September 20, 2022

RE: Powder Valley Water Control District Infrastructure Modernization Project

Dear Stakeholders,

Powder Valley Water Control District (PVWCD or the District) is seeking federal funding through the Natural Resources Conservation Service's (NRCS's) Watershed Protection and Flood Prevention Program, Public Law 83-566 (PL 83-566). This funding would be invested to modernize irrigation canals, and other infrastructure throughout the District. As a part of this effort, we are starting public scoping regarding a potential project and its associated resources. The purpose of this letter is to:

- Transmit the Scoping Document for this project
- Advise you about the public comment period from September 20 to October 25, 2022
- Advise you on how to submit comments on the proposed project.

Federal investments through PL 83-566 need to comply with both the program's requirements as outlined in the Principles, Requirements, and Guidelines for Water and Land Related Resources Implementation Studies (PR&G) and the National Environmental Policy Act (NEPA) process. NRCS is the lead federal agency managing the NEPA process for the Powder Valley Water Control District Irrigation Modernization Project.

Public scoping is the first step in the NEPA process and is required under PL 83-566. Under this step, NRCS releases a Scoping Document to resource agencies, interested stakeholders, and the public to inform them of the need for NEPA and PR&G analysis, and to learn of any information or concerns relevant to the analysis. The Scoping Document identifies the proposed project and framework for analyzing resources that have the potential to be affected by the proposed project.

The District and NRCS will discuss the Scoping Document during a virtual or in-person public scoping meeting to be held on October 5, 2022. The purpose of this meeting is to answer questions about the NEPA process and collect comments on the proposed project and alternative actions that could achieve the project purpose and need. NRCS will use the comments gathered during public scoping to inform the next step in the NEPA and PL 83-566 program process, which is the development of a draft Watershed Plan-Environmental Assessment.

Comments related to the issues discussed during the meeting and/or review of the Scoping Document are due October 25, 2022. Comments and questions can be emailed to: powdervalley.wcd.comments@gmail.com or mailed to Farmers Conservation Alliance/ 102 State Street/ Hood River, OR 97031. The District thanks you for your interest in the infrastructure modernization project and looks forward to your participation.

Sincerely,

Doug Birdsall, District Manager

Scoping Document for the Powder Valley Water Control District Infrastructure Modernization Project

Prepared by Farmers Conservation Alliance on behalf of the Natural Resources Conservation Service

September 2022

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Abbreviations

°F	degrees Fahrenheit
BMP	Best Management Practice
CFR	Code of Federal Regulations
CTUIR	Confederated Tribes of the Umatilla Indian Reservation
EA	Environmental Assessment
FCA	Farmers Conservation Alliance
gpm	gallons per minute
MOU	Memorandum of understanding
NEE	National Economic Efficiency
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
ODEQ	Oregon Department of Environmental Quality
ODFW	Oregon Department of Fish and Wildlife
ODSL	Oregon Department of State Lands
PL 83-566	Watershed Protection and Flood Prevention Program, Public Law 83-566
Plan-EA	Watershed Plan-Environmental Assessment
POD	point-of-diversion

PR&G	Guidance for Conducting Analysis Under the Principles, Requirements, and Guidelines for Water and Land Related Resources Implementation Studies and Federal Water and Resource Investments
PVWCD or the District	Powder Valley Water Control District
Reclamation	Bureau of Reclamation
SHPO	State Historic Preservation Office
THPO	Tribal Historic Preservation Office
TMDLs	Total Maximum Daily Loads
USACE	United State Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service

1 Introduction

Powder Valley Water Control District (herein referred to as PVWCD or the District) seeks federal funding through the Natural Resources Conservation Service's (NRCS) Watershed Protection and Flood Prevention Program, Public Law 83-566 (PL 83-566), authorized by Congress in 1954, to implement an irrigation infrastructure modernization project within Union and Baker counties, Oregon.

PVWCD encompasses roughly 350 square miles and delivers water to approximately 15,915 acres of farmland for 102 patrons within the District's boundary through roughly 27.7 miles of open canal and 33.3 miles of piped conveyance, plus Pilcher Creek and Wolf Creek Reservoirs (Figure 1). The District operates two points of diversion, one at the Carnes Ditch, located on the North Fork of Anthony Creek, and one at the Coughanour Ditch, on the main stem of Anthony Creek (Figure 2). Neither the Carnes nor the Coughanour Diversions have a currently installed fish screen, and either may prevent upstream and downstream fish passage. The two reservoirs are operated as a single pool, where water is transferred from Pilcher Creek Reservoir to Wolf Creek Reservoir via the Coughanour Ditch.

Irrigation infrastructure associated with the Mansfield and Bulger ditch companies (herein referred to as the Ditch Companies) falls within the PVWCD boundary. Approximately 4,000 acres of PVWCD are serviced by the Mansfield Ditch. Although this infrastructure is not currently owned and operated by the District, there is a memorandum of understanding (MOU) with the Ditch Companies to include it as part of the potential proposed project. The Mansfield and Bulger ditch companies manage approximately 27 miles of primarily open ditch that serve 10,000 acres of land and 50 irrigators as a Subdistrict. The Ditch Companies operate two points of diversion from the North Powder River, which may prevent fish passage during the irrigation season, particularly later in the season when flows are diminished (Figure 2).

Within the Powder River Sub-basin, where the proposed project is located, the Oregon Department of Environmental Quality has identified water flow and quality challenges in Anthony Creek and the North Powder River. Both are included in Oregon's 303(d) list for not meeting state water quality standards for temperature (ODEQ 2013). Future increases in the frequency of droughts will likely exacerbate existing challenges, as lower summertime flows negatively impact water quality and water availability for municipalities, agriculture, livestock, and fisheries (Clifton et al. 2018).

The National Environmental Policy Act (NEPA) of 1969 and other applicable laws require a complete analysis of the environmental effects of the proposed project, as well as the consideration of additional alternatives. The Principles, Requirements, and Guidelines for Water and Land Related Resources Implementation Studies and Federal Water Resource Investments (PR&G) require additional analyses, such as an economic analysis and inclusion of effects to ecosystem services, in order to meet the requirements of the program. As the lead federal agency, NRCS will be meeting

requirements of both NEPA[1] and the PR&G[2] simultaneously throughout the Watershed Planning process. This scoping document and the associated scoping meeting meet NEPA and PR&G requirements for public participation. The scoping process is part of a systematic approach to obtain input from stakeholders about the project and to ensure that significant decision-making factors are addressed. The scoping process helps to ensure that the level of analysis for the proposed project is appropriate, and it helps to anticipate whether an Environmental Assessment (EA) or Environmental Impact Statement (EIS) with more extensive analysis for more significant impacts should be prepared. At this time, NRCS anticipates that a Draft Watershed Plan-EA (Plan-EA) would be prepared following scoping.

The Draft Plan-EA will describe the proposed project in detail; look at alternatives to meet the purpose and need for the project; analyze the potential effects of the project on cultural, social, and environmental resources in the project area and vicinity; and analyze the potential costs and benefits of the proposed project. NRCS will release the Draft Plan-EA for public and agency comment upon completion.

2 Consultation and Participation

2.1 Sponsors, Local Partners, Agencies, and Tribal Participation

The scoping process is a collaboration between the District, NRCS, partners, agencies, tribes, and other stakeholders. It is intended to provide transparency, ownership, and cooperation towards a solution that meets the purpose and need for action (Section 3). There will be additional opportunities for input during the Watershed Planning Process and the development of the Draft Plan-EA.

Project sponsors are the parties involved in scheduling, facilitating communication, project design and development, and document writing. The lead sponsor for the project is PVWCD. NRCS is the lead agency managing the NEPA.

[1]NEPA requirements include the Council on Environmental Quality regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500–1508); the U.S. Department of Agriculture's (USDA) NEPA regulations (7 CFR Part 650); NRCS Title 190 General Manual Part 410; and the NRCS National Environmental Compliance Handbook Title 190 Part 610 (May 2016).

[2] NRCS requirements and guidelines are provided in the 2015 NRCS National Watershed Program Manual (NRCS 2015) and the 2014 NRCS National Watershed Program Handbook (NRCS 2014). Additional requirements are found in the 2013 Principles and Requirements for Federal Investments in Water Resources (NRCS 2013) and Interagency Guidelines and Agency Specific Procedures established in Departmental Manual 9500-013. These documents comprise the Guidance for Conducting Analysis Under the Principles, Requirements, and Guidelines for Water and Land Related Resources Implementation Studies and Federal Water and Resource Investments (PR&G; NRCS 2017). The PR&G revised and replaced the 1983 Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies. The PR&G constitutes the comprehensive policy and guidance for federal investments in water resources.

PVWCD has entered into a memorandum of understanding (MOU) with the Mansfield and Bulger Ditch Companies, in order to incorporate the Mansfield and Bulger Ditches into the project scope. To meet program requirements, the Mansfield and Bulger Ditch Companies will also be incorporated into PVWCD as a Subdistrict.

2.2 Permits and Compliance

The project sponsor seeks federal funding through PL 83-566. Therefore, the project will require an environmental assessment to comply with NEPA. Through the NEPA process, NRCS will identify how the project would comply with all relevant state and federal permitting and regulations, including Section 106 of the National Historic Preservation Act (managed by the State Historic and Preservation Office [SHPO]), Section 7 of the Endangered Species Act (managed by the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service [USFWS]), and Sections 404 and 401 of the Clean Water Act (managed in Oregon by Oregon Department of State Lands [ODSL], Oregon Department of Environmental Quality [ODEQ], and the U.S. Army Corps of Engineers [USACE]. Permits that are not received during the NEPA process would be received prior to beginning construction of the proposed project.

2.3 Mitigation

Mitigation for environmental, historical, or other social effects will be considered and described in the Draft Plan-EA when potential effects to these resources have been identified; and consultation with appropriate agencies will be conducted to agree on any mitigation plans.

3 Purpose and Need for Action

The purpose of the proposed project is improving Agricultural Water Management[3,4] through improved water delivery and supply reliability to District water users and water conservation. The project is needed to address water loss, water delivery reliability, and operation inefficiencies in District and Ditch Company infrastructure. Current operation inefficiencies include maintaining open canals, particularly those in remote locations, infrastructure breaches, and excessive wear on District and Ditch Company-owned infrastructure due to sedimentation.

The District and Ditch Companies have previously pursued modernization opportunities, including piping open canals and installing flow measurement devices; however, the remaining aging infrastructure continues to deteriorate, and open canals continue to lose water due to seepage and evaporation. As a result, the canals must carry more water than is required for irrigation so that water reaches all patrons throughout the areas served by the District and Ditch Companies.

[3] A description of Authorized Purposes can be found in 390-NWPM, Part 500, Subpart A, Section 500.3B.

[4] To meet NRCS requirements for a federal investment in a water resources project, the project must meet the Federal Objective set forth in the Water Resources Development Act of 2007 and be an authorized project purpose under Sections 3 and 4 of Public Law 83-566.

The District's and Ditch Companies' open canals do not transport and deliver water as precisely, accurately, or efficiently as a modernized system would. Seepage and fluctuations in water demand make it challenging for the District and Ditch Companies to manage and deliver the amount of water that patrons need when they need it.

Another complicating factor for PVWCD and the Mansfield and Bulger ditches is the sediment load in the irrigation water diverted from Anthony Creek and the North Powder River. Sediment in irrigation water reduces the efficiency of irrigation systems on farms and District-owned equipment by creating excessive wear on pumps, filter systems, valves, and delivery nozzles. High sediment loads also result in poor irrigation water quality and present a maintenance challenge to the District, Ditch Companies, and their patrons.

PVWCD and the Mansfield and Bulger ditches would like to implement infrastructure modernization projects in support of both District operations and watershed sustainability goals. The following opportunities could be realized through the implementation of the project:

- Improve irrigation water management and delivery to District and Ditch Company patrons by improving conveyance efficiencies
- Improve water supply reliability for District and Ditch Company patrons
- Improve streamflow and enhance water quality and aquatic habitat in Anthony Creek and North Powder River
- Reduce the operations and maintenance involved in delivering irrigation water to District and Ditch Company patrons
- Minimize the potential for injury, loss of life, and property damage associated with open canals

4 Scope of the Environmental Assessment

NRCS and PVWCD are conducting public scoping as a part of the project's NEPA and PR&G requirements to comply with the requirements of PL-566. Public scoping seeks to identify issues of economic, environmental, cultural, and social importance that have the potential to be affected by the proposed project.

Following the scoping process, a Plan-EA would be drafted to determine if the proposed project meets NEPA and PR&G requirements.

5 Affected Environment - Existing Conditions

5.1 Project Location and Project Area

The project is located in Union and Baker counties. The project area is the area where the PVWCD Infrastructure Modernization Project would occur. It consists of District and Ditch Company infrastructure that would be modernized (i.e., upgraded or improved), areas where new

infrastructure would be built, and associated rights-of-way and/or easements where construction would take place and/or be staged (Figure 1 and 2).

5.1.1 Current Infrastructure and Water Rights

PVWCD delivers water to approximately 15,915 acres of farmland within the District's boundary through roughly 27.7 miles of open canal and 33.3 miles of piped conveyance, plus two storage reservoirs (Figure 1). Mansfield and Bulger ditch companies deliver water to approximately 10,000 acres of farmland through roughly 23.5 miles of open canal and 3.5 miles of piped conveyance.

Powder Valley Water Control District currently holds 12 water rights certificates and permit applications to divert water from the North Powder River, Pilcher Creek, Wolf Creek, Anthony Creek (including the North and South Forks), and Anthony Fork[5]. Beneficial uses for live flows include irrigation, domestic supply, and livestock. Those diversions irrigate 11,045.8 acres of land using primary water rights. The District has 11,100 acre-feet of total storage in Wolf Creek Reservoir (10,350 of which are designated for irrigation purposes and the remainder are reserved for minimum pool storage), and 5,910 acre-feet in Pilcher Creek Reservoir for irrigation, water storage, and recreation.

The District is allowed 1/40 of 1 cfs for each acre irrigated, or 11.2 gpm per acre. However, existing District pipelines are designed to deliver a rate between 6.5 and 8 gpm per acre to patrons. Instream water rights within the watershed exist in Anthony Fork, North Fork Anthony Creek, and the North Powder River. These instream water rights vary by month; they are generally highest in the spring and lowest in the fall and winter.

Water rights associated with the Mansfield and Bulger ditch companies are patron owned. The Mansfield and Bulger ditch companies water rights are for diversions from the North Powder River.

5.1.2 Climate and Topography

PVWCD is located within the Powder Basin at an elevation of approximately 3,500 feet above mean sea level. The climate is dry, characterized by light precipitation, abundant sunshine, low relative humidity, rapid evaporation, and wide fluctuations in temperature and precipitation (ODEQ 2013). Precipitation is influenced by the basin's variable topography. Valleys (including the majority of the District) receive an average annual precipitation of 10.6 inches, while the nearby Elkhorn and Wallowa Mountains receive an annual average of 35 inches (USBR 2008). The majority of this precipitation falls as snow during the winter. The mean annual temperature in the basin is 45.5 °F, with extremes of -28 °F (February) and 104 °F (August) recorded near Baker City (ODEQ 2013).

[5] Anthony Fork refers to the stretch of Anthony Creek above the confluence with North Fork Anthony Creek

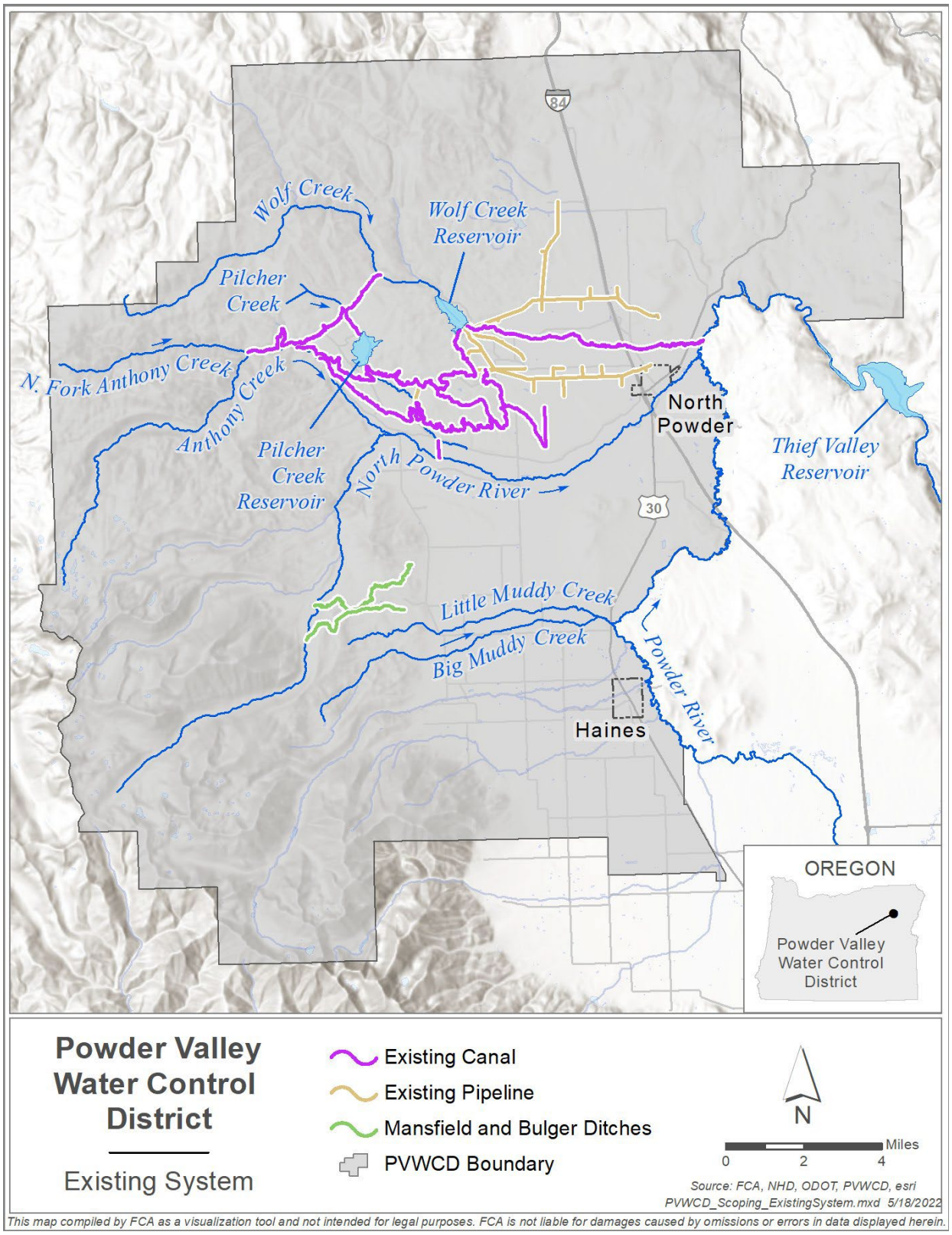

Figure 1. Powder Valley Water Control District current infrastructure.

5.2 Resource Issues, Project-Related Effects, and Proposed Measures

Table 1 provides an overview of the resource issues identified to date that would potentially be affected by the project. It also provides an overview of PVWCD's proposed measures to avoid adverse environmental effects during the construction and operation of its proposed infrastructure modernization project.

Table 1. Overview of Currently Identified Resource Issues, Proposed Analyses, and Mitigation Measures to be Included in the Draft Watershed Plan-Environmental Assessment.

Resource	Resource Issues to be Analyzed	Proposed Analysis and Mitigation Measures
Geology and Soils	Effects from erosion of exposed and disturbed soils (both surface and backfill) on soil resources and proximate surface waters, and effects to Prime and Unique farmlands as a result of construction	Review NRCS and other available soil survey and geology maps. Develop and implement an Erosion and Sediment Control Plan. Incorporate best management practices (BMP) during and post construction.
Cultural Resources	Effects of project construction and operation on historic resources that are, or may be eligible, for inclusion in the National Register of Historic Places	Survey the project area and consult with SHPO and the Tribal Historic Preservation Office (THPO) prior to project construction. Develop and implement a Historic Properties Management Plan to provide a formal framework for the future treatment of all known historic properties within the area of potential effects that are eligible to be listed on the National Register of Historic Places.
	Effects of project construction and operation on archeological resources	Analyze previous archeological reports and potential effects and consult with the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), SHPO, and THPO prior to project construction. Develop and implement an Unanticipated Discoveries Plan.
Vegetation	Potential for noxious weed distribution during and post construction	Incorporate noxious weed suppression BMPs during construction.
	Effects of project construction and operation on sensitive and/or rare plant species	Review state and federal listings specific to the project area. Determine measures based on species presence. If necessary, consult with USFWS and U.S. Forest Service during the planning phase.

Resource	Resource Issues to be Analyzed	Proposed Analysis and Mitigation Measures
Fish	Effects of project construction and operation on general fish species	The sponsors understand that fish screens may be a requirement in certain areas of the project (e.g. related to the Carnes and Coughanour diversions) in order to prevent fish and aquatic species from entering PVWCD's delivery system. Consultation with USFWS, ODFW, and CTUIR would occur during the planning phase.
	Effects of project construction and operation on Threatened and Endangered Species	Review state and federal listings specific to the project area and region. Determine measures based on species presence. If necessary, consult with USFWS during planning.
Wildlife	Effects of project construction and operation on general wildlife	Review available literature and communicate with USFWS and ODFW. Incorporate BMPs during construction.
	Effects of project construction and operation on Threatened and Endangered Species	Review state and federal listings specific to the project area. Determine measures based on species presence. If necessary, consult with USFWS and ODFW during the planning phase.
	Effects of project construction and operation on birds protected under the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act	Review state and federal listings specific to the project area and communicate with USFWS. If there is the potential to effect Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act species through vegetation clearing or construction activities, follow seasonal restrictions and incorporate BMPs during construction.
Surface Water	Effects of increased turbidity during project construction due to exposed and disturbed soils and effects to stream flows as a result of diversion consolidation.	Develop and implement an Erosion and Sediment Control Plan. Incorporate BMPs during construction.
Groundwater	Effects of project construction and operation on groundwater near the project area	Review literature and consult with local experts. No measures proposed at this time.
Wetlands, Riparian Areas, and Floodplains	Effects of project construction and operation on wetlands near the project area	Review the National Wetlands Inventory Database and available literature. If wetlands are identified, consult with the USACE and ODSL. No measures proposed at this time.

Resource	Resource Issues to be Analyzed	Proposed Analysis and Mitigation Measures
	Effects of project construction and operation on floodplains in the project area	Present the proposed project to the Union and Baker County Flood Administrators to determine effects; measures would be determined.
	Effects of project construction and operation on riparian areas in the project area	Review available literature and consult with local experts. If necessary, consult with USFWS and ODFW during the planning phase. No measures proposed at this time.
Land Use and Recreation	Effects of project construction, operation, and maintenance on agricultural, residential, and other land uses near the project	Review spatial and zoning data and available literature. No measures proposed at this time.
	Effects of project construction, operation, and maintenance, including dust and noise, on recreational resources near the project	Review spatial data to determine presence of trails and parks with the potential to be affected. No measures proposed at this time.
Environmental Justice	Effects of project construction and operation on minority, low income, tribal, or indigenous community.	Review socioeconomic data and spatial data. No measures proposed at this time.
Socioeconomic Resources	Effects of project construction, operation, and maintenance on the local economy in Baker and Union counties.	Prepare a National Economic Efficiency (NEE) and a Regional Impact Analysis as required by NRCS to determine the effect of the alternatives on the region's economy.
	Effects of project construction and completion on property values in the project area.	Review available literature. No measures proposed at this time.
Ecosystem Services[1]	Potential effects on provisional, cultural, and regulating ecosystem services	Review available literature. No measures proposed at this time.
Economic Benefits and Costs[1]	Analyze the economic costs and benefits of the project	Prepare National Economic Efficiency Analysis.

Notes:
1. These resources are not required under NEPA, they are required to be analyzed under the PR&Gs.

6 Alternatives

6.1 Formulation Process

To determine the most effective alternatives to meet the project's purpose and need, NRCS and PVWCD are considering the needs of the water users, goals for conservation and restoration, resources, funding available for both the District and the water users, and the status of the District's previous improvements.

6.2 Description of Alternatives Considered

During the scoping process, the following alternatives will be analyzed to determine if they should be studied in detail or eliminated from further study. They will be evaluated based on the criteria in USDA (2017) and NRCS (2015). Pursuant to this guidance, alternatives that become "unreasonable due to cost, logistics, existing technology, social, or environmental reasons," do not achieve the Federal Objective and Guiding Principles, or are unable to address the purpose and need for action may be removed from consideration.

6.2.1 No Action Alternative (Future without Project)

Under the No Action Alternative, the District and Ditch Companies would continue to operate and maintain the existing delivery system in its current condition. This alternative assumes that modernization of the District's and Ditch Companies' infrastructure would not be reasonably certain to occur, as funding at the large scale necessary to modernize their infrastructure is not anticipated from other sources. The No Action Alternative would be a continuation of the District's and Ditch Companies' standard operations and maintenance.

6.2.2 Infrastructure Modernization Alternatives

The District and Ditch Companies are working with engineers to design infrastructure that is technically feasible and addresses the project's purpose and need. Potential infrastructure improvement actions being considered under these modernization alternatives include: consolidating existing ditches to pipelines; converting existing open canals to buried pipelines; and upgrading existing pipelines.

Whole District Alternative

Under the whole district alternative, all canals within the District, plus the Mansfield and Bulger ditches, would be modernized, either through piping or canal lining. Under this alternative, both consolidation and realignment of infrastructure would be considered (see Section 6.2.2.2 for additional description of potential areas where ditches would be consolidated).

Priority Area Alternative

Under the priority area alternative, only select areas of irrigation infrastructure would be identified for modernization, either through piping or canal lining. Priority areas may be selected according to factors such as water loss, cost, or number of patrons affected. Under this alternative, both consolidation and realignment of infrastructure would be considered (Figure 2). Locations of priority areas being considered include (but are not limited to):

- Carnes and Coughanour Ditches: The Carnes Ditch is used primarily to fill Pilcher Creek Reservoir and secondarily to fill Wolf Creek Reservoir. The Upper Coughanour Ditch serves the Lower Coughanour Ditch, which fills Wolf Creek Reservoir and delivers water to laterals and pipelines. These areas experience high water loss and operation and maintenance difficulties due to their remote location.

  Under the Priority Alternative, the canals would either remain in their existing alignment and be piped or lined, or they would be consolidated. If the ditches remained unconsolidated approximately 4.2 miles of the Carnes and 3.4 miles of the Coughanour Ditches would be lined or piped. Under consolidation, the Upper Coughanour Ditch above the Pilcher Creek Reservoir Outlet would be decommissioned[6]. Water that was previously diverted from the Coughanour Diversion would be diverted at the Carnes Diversion. The new maximum diversion at the Carnes Diversion would be 120 cfs. The Carnes Diversion would be modified to accommodate additional flow. Coordination with the appropriate agencies would occur to determine how to address effects to water rights and fish passage. Figures 3 and 4 show modernization of the Carnes and Coughanour Ditches in their existing alignments and under consolidation.

- Lower Coughanour Ditch (Figure 4): The Coughanour Ditch below Pilcher Creek Reservoir, or Lower Coughanour Ditch, fills Wolf Creek Reservoir, delivers to laterals and pipelines, and serves turnouts to irrigators along the ditch. It currently experiences high water loss due to seepage and evaporation. Under the Priority Alternative, approximately 6.6 miles of the Lower Coughanour Ditch would be lined or piped between Pilcher Creek Reservoir and Wolf Creek Reservoir. Coordination with the appropriate agency would occur to determine how to address effects to fish passage.

- C-1: The Ellis, Lone Pine, Redger, and Maharry Blevins ditches deliver both stored and live flow to laterals and turnouts for irrigators. The ditches all experience water loss and operations and maintenance challenges due to sedimentation. Under the Priority Alternative, the C-1 would install approximately 17,200 ft of pipeline to be served by the Upper Coughanour Ditch or Carnes Ditch.[7] The C-1 would follow new and existing alignments from the Lower Coughanour Ditch to the Lower Lone Pine Ditch. The C-1 would allow for the entirety of the Maharry Blevins and Ellis ditches, as well as portions of the Redger and Lone Pine ditches, to be decommissioned. The point-of-diversion (POD) for live flow water rights associated with the Lone Pine Diversion would be moved upstream to the Coughanour or Carnes Diversion.[8] The C-1 Project is shown in Figure 5.

[6] There is one turnout on the Upper Coughanour Ditch between the Coughanour Diversion and Pilcher Creek Reservoir that may require a point-of-diversion change. Coordination with ODFW and OWRD would occur as appropriate.

[7] Dependent upon whether the Carnes and Upper Coughanour ditches are consolidated.

[8] The existing Coughanour Diversion and the modified consolidated Carnes Diversion would both need no additional modifications to accommodate flows previously from the Lone Pine Diversion.

- Mansfield and Bulger Ditches (Figure 6): The Mansfield and Bulger ditches convey irrigation water from the North Powder River to laterals and turnouts. These areas experience high water loss and operations and maintenance challenges due to sedimentation. Under the Priority Alternative, the canals would either remain in their existing alignment and be piped or lined, or they would be consolidated. Coordination with the appropriate agencies would occur to determine how to address effects to water rights and fish passage. Figure 6 shows modernization of the Mansfield and Bulger Ditches in their existing alignments and under consolidation.

  If the ditches remained in their existing alignments approximately 11.7 miles of the Mansfield and 5.34 miles of the Bulger ditches would be piped or lined. Under consolidation, portions of the Mansfield Ditch would be decommissioned, including the Mansfield Diversion. Water that was previously diverted at the Mansfield diversion would be diverted further downstream at the Bulger Diversion, and the Bulger Diversion would be modified to accommodate additional flow. Approximately 2.2 miles of the Mansfield and 3.0 miles of the Bulger would then be piped or lined.

- Shingle Gulch (Figure 2): Shingle Gulch is used to convey water from the Carnes Ditch to Wolf Creek Reservoir when Pilcher Creek Reservoir is full. It currently experiences water loss and operations and maintenance challenges due to erosion incising the channel and breaching of the canal wall. Under the Priority Alternative, Shingle Gulch would be piped or lined in its existing alignment.

- Lower end of W-1 Pipeline (Figure 2): The W-1 Pipeline delivers irrigation water directly to patrons in the northern part of the District. The current pipeline is constructed of mortar-lined steel pipe. However, the existing pipeline is undersized and experiences high water velocities. Additionally, the steel pipe is corroding, resulting in water loss. Under the Priority Alternative, the lower 1.16 miles of the W-1 Pipeline would be upgraded in its existing alignment.

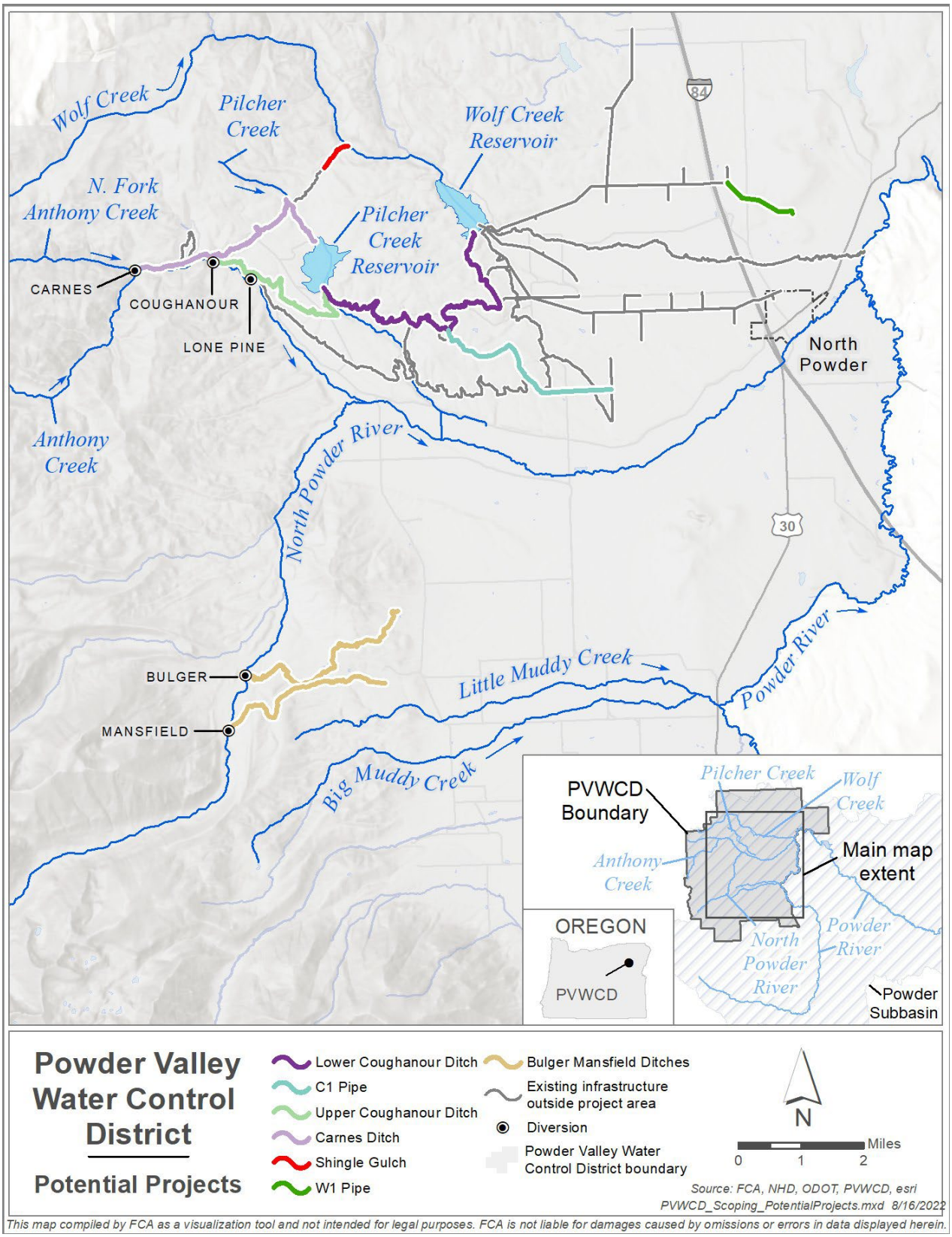

Figure 2. Potential Projects.

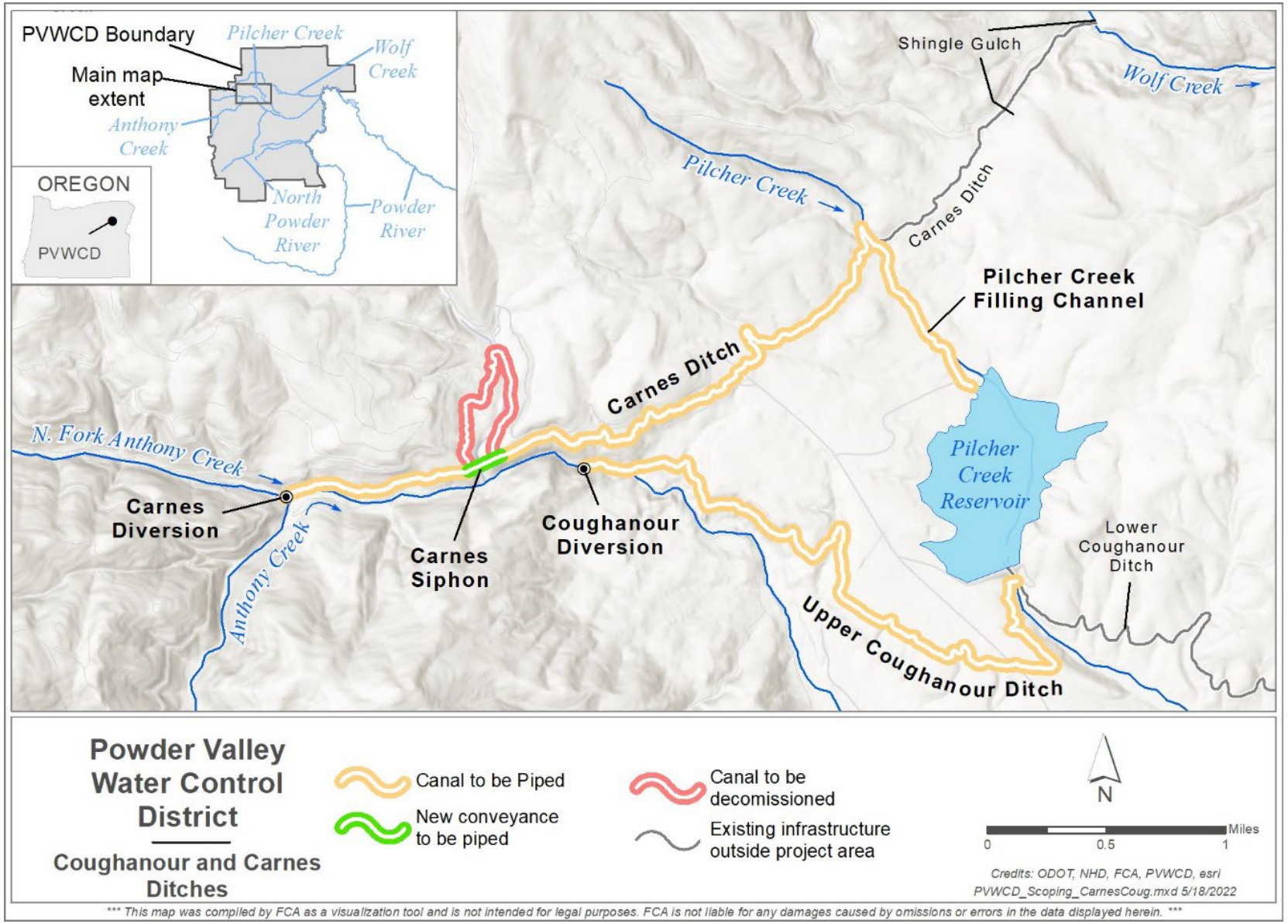

Figure 3. Carnes and Coughanour ditch modernization in existing alignment.

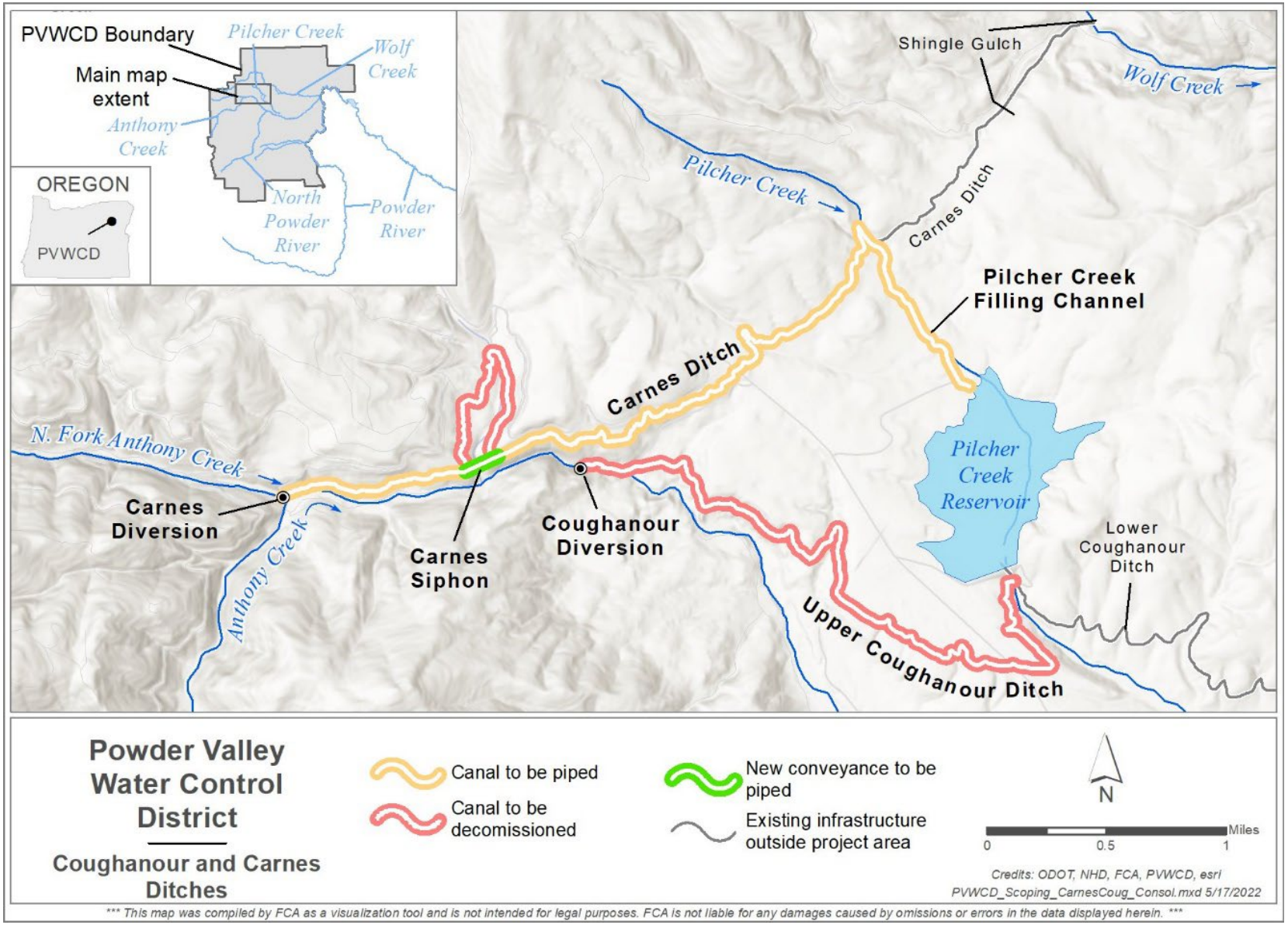

Figure 4. Carnes and Coughanour ditch consolidation.

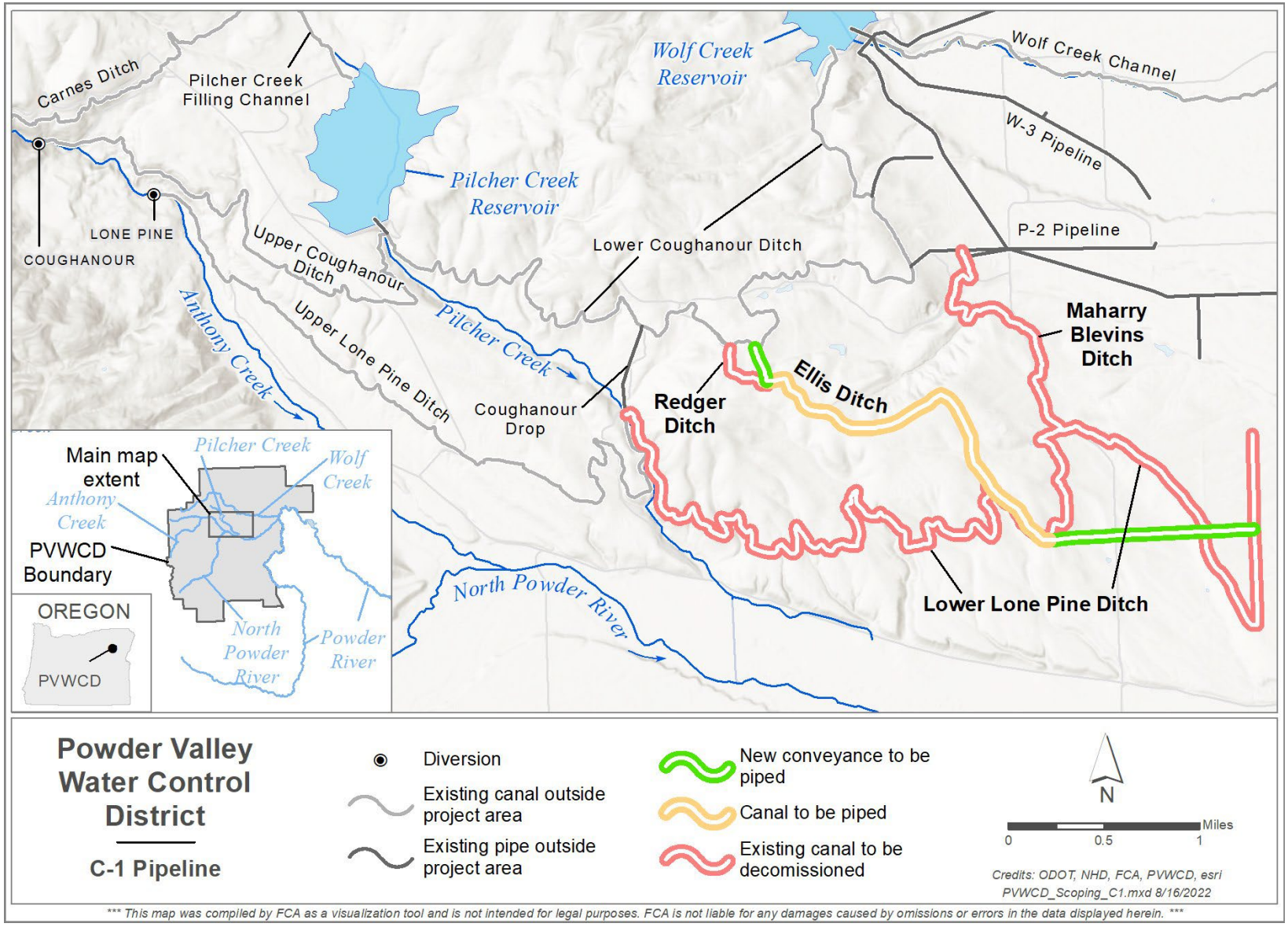

Figure 5. C-1 project.

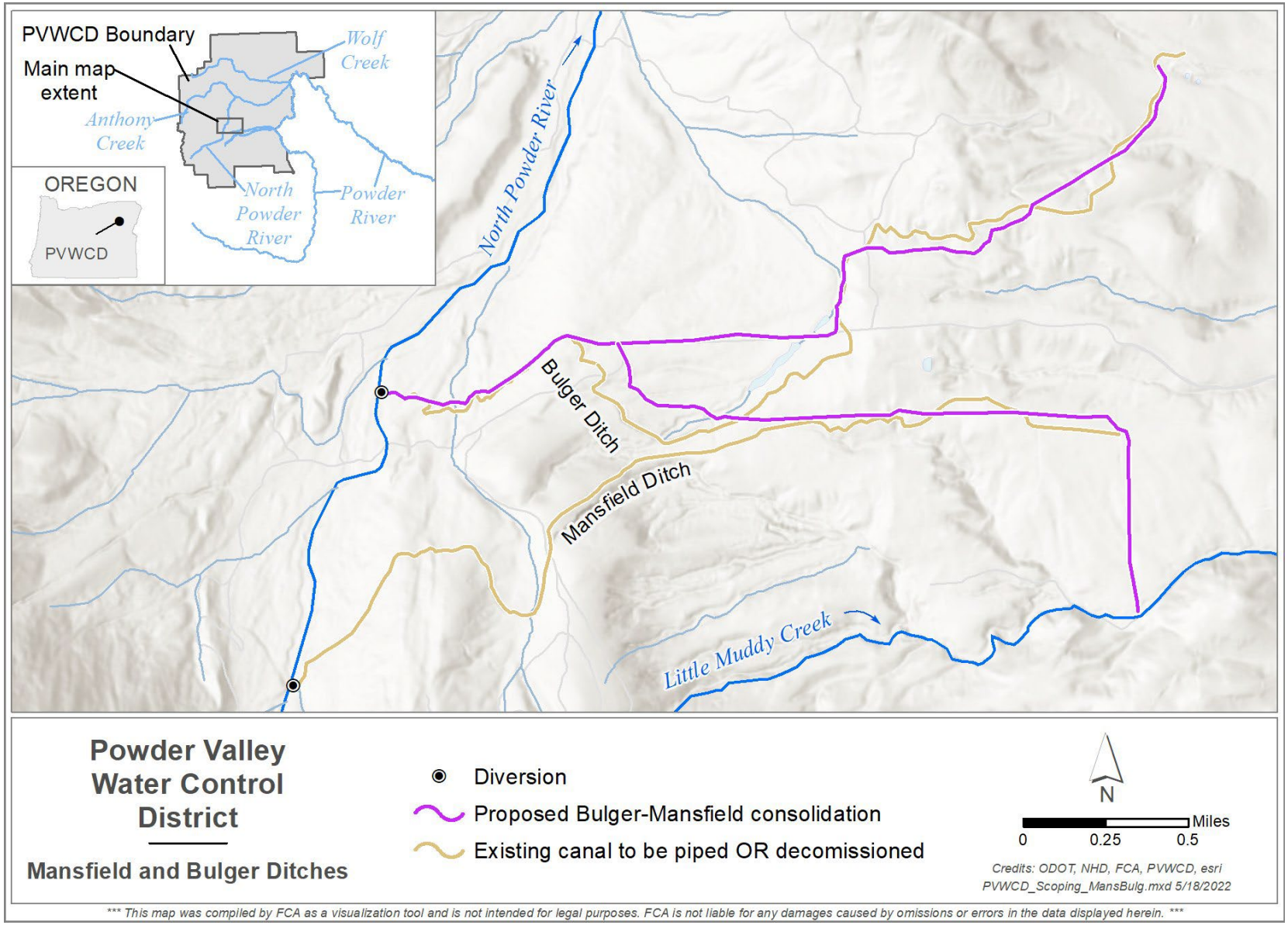

Figure 6. Mansfield and Bulger ditch modernization.

A National Economic Efficiency (NEE) analysis will be completed for the project during the Plan-EA process. The NEE is an economic analysis that evaluates costs and benefits associated with the proposed project and is required to be included in the Plan-EA under the PR&G.

7 References

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