

ARNOLD



IRRIGATION DISTRICT

Bob Schuur, Board Chair

Rob Rastovich, Board Member

Kate Fitzpatrick, Deschutes River Conservancy Executive Director

Steve Johnson, District Manager

June 7, 2023



**Deschutes Basin
Board of Control**



Connecting Central Oregon's Water, Land & Environment





Modernization PROJECT BENEFITS

ArnoldIrrigationDistrict.com

Increases public safety



Maintains strong agriculture economy



Conserves water



Improves drought resistance



Reduces operating and maintenance



Water saved will help meet the needs of farmers in Jefferson County



Helps meet Habitat Conservation Plan target for critical winter streamflows in the Upper Deschutes River.



Piping would have extended **water flow** into September during the 2020-2022 seasons

If AID's main canal had been piped, water would have been delivered uninterrupted into September.

DISTRICT FACTS
4,384 acres irrigated
646 irrigators served
39 miles of open canals and pipelines to convey irrigation water

PROJECTS
Install 11.9 miles of pipe for AID's main canal
Upgrade 88 deliveries



PIPING STATS

	water seepage loss	water conserved annually	gallons saved annually	cfs needed to deliver 5.5 gallons per minute (gpm)*
BEFORE PIPING	34%	0 cfs	0	100 cfs
AFTER PIPING	<1.5%	32.5 cfs	3.4 billion	67.5 cfs

*Estimated cfs needed to deliver 5.5 gpm to all patrons June-August

AID's main canal experiences a **34%** average water loss due to seepage

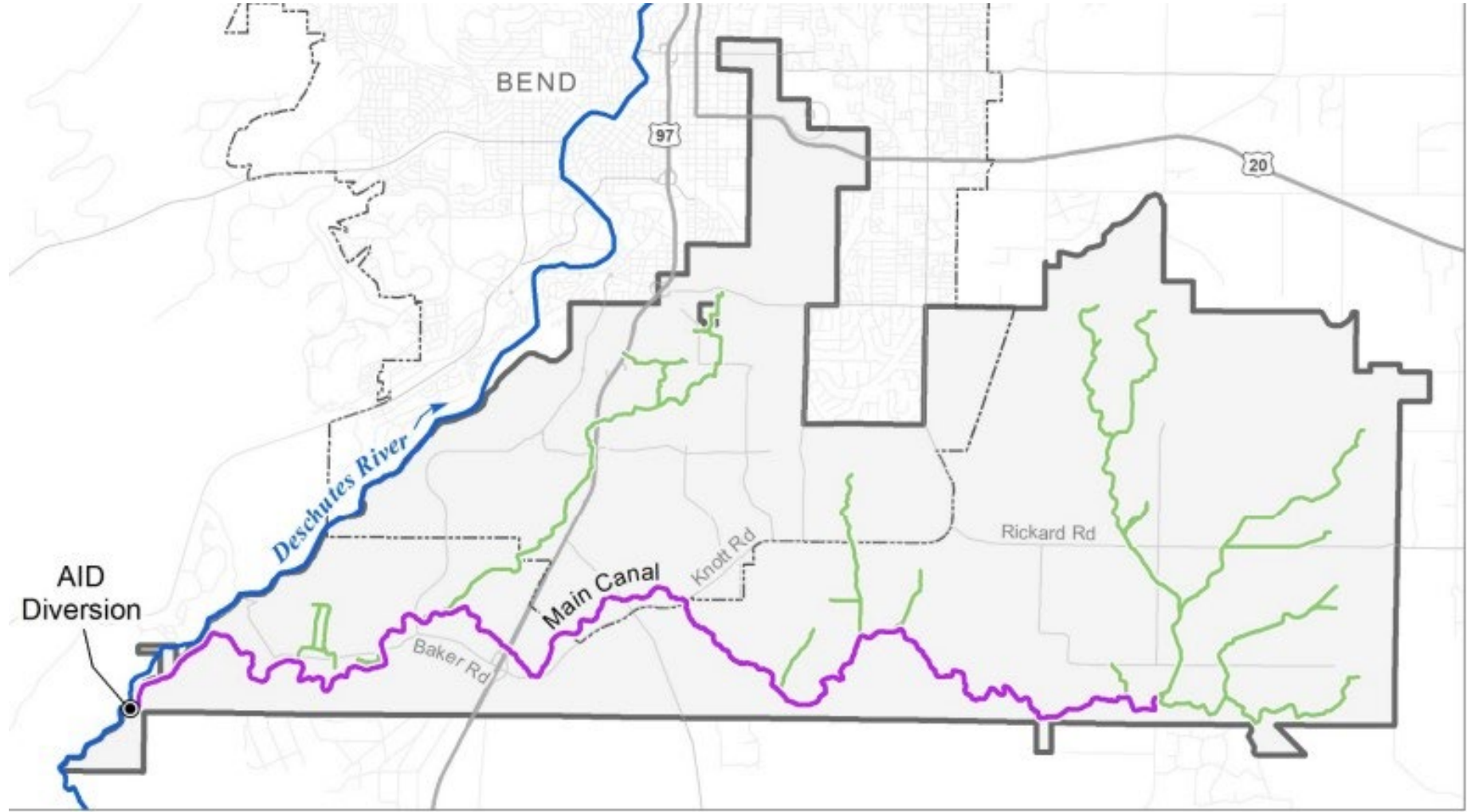
Piping AID's main canal will improve water delivery reliability and irrigators can expect to receive the amount of water they need at the right time.

ARNOLD
IRRIGATION DISTRICT



Modernization PROJECT BENEFITS

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Arnold Irrigation District

- Project Area
- Excluded from Project Area
- River
- Street
- Highway
- Arnold Irrigation District
- City Boundary



Credits: Deschutes County GIS, ODOT, NHD, FCA
AID EA Project Area.mxd 6/7/2021



Modernization PROJECT BENEFITS

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PLANNING FOR THE FUTURE

COMMUNITY



646 Landowners
Benefited

11.9 Canal miles converted
to pressurized pipe



PROJECT COSTS

\$35M

Implemented
construction funding



WATER RESOURCES

32.5 cfs

(Cubic ft/second)
water saved

What We Do



Ensure a predictable and reliable water supply to the Deschutes Basin.



Convey
water to
7,653
patrons



Irrigate over 150,000
acres throughout the
Deschutes Basin



Contribute
annually
to fish and
wildlife habitat
conservation



Partner with
stakeholders



Create
jobs for
economic
growth

Habitat Conservation Plan



CONSERVATION MEASURES



30 years of protection

for steelhead trout, bulltrout, sockeye salmon, and Oregon spotted frogs.

Maintain winter flows in the Crooked River downstream of Bowman Dam of at least

50cfs

In 30 years, the HCP will improve winter flows from **100cfs to 400-500cfs** and summer flows down to **1200cfs from 1800cfs.**

Increase summer flows and provide habitat restoration funds

for Whychus, Ochoco, and McKay Creeks.



480 miles

of rivers and creeks affected by eight irrigation districts and the City of Prineville will be addressed.

Year-round habitat for Oregon spotted frogs

in Crane Prairie Reservoir, upper Deschutes River, Crescent Creek, and the Little Deschutes River.



OUR WORK

\$174,000

contributed annually by the City of Prineville and irrigation districts to fish and wildlife habitat conservation. Over **\$5.2 million** in restoration funds collected over the next 30 years.

12 years of collaboration

between irrigators, federal and state agencies, the Confederated Tribes of the Warm Springs Reservation, multiple non-governmental organizations, counties, cities, and the general public in the Deschutes Basin of Central Oregon.



9,000+

residents are served by the City of Prineville. Providing essential services, including public safety, municipal water supply, and sewage treatment.

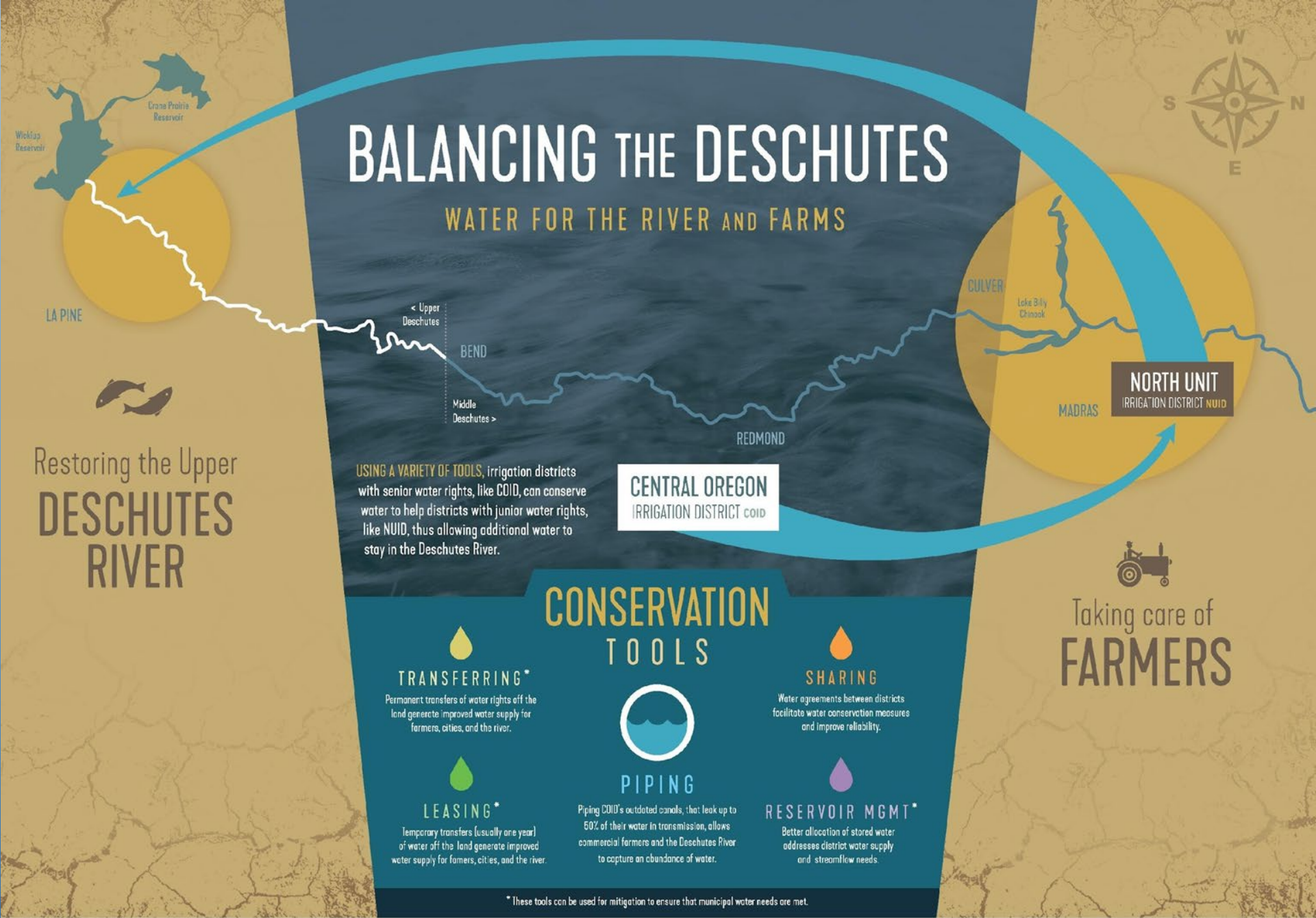
151,000 irrigated acres

and over 17,600 patrons are collectively served by the irrigation districts.



BALANCING THE DESCHUTES

WATER FOR THE RIVER AND FARMS



Restoring the Upper
**DESCHUTES
RIVER**

USING A VARIETY OF TOOLS, irrigation districts with senior water rights, like COID, can conserve water to help districts with junior water rights, like NUID, thus allowing additional water to stay in the Deschutes River.

**CENTRAL OREGON
IRRIGATION DISTRICT COID**

**NORTH UNIT
IRRIGATION DISTRICT NUID**

CONSERVATION TOOLS

TRANSFERRING*
Permanent transfers of water rights off the land generate improved water supply for farmers, cities, and the river.

LEASING*
Temporary transfers (usually one year) of water off the land generate improved water supply for farmers, cities, and the river.

PIPING
Piping COID's outdated canals, that leak up to 60% of their water in transmission, allows commercial farmers and the Deschutes River to capture an abundance of water.

SHARING
Water agreements between districts facilitate water conservation measures and improve reliability.

RESERVOIR MGMT*
Better allocation of stored water addresses district water supply and streamflow needs.

Taking care of
FARMERS

* These tools can be used for mitigation to ensure that municipal water needs are met.



Creating a Positive Impact

Modernization projects throughout the irrigation districts in the Deschutes Basin will create multiple benefits for our local communities.



Conserve 165.7 million gallons of water annually.



Support 4,946 jobs through these projects.



\$219.9 million in economic development for our rural communities.



Generate more than 10-15 megawatts of new hydropower using irrigation water.



Key Milestones

Central Oregon irrigation districts have successfully implemented over **\$53 million** in projects, conserving over **49 cfs/12,000 AF** annually, and ensuring more water for farmers, food, and fish.



Completed Conservation Projects

COID
Phase 1 delivered **29 cfs**
conserved water to NUID

TID
18.8 cfs



Anticipated Conservation Projects

COID **127 cfs**
AID **40.5 cfs**
NUID **31.8 cfs**
OID **17.2 cfs**
LPID **8.8 cfs**
SID **6.1 cfs**
TID **1.4 cfs**

ALIGNING THE PURPOSE & NEED WITH FEDERAL POLICY

- ✓ National Environmental Policy Act (NEPA)
- ✓ PL-566 Authorized Project Purpose



WATERSHED PLANNING PROCESS

2018

Step 1:

Project Proposal Initiation

April 17, 2019

Step 2:

Scoping Period (120 attendees)

Scoping Meeting

June 8, 2021

Step 3:

Release DRAFT Watershed Plan- Environmental Assessment

June 2021 – July 2021

Step 4:

Public Comment Period – (451 comments received)

Public Meeting

August 9, 2022

Step 5:

FINAL Watershed Plan- Environmental Assessment
Finding of No Significant Impact

December 9, 2022

Step 6:

FINAL Authorization

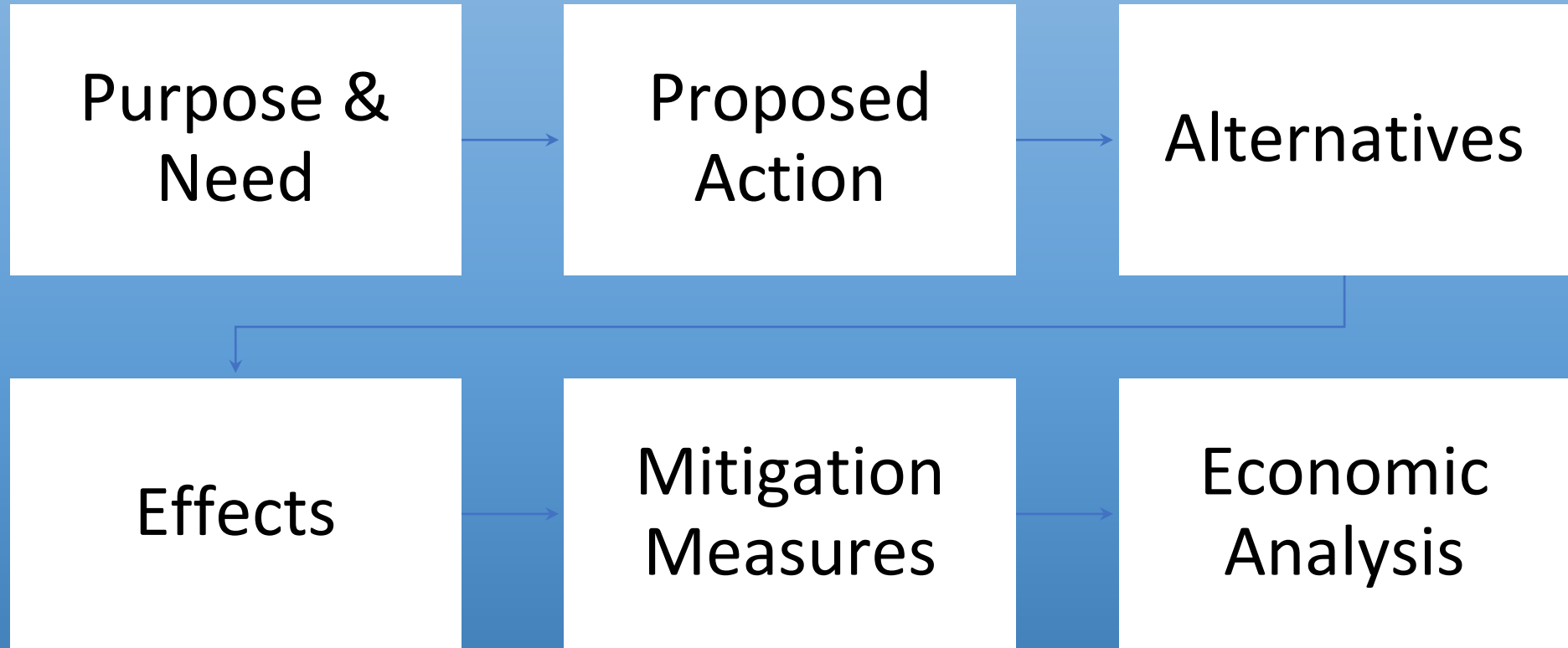
October 2023 – April 2026

Step 7:

Project Implementation & Construction



WHAT A PLAN-EA INCLUDES



WHAT KINDS OF IMPACTS ARE CONSIDERED?

Direct, Indirect, Temporary, Long-term and Cumulative Impacts

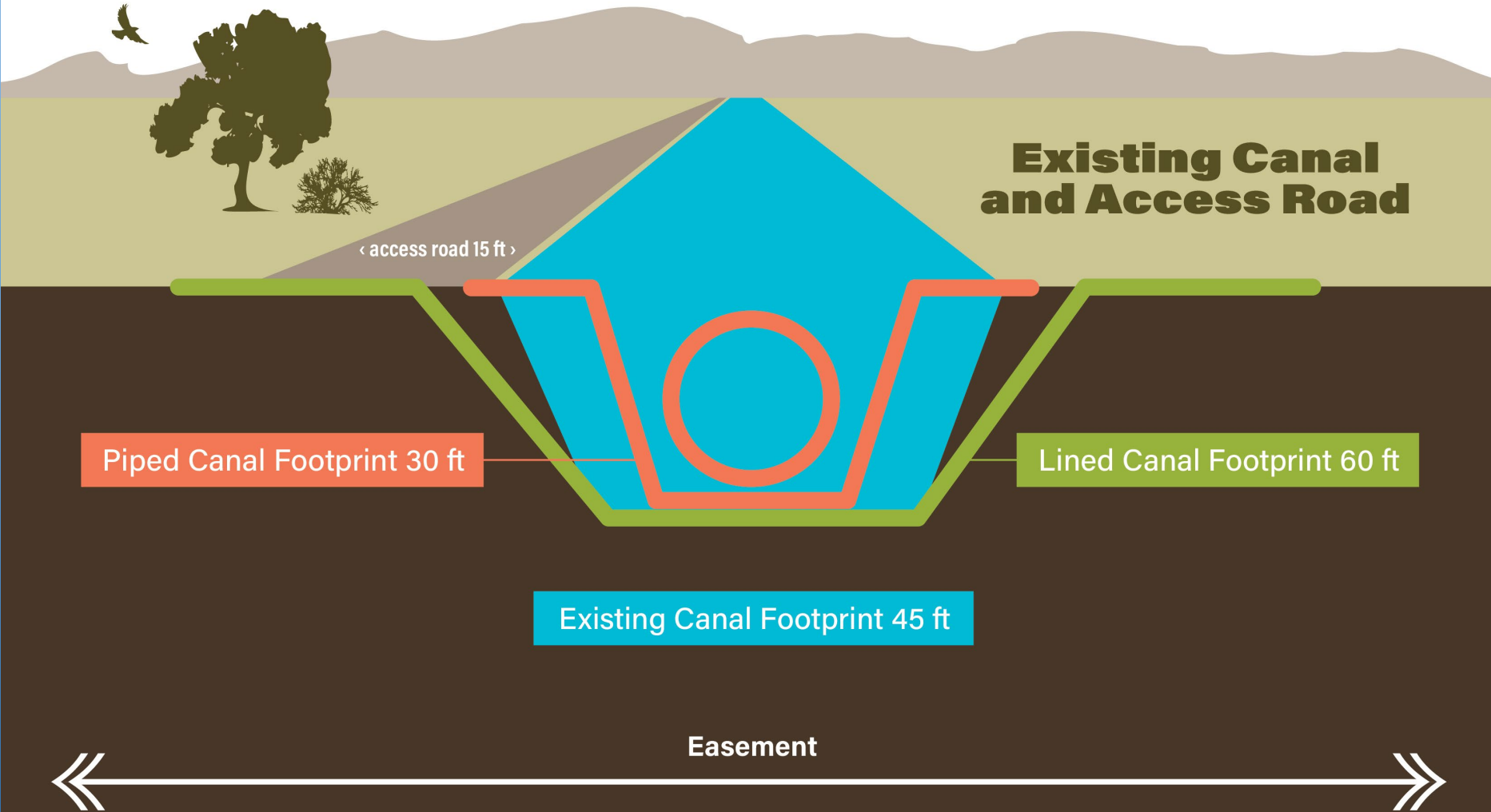


PIPING VS. CANAL LINING

(National Economic Efficiency Analysis)

	Preferred Alternative: Piping	Canal Lining Alternative*
DESIGN LIFE YEARS	100	30
CAPITAL COSTS	\$31,545,700	\$40,853,000
NET PRESENT VALUE OF REPLACEMENT	\$169,000	\$34,753,000
ANNUAL OPERATIONS & MAINTENANCE COSTS	\$34,000	\$51,000
NET PRESENT VALUE OF OPERATIONS & MAINTENANCE COSTS	\$1,347,000	\$2,022,000
TOTAL NET PRESENT VALUE	\$33,061,700	\$77,629,000
*100 percent of the lining (geomembrane and shotcrete would be replaced at both 30 and 60 years		

Modernization IMPROVEMENTS

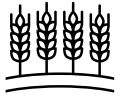




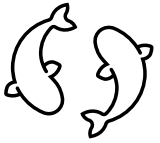
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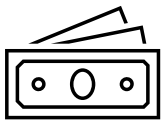
Increase water security for farmers



Increase year-round water supply for fish and habitat



Improve water conservation



Reduce District operation and maintenance costs



Improve public safety





Thank



You

