Deschutes Water Alliance

A Model Watershed Approach

September 2008

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Basic Water Planning Questions "Any Basin" Oregon

- What will total future demand be?
- What is the state of our watershed today?
- Where will new water demands come from?
- Will we meet regulatory obligations for ESA, CWA, SDWA and other laws?
- How will land use changes effect water uses today and tomorrow? Climate Change?
- What will water cost in 2025? 2050?

Deschutes Basin
Model Watershed

- Convened Stakeholders (DWA)
- Determined Demands, Set Goals
- Developed Plan
- Implementation Underway

Working to:

- Formalize the Relationships
- Integrate and Coordinate
- Secure Financing

Deschutes Water Alliance
Membership

- **Balanced Membership:**
  - Confederated Tribes of Warm Springs (CTWS)
  - 8 Irrigation Districts (DBBC)
  - 9 Cities (COCO)
  - Deschutes River Conservancy (DRC)
- **Series of Studies:**
  - Basin wide 25 and 50 year water supply & demand study (including instream flow targets – largest unmet need)
  - Groundwater Mitigation Water Bank
  - Others (www.deschutesriver.org)

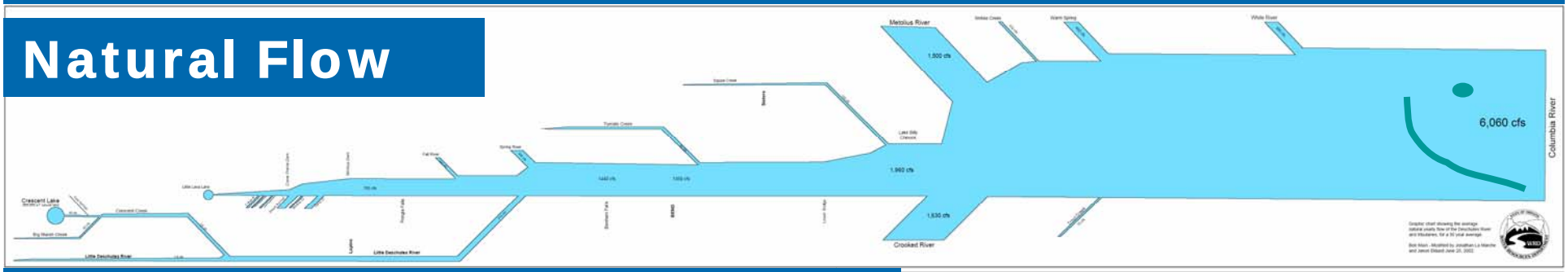
Deschutes Water Alliance
Mission

- **Move stream flows *toward* a more natural hydrograph while securing and maintaining improved instream flows and water quality to support fish and wildlife**
- **Secure and maintain a reliable and affordable supply of water to sustain agriculture**
- **Secure a safe, affordable, and high quality water supply for municipal and industrial uses**

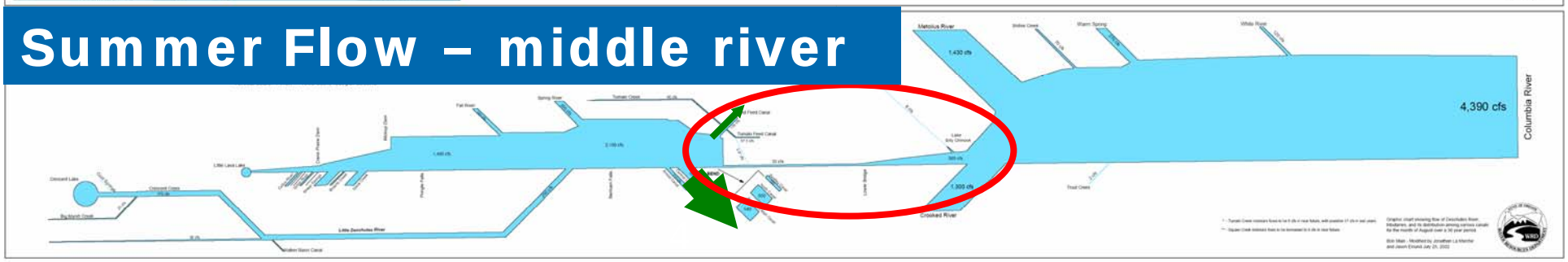
Deschutes Water Alliance

Existing Conditions (Growth-Neutral)

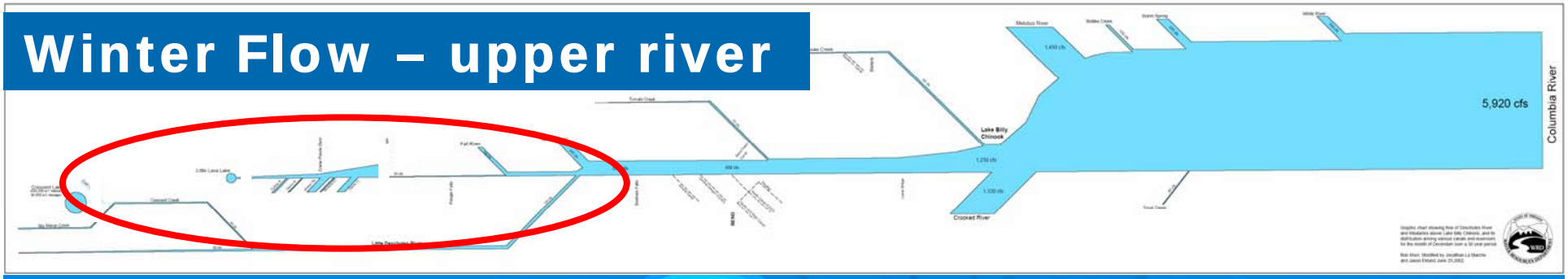
Natural Flow



Summer Flow – middle river



Winter Flow – upper river



No New "traditional" Water Available…

Future Supply – our success will require:

- 100 year look-backward: rethink water rights
- 100 year look ahead: Climate Change
- Catalysts: Regulatory and Land Use changes
- Tools: Ongoing Planning & Management; Investments in Efficiency & Infrastructure

More than a "Study Area"

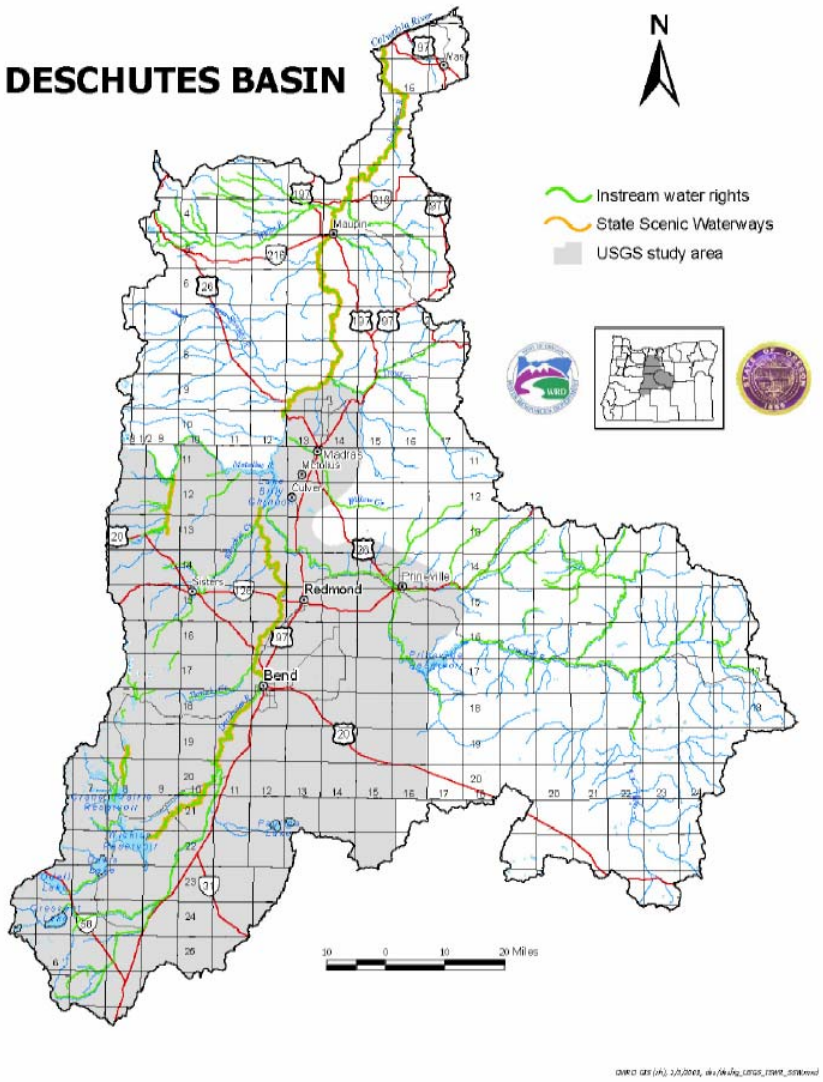


Figure 1. Deschutes River Basin and ground water study area.

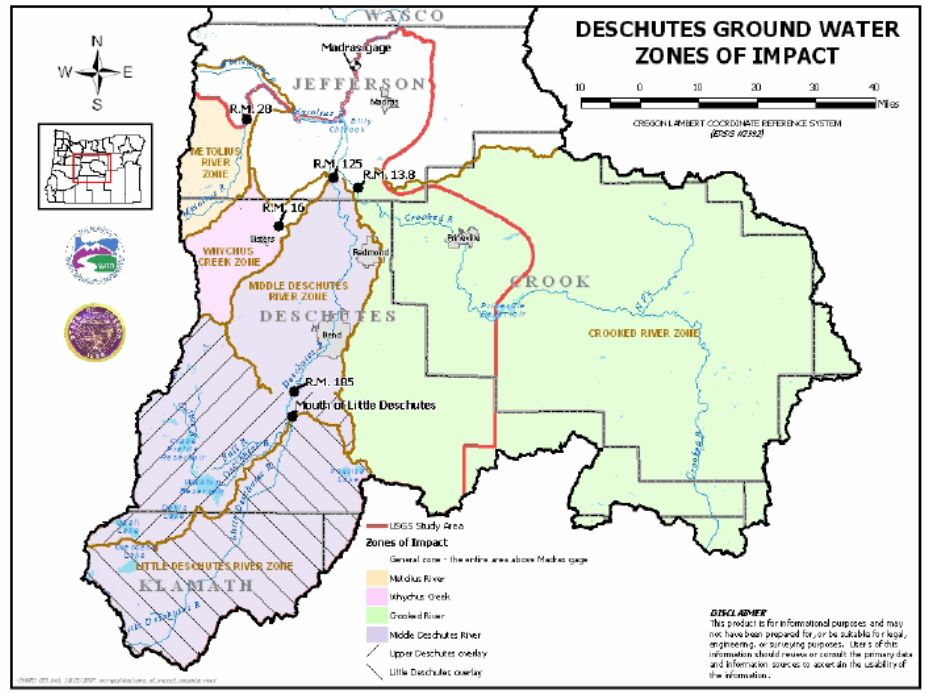


Figure 12. Map showing the location of each zone of impact identified by the Department.

No further groundwater appropriation without mitigation

Traditional Approach

Key Regulatory Drivers

Scenic Waterway Act	Safe Drinking Water Act (Groundwater)	Clean Water Act	ESA	Land Use
Separate Mandate & Program	Separate Mandate & Program	Separate Mandate & Program(s)	Separate Mandate & Program	Separate Mandate & Program

Watershed Approach

Key Regulatory Drivers

Scenic Waterway Act

Safe Drinking Water Act (UIC/Groundwater)

Clean Water Act (MS4/NPDES /TMDL)

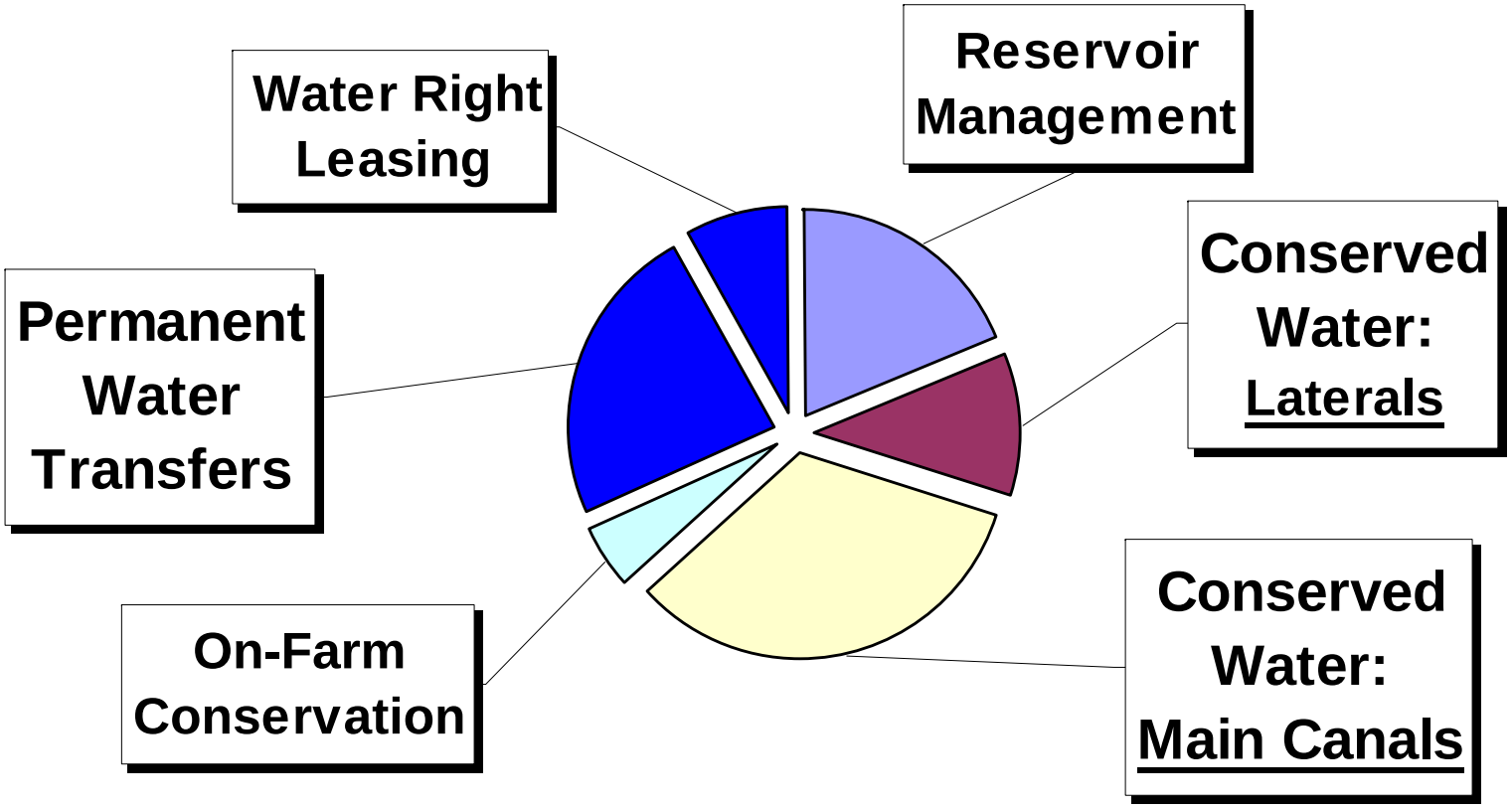
ESA (HCP)

Land Use Laws

Integrated Watershed Management

Major Pieces of the Water Management Pie

(from 2006 DWA Studies)



Challenges We Face

- Developing supply options (reallocation)
- State & Federal Regulations
- Water Bank- water for today & future
- Infrastructure: Invest New / Upgrade Old
- Pay for planning & governance
- Continual improvement of monitoring & measurement

Developing Supply Options

- Barriers to new supply
  - Financial
  - Operational
- Solutions
  - Financial: exit fee
  - Operational: more efficient infrastructure

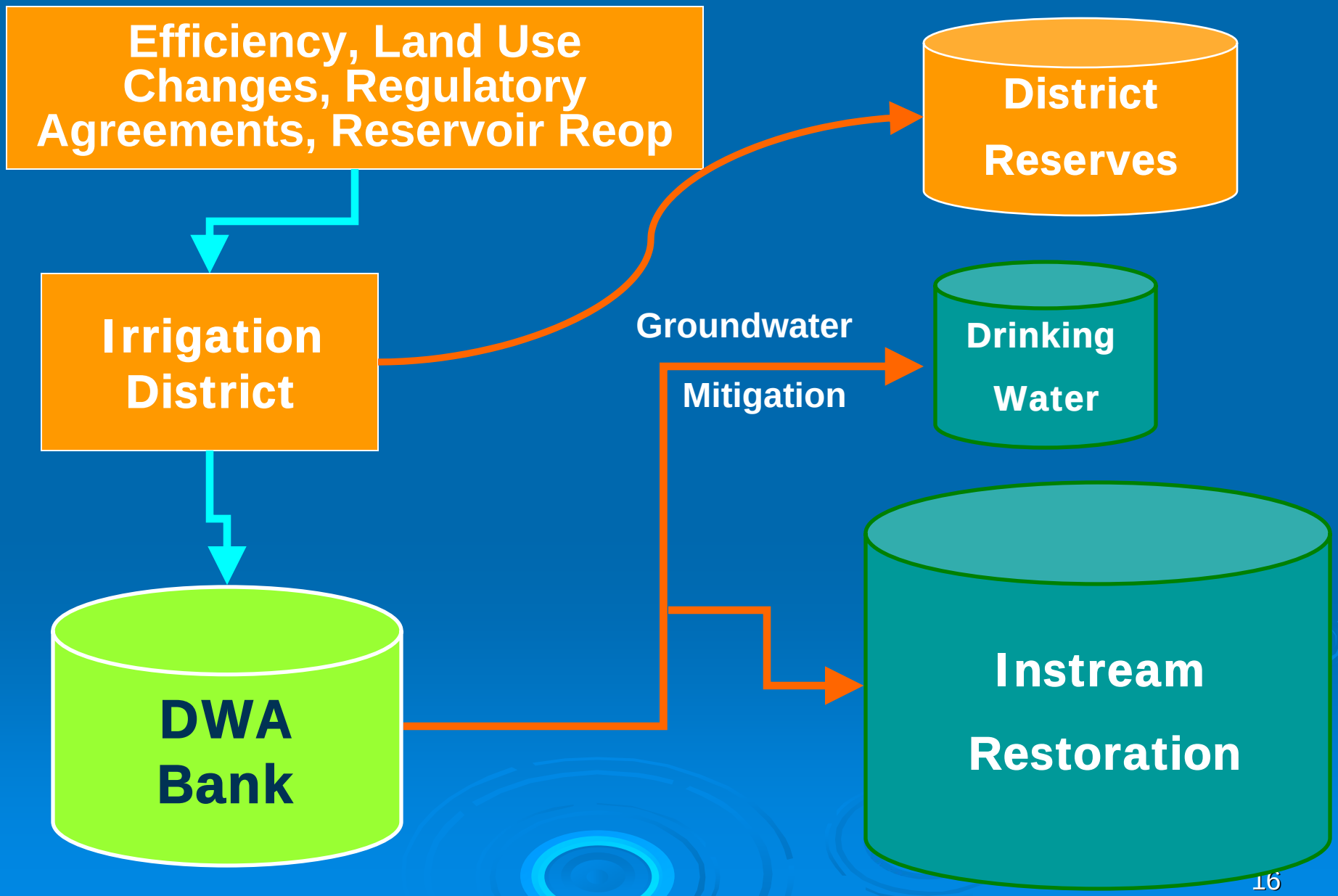
State & Federal Regulation

- Challenges
  - ESA, CWA, SWDA, Scenic Waterway
  - Regulation increases costs
  - Federal Deschutes Project - Reclamation
- Solutions
  - Invest in Water Bank
  - Invest in infrastructure

Capitalizing the Water Bank

- Challenges
  - Large unmet existing groundwater mitigation needs
  - Two-year lag time to produce credits
  - Need supply for future permits as well
- Solutions
  - Revolving loans or other state capitalization of bank to produce an inventory of mitigation credits.
  - Account gets repaid by qualified buyers (permit holders with state mitigation obligation)
  - Build account for future – Allocation process assists in planning

DWA Bank – Water Flow



Water Bank Leasing

- Challenge
  - Sustainable financing difficult to secure due to short term protection of flow.
- Solution
  - State funding for the most cost effective method of flow restoration ever devised
  - Leasing can be significant annual instream flow base even though temporary

Infrastructure

- Challenges
  - Current water infrastructure needs replacing
    - Operational problems / huge inefficiencies
    - New regulatory drivers – CWA, ESA, SDWA
  - High cost to modernize
  - High cost of coordination / multiple benefits
- Solution
  - Grant funding for infrastructure development
  - Clear criteria for projects that meet multiple objectives
  - Public monies for public benefit

Financing Ongoing Planning and Governance

- Challenges
  - Governance / Coordination / Communication of multi-stakeholder groups is difficult & expensive
  - Planning is expensive / many public benefits
- Solutions
  - Small subsidy to provide incentive for good governance and planning
  - Use Transportation investment model: % of each project to planning / coordination

Improving Water Measurement

- Basin Wide Telemetry via Internet
  - **Reclamation Hydromet**
    - **Reservoirs**
    - **Rivers and Stream flows**
    - **Canals**
    - **Federal-State-Local cost share**

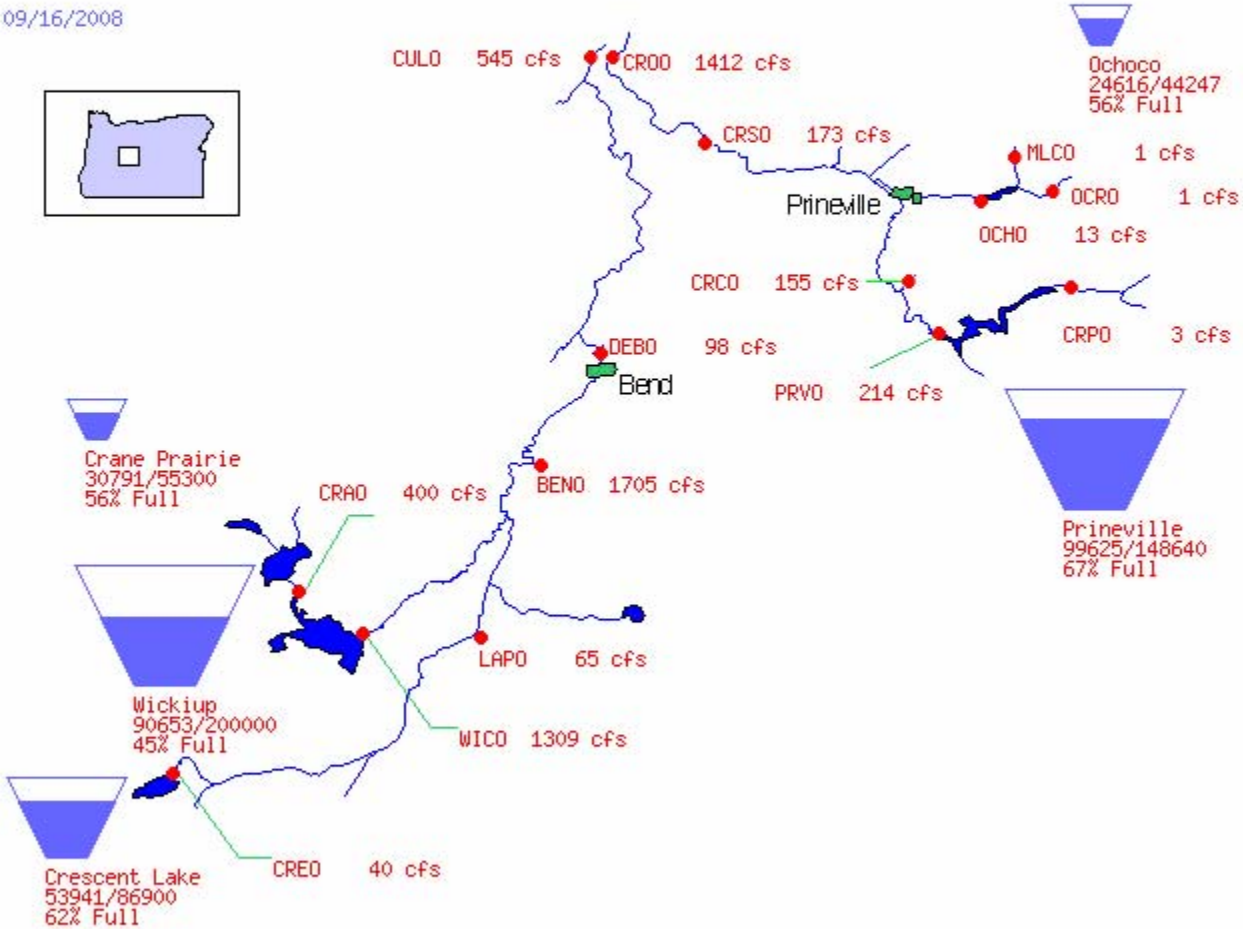
Water 2025 Telemetry and Conservation Grants

- Each irrigation district utilizes telemetry past canal diversions
- 41 active telemetry stations

- **Good Measurement = Better Management**

US Bureau of Reclamation, Pacific Northwest Region
Major Storage Reservoirs in the Deschutes River Basin

09/16/2008



PROVISIONAL DATA - SUBJECT TO CHANGE!

BENO Deschutes River at Benham Falls CRSO Crooked River at Smith Rocks

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Deschutes River Basin, Oregon - Realtime Data

Reservoirs

Code	Station Name	Last Data Value		
WIC	Wickiup Reservoir near LaPine, OR	17-SEP 22:30	90257. AF	4323.69 ft.
CRA	Crane Prairie Reservoir nr. LaPine, OR	17-SEP 22:15	30713. AF	4439.52 ft.
CRE	Crescent Lake near Crescent, OR	17-SEP 22:15	53867. AF	4838.43 ft.
HAY	Haystack Reservoir near Culver, OR	17-SEP 22:00	4496. AF	2836.78 ft.

Streamflows

Code	Station Name	Last Data Value		
WICO	Deschutes River below Wickiup Res., OR	17-SEP 22:30	1366. cfs	5.54 ft.
CRAO	Deschutes River below Crane Prairie Res., OR	17-SEP 22:15	398. cfs	2.22 ft.
CREO	Crescent Creek at Crescent Lake, OR	17-SEP 22:15	44.3 cfs	0.96 ft.
LAPO	Little Deschutes River near LaPine, OR	17-SEP 22:15	63.7 cfs	2.42 ft.
BENO	Deschutes River at Benham Falls, OR	17-SEP 22:30	1699. cfs	4.69 ft.
DEBO	Deschutes River Below Bend, OR	17-SEP 22:30	88.7 cfs	1.64 ft.
TUMO	Tumalo Creek nr Bend, OR	17-SEP 22:30	9.78 cfs	0.62 ft.
SQSO	Whychus Creek at Sisters, OR	17-SEP 22:30	14.6 cfs	1.23 ft.

Canals

Code	Station Name	Last Data Value		
ARNO	Arnold Canal	17-SEP 22:15	2.44	90.8 cfs

www.usbr.gov/pn/hydromet/destea.html
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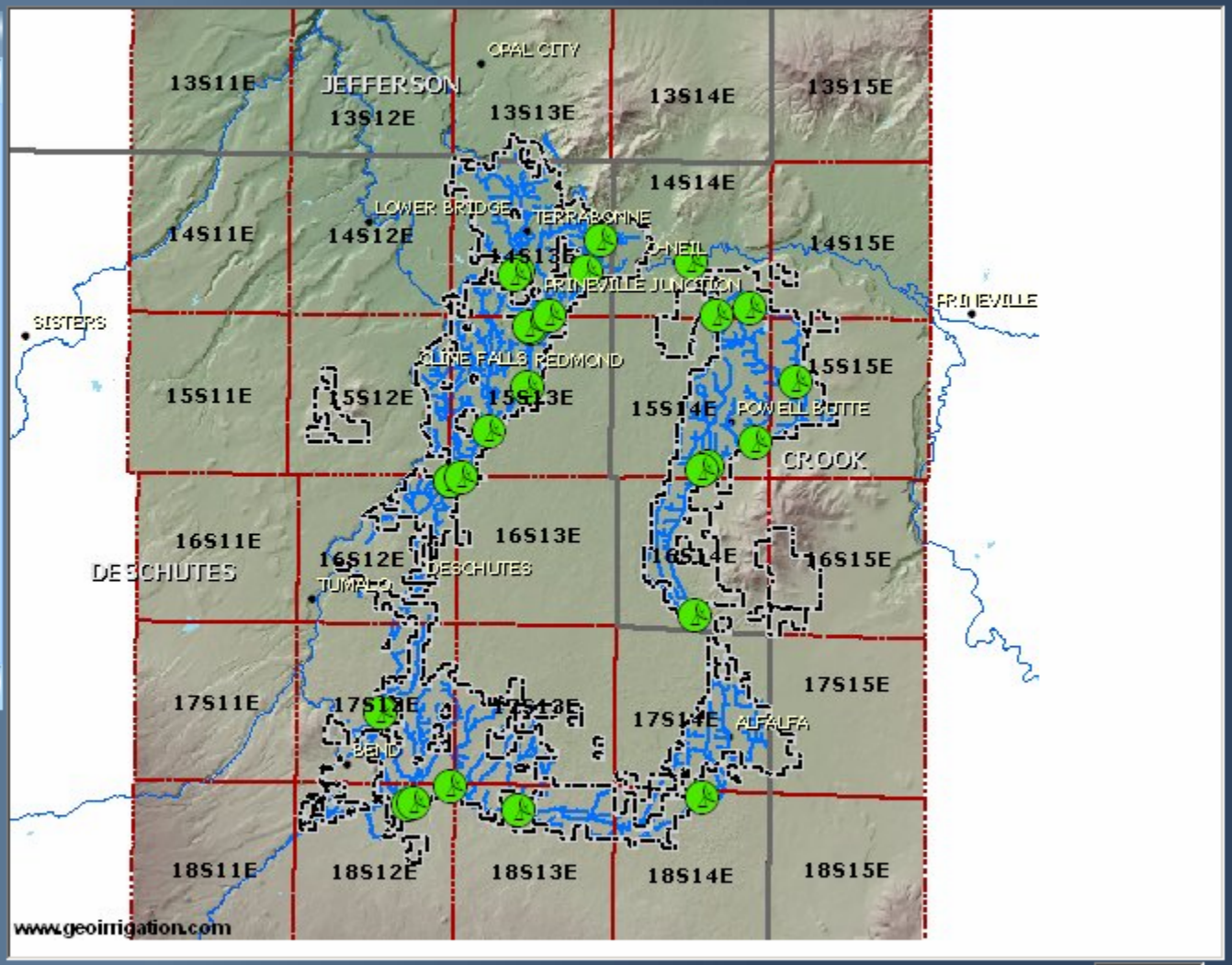

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Refresh Map

- Priority Layers
- Administrative Boundaries
- Primary Basemap
- Conveyance System
- Water Rights
- Natural Features
- Other
- Imagery

Refresh Map

Layer Visibility Legend

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- Visible layer - Zoom in to display
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Metadata - Click to view

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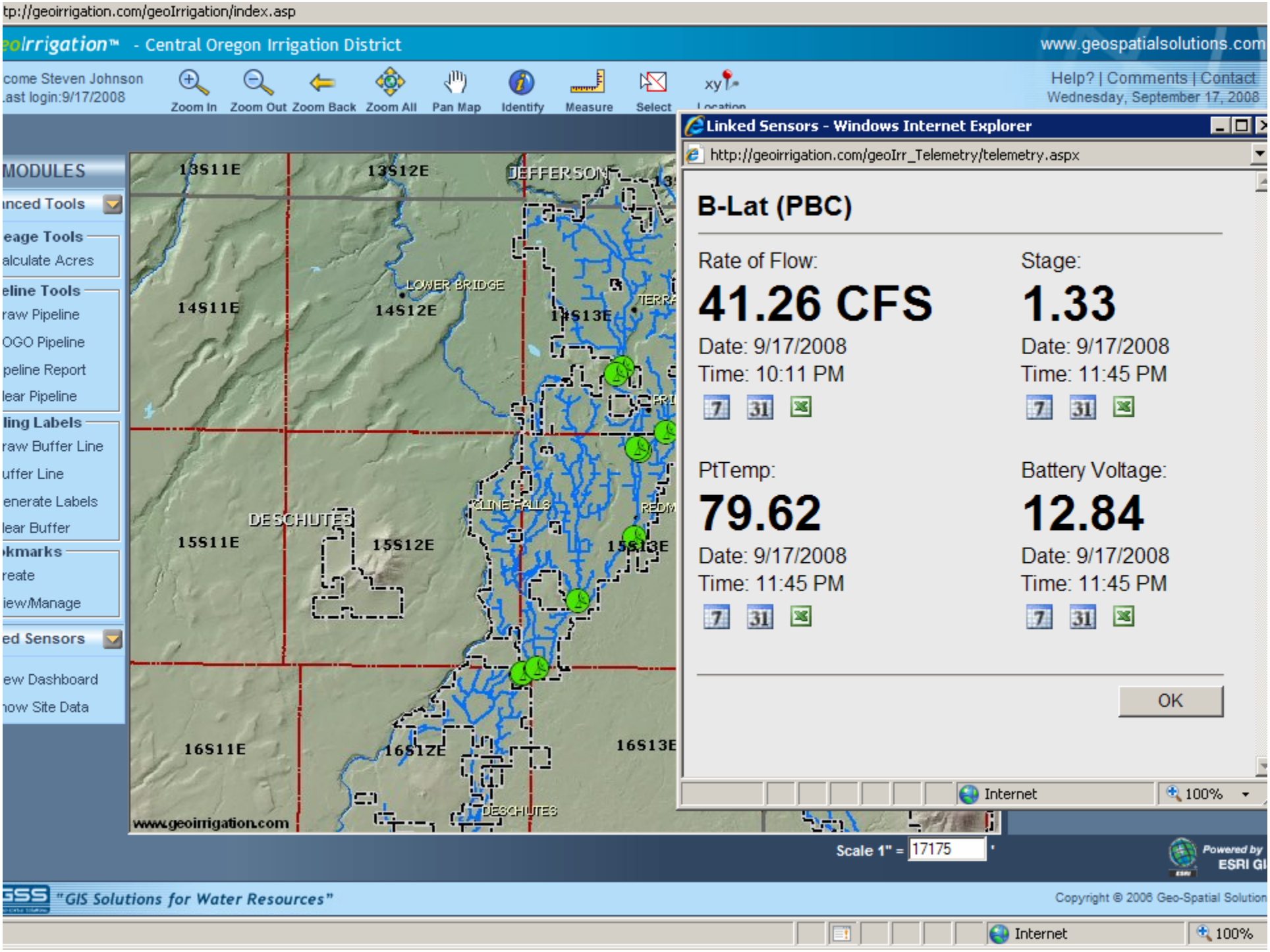
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B-Lat (PBC)
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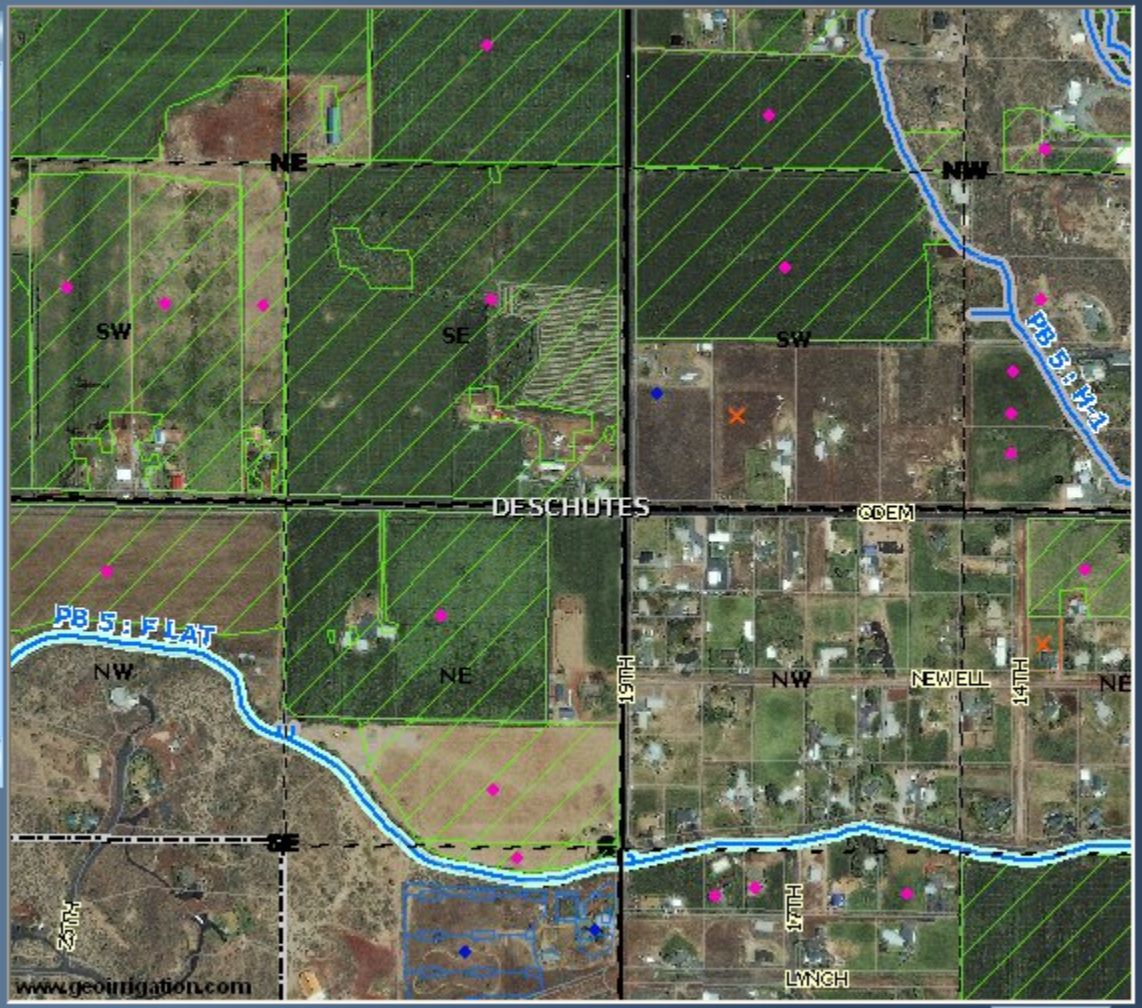
Acreage Tools
- Calculate Acres

Pipeline Tools
- Draw Pipeline
- COGO Pipeline
- Pipeline Report
- Clear Pipeline

Mailing Labels
- Draw Buffer Line
- Buffer Line
- Generate Labels
- Clear Buffer

Bookmarks
- Create
- View/Manage

Linked Sensors



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  - QUIT CLAIM RIGHTS
  - PENDING RIGHTS
  - PETITIONED RIGHTS
  - IRRIGATED RIGHTS
  - EXITED RIGHTS
- Natural Features
- Other
- Imagery
  - SHADED RELIEF IMAGE
  - HILLSHADE IMAGE
  - DRGS CROOK
  - DRGS DESCHUTES
  - 2008 IKONOS 1M COLOR
  - 2008 IKONOS 1M FALSE COLOR
  - 2005 NAIP CROOK
  - 2005 NAIP DESCHUTES

Refresh Map

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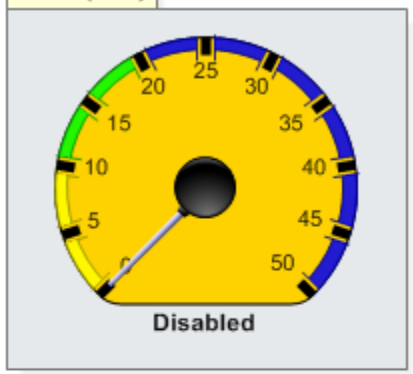

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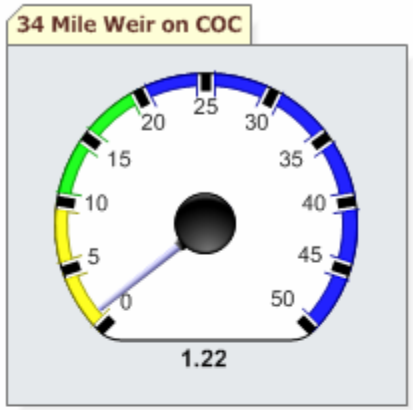

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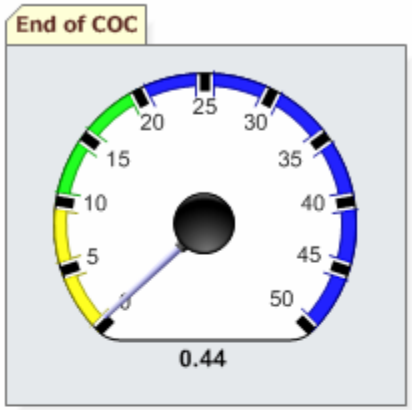

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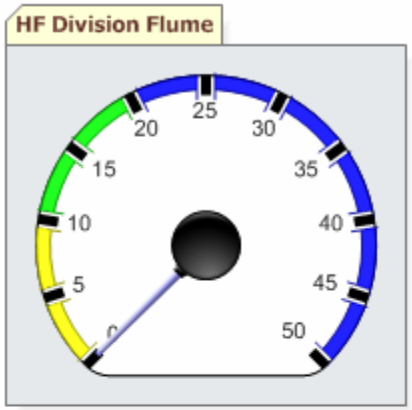
HF Division Flume



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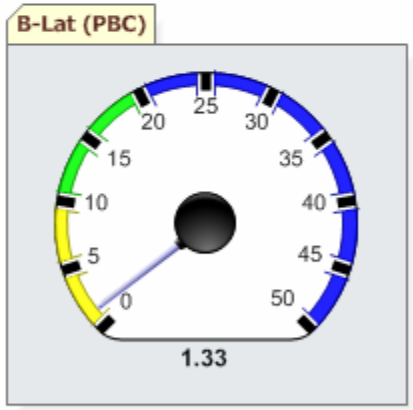

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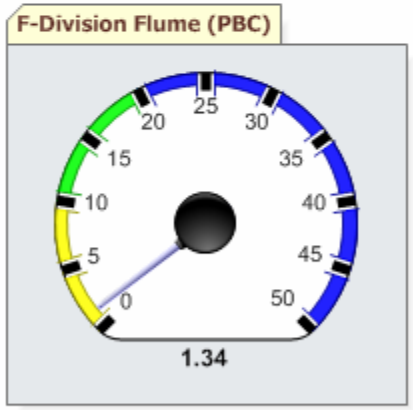

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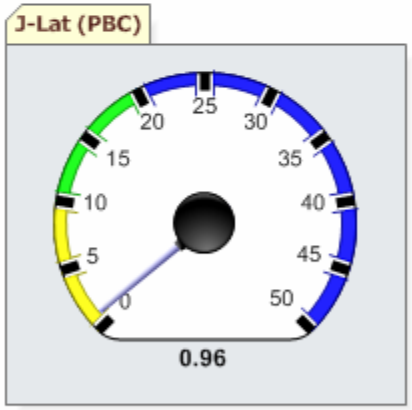

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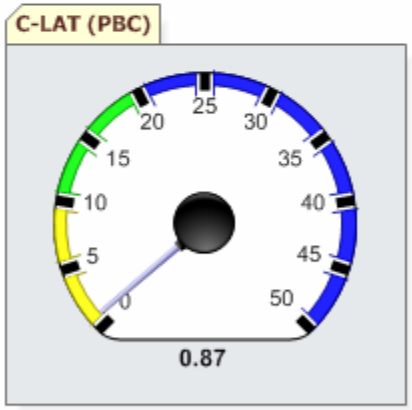

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L-Lat (COC)

PBC Spill

Dry Canyon Waste (COC)

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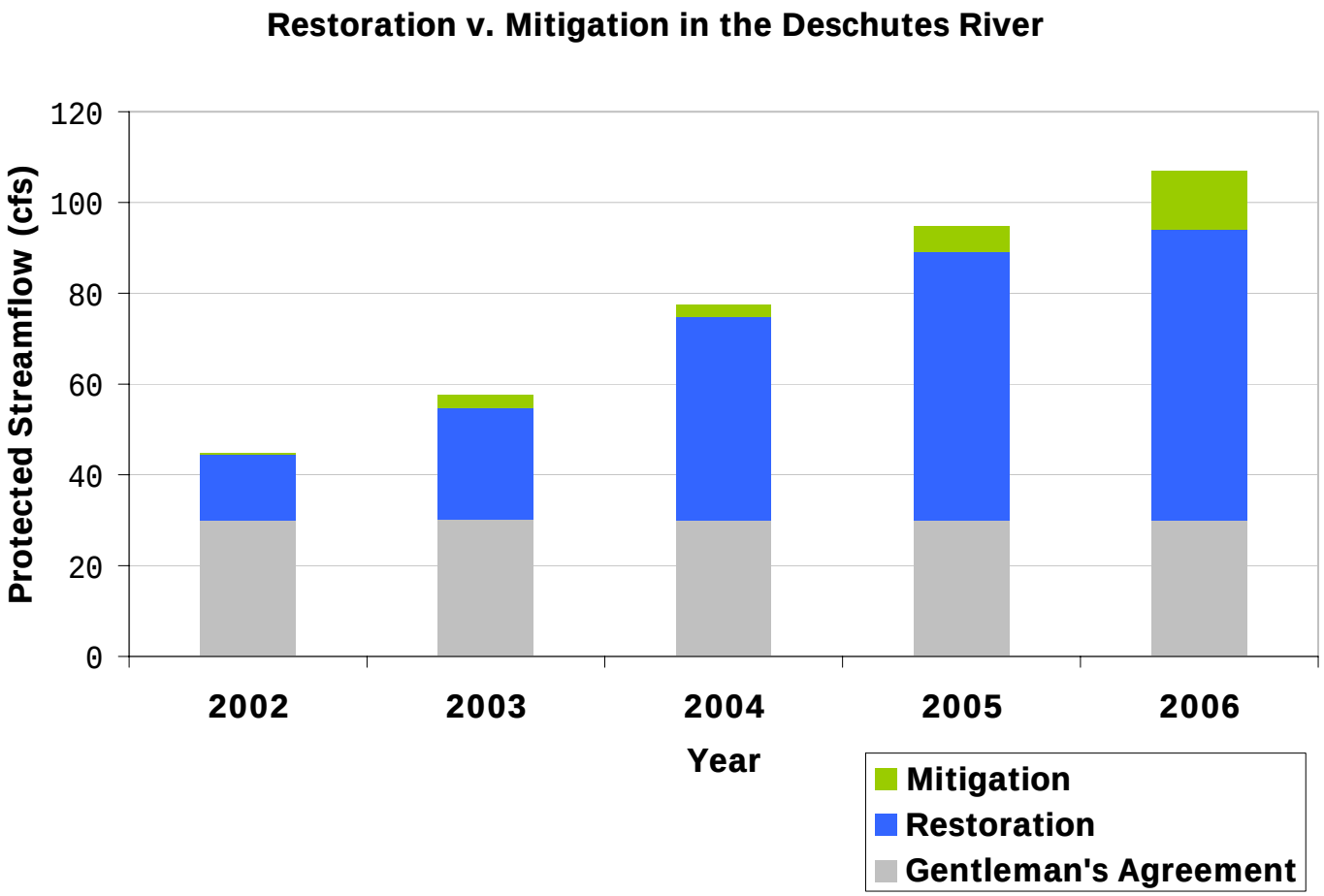
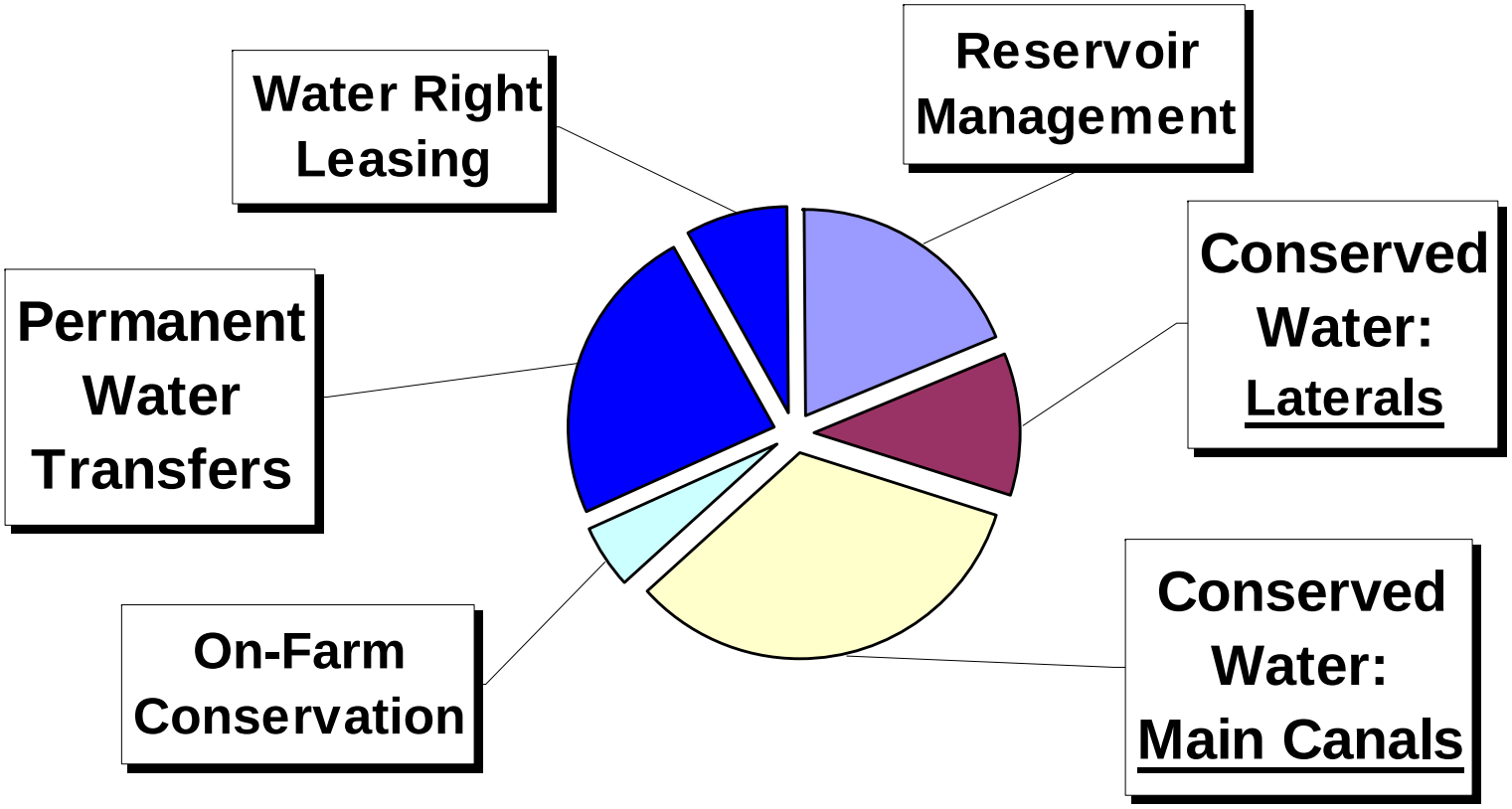
How can State assure success in Deschutes Basin?

- Capitalize fund to create water bank inventory ahead of need
- Provide framework & priority criteria for increased funding to modernize water infrastructure
- Provide capital advance for regional planning and governance (basis for match, next steps)
- Invest in future supply today & create fund for public benefit portion
- Form Agency partnerships on measurement and monitoring of related responsibilities: OWEB, ODFW, OWRD, ODEQ, DSL, others

Restoration Impact of Mitigation on the Deschutes



Major Pieces of the Water Management Pie

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