20	42	5	NWNW	700-5BC	0.2
20	42	5	NWNW	3300-5BC	0.1
20	42	5	NWNW	3400-5BC	0.2
20	42	5	NWNW	400-5BA	0.2
20	42	5	NWNW	2800-5BC	0.3
20	42	5	NWNW	1703-5BC	0.1
20	42	5	NWNW	1400	3.0
20	42	5	NWNW	1400-5BC	0.1
20	42	5	NWNW	600-5BC	0.2

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Township South	Range East	Section	1/4 1/4	Tax Lot	Acres
20	42	5	NWNW	1100	3.6
20	42	5	NWNW	1500-5BC	0.2
20	42	5	NWNW	1301	12.4
20	42	5	NWNW	1000-5BA	0.2
20	42	5	NWNW	100	0.4
20	42	5	NWNW	2200-5BC	0.1
20	42	5	NWNW	1300	5.5
20	42	5	NWNW	2100	0.1
20	42	5	NWNW	3801-5BC	0.5
20	42	5	NWNW	2700-5BC	0.1
20	42	5	NWNW	401-5BA	0.3
20	42	5	NWNW	2500-5BC	0.1
20	42	5	SWNW	5300-5BC	0.6
20	42	5	SWNW	4700-5BC	0.3
20	42	5	SWNW	1800	9.7
20	42	5	SWNW	1800	4.1
20	42	5	SWNW	5100-5BC	0.1
20	42	5	SWNW	4100-5BC	0.2
20	42	5	SWNW	4800-5BC	0.1
20	42	5	SWNW	4200-5BC	0.3
20	42	5	SWNW	5000-5BC	0.6
20	42	5	SWNW	5400-5BC	0.4
20	42	5	SWNW	1900	0.6
20	42	5	SWNW	4000-5BC	0.5
20	42	5	SENW	1800	3.4
20	42	5	SENW	1900	4.7
20	42	5	SENW	1900	1.3
20	42	6	NENE	2700	42.7
20	42	6	NENE	2800	11.6
20	42	6	NWNE	2800	38.8
20	42	6	NWNE	2900	5.5
20	42	6	SWNE	2800	15.5
20	42	6	SWNE	2900	6.5
20	42	6	SWNE	2900	5.3
20	42	6	SENE	2800	19.3
20	42	6	SENE	2900	4.0
20	42	6	SENE	2700	3.0

17.5

7.4

54.3

14.3

27.3

26.3

Township South	Range East	Section	1/4 1/4	Tax Lot	Acres		
20	42	6	NENW	2900	48.1		
20	42	6	NWNW	2900	13.2	47.8	
20	42	6	NWNW	2900	34.6		
20	42	6	SWNW	3001	12.0	35.9	
20	42	6	SWNW	3001	5.0		
20	42	6	SWNW	3001	18.9		
20	42	6	SENW	3100	33.0		
20	42	6	NESW	2900	2.1	32	
20	42	6	NESW	3100	29.9		
20	42	6	NWSW	3001	23.2	34.1	
20	42	6	NWSW	3001	10.9		
20	42	6	SWSW	3001	28.0	34.5	
20	42	6	SWSW	3001	6.5		
20	42	6	SESW	2900	20.5	32	
20	42	6	SESW	3000	3.3		
20	42	6	SESW	3300	6.8		
20	42	6	SESW	3400	1.4	14.9	
20	42	6	NESE	2900	6.5		
20	42	6	NESE	3400	8.4	32	
20	42	6	NWSE	2900	28.8		
20	42	6	NWSE	2900	2.4		
20	42	6	NWSE	3400	0.8	35.9	
20	42	6	SWSE	3400	28.0		
20	42	6	SWSE	2900	5.9		
20	42	6	SESE	3400	27.8		
20	42	7	NENE	3400	4.2	25.2	
20	42	7	NWNE	3400	12.3		
20	42	7	NENW	3400	3.0		
20	42	7	NENW	3000	22.2		
20	42	7	NWNW	3000	34.7		
20	42	7	SWNW	3000	23.8		
20	42	7	SENW	3000	11.0		
20	42	7	NWSW	3000	18.0		
					<b>Total:</b>	<b>3708.8</b>	

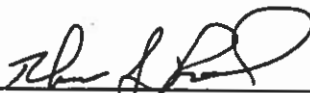
The amount of water used for supplemental irrigation, is limited to any deficiency in the available supply of any primary right existing for the same lands.

This certificate confirms an order of the director entered on November 4, 2002, and recorded in Special Order Volume 56, Page 2004, approving a petition by Vale Oregon Irrigation District Under ORS 541.329 for mapping water rights within a district. This certificate supersedes Certificate 15719 and confirms transfers 5160, 5159, 5371, 5300, 5301, 5314, 5358, 4817, 5155, 5357, 5435, and 5502.

The right to the use of the water for the above purposes is restricted to beneficial use on the lands or place of use described and is subject to all other conditions and limitations contained in said permit.

WITNESS the signature of the Water Resources Director, affixed

NOV 05 2002

  
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For Paul R. Cleary, Director