



**OREGON'S  
INTEGRATED WATER RESOURCES STRATEGY**



AUGUST 2012

**Columbia River  
Policy Advisory Group**

October 17, 2012

**Dr. Brenda Bateman, Sr. Policy Coordinator**  
Oregon Water Resources Department



## INTRODUCTION

- Launched by Oregon Legislature in 2009
- A blueprint to better understand and meet Oregon's instream and out-of-stream needs
- Inter-agency  
*(looking at water quantity, water quality, & ecosystem needs)*
- Robust public input
- Adopted in August 2012



# THE FINAL PRODUCT

## Oregon's Integrated Water Resources Strategy Framework

Goal 1: Improve Our Understanding of Oregon's Water Resources

### Understand Water Resources Today

Further Understand Limited Water Supplies & Systems  
*(groundwater, surface water and their interaction)*

Improve Water Quality & Water Quantity Information

Further Understand Our Water Management Institutions

#### Understanding Water Resources / Supplies / Institutions

- 2a. Conduct additional groundwater investigations
- 2b. Improve water resource data collection and monitoring
- 2c. Coordinate inter-agency data collection, processing, and use in decision-making

← OBJECTIVES →

← CRITICAL ISSUES →

← RECOMMENDED ACTIONS →

Goal 1 (continued)

### Understand Instream and Out-of-Stream Needs

Further Define Out-of-Stream Needs / Demands  
*(i.e., diverted water)*

Further Define Instream Needs / Demands  
*(i.e., left-in-place water)*

#### Understanding Oregon's Out-of-Stream Needs/Demands

- 2a. Update long-term water demand forecasts [ ]
- 2b. Improve water-use measurement & reporting [ ]
- 2c. Determine pre-1909 water right claims
- 2d. Update water right records with contact information
- 2e. Update Oregon's water-related permitting guide

#### Understanding Oregon's Instream Needs/Demands

- 3a. Determine flows needed (quality & quantity) to support instream needs [ ]
- 3b. Determine needs of groundwater dependent ecosystems [ ]

Goal 1 (continued)

### Understand the Coming Pressures That Affect Our Needs and Supplies

Economic Development

Water & Energy Nexus

Water & Land Use Nexus

Population Growth

Climate Change

Infrastructure

Education & Outreach

#### The Water-Energy Nexus

- 4a. Analyze the effects on water from energy development projects & policies [ ]
- 4b. Take advantage of existing infrastructure to develop hydroelectric power
- 4c. Promote strategies that increase/integrate energy & water savings [ ]

#### Climate Change

- 5a. Support continued basin-scale climate change research efforts [ ]
- 5b. Assist with climate change adaptation and resiliency strategies [ ]

#### Economic Development & Population Growth

*(See Actions 2.A. and 3.A.)*

#### The Water and Land Use Nexus

- 6a. Improve integration of water information into land use planning (& vice versa) [ ]
- 6b. Update state agency coordination plans
- 6c. Encourage low-impact development practices [ ]

#### Infrastructure

- 7a. Develop and upgrade water & wastewater infrastructure
- 7b. Encourage regional (sub-basin) approaches to water and wastewater systems

#### Education and Outreach

- 8a. Support Oregon's K-12 environmental literacy plan
- 8b. Provide education and training for Oregon's next generation of water experts [ ]
- 8c. Promote community education and training opportunities
- 8d. Identify ongoing water-related research needs [ ]

← OBJECTIVES →

← CRITICAL ISSUES →

← RECOMMENDED ACTIONS →

Goal 2: Meet Oregon's Water Resource Needs

### Meet Oregon's Instream and Out-of-Stream Needs

Place-Based Efforts

Water Management & Development

Healthy Ecosystems

Public Health

Funding

#### Place-Based Efforts

- 9a. Undertake place-based integrated, water resources planning
- 9b. Coordinate implementation of already-existing natural resource plans
- 9c. Partner with federal agencies, tribes, and neighboring states in long-term water resource management

#### Water Management & Development

- 10a. Increase water-use efficiency and water conservation [ ]
- 10b. Improve access to built storage
- 10c. Encourage additional water reuse projects [ ]
- 10d. Reach environmental outcomes with non-regulatory alternatives [ ]
- 10e. Authorize and fund a water supply development program

#### Healthy Ecosystems

- 11a. Improve watershed health, resiliency, and capacity for natural storage
- 11b. Develop additional instream protections
- 11c. Prevent and eradicate invasive species
- 11d. Protect and restore instream habitat and habitat access for fish & wildlife

#### Public Health

- 12a. Ensure the safety of Oregon's drinking water
- 12b. Reduce the use of and exposure to toxics and other pollutants
- 12c. Implement water quality pollution control plans

#### Funding

- 13a. Fund development & implementation of Oregon's IWRS
- 13b. Fund water resource management at the state level
- 13c. Fund communities needing feasibility studies for water conservation, storage, and reuse projects



# THE FINAL PRODUCT

## Oregon's Integrated Water Resources Strategy Framework

Goal 1: Improve Our Understanding of Oregon's Water Resources

**Understand Water Resources Today**

← OBJECTIVES →

Further Understand Limited Water Supplies & Systems  
*(groundwater, surface water and their interaction)*

← CRITICAL ISSUES →

Improve Water Quality & Water Quantity Information      Further Understand Our Water Management Institutions

← RECOMMENDED ACTIONS →

Understanding Water Resources / Supplies / Institutions  
 2a. Conduct additional groundwater investigations  
 2b. Improve water resource data collection and monitoring  
 2c. Coordinate inter-agency data collection, processing, and use in decision-making

Goal 1 (continued)

**Understand Instream and Out-of-Stream Needs**

← OBJECTIVES →

Further Define Out-of-Stream Needs / Demands  
*(i.e., diverted water)*

← CRITICAL ISSUES →

Further Define Instream Needs / Demands  
*(i.e., left-in-place water)*

← RECOMMENDED ACTIONS →

<u>Understanding Oregon's Out-of-Stream Needs/Demands</u> 2a. Update long-term water demand forecasts [ ] 2b. Improve water-use measurement & reporting [ ] 2c. Determine pre-1909 water right claims 2d. Update water right records with contact information 2e. Update Oregon's water-related permitting guide	<u>Understanding Oregon's Instream Needs/Demands</u> 3a. Determine flows needed (quality & quantity) to support instream needs [ ] 3b. Determine needs of groundwater dependent ecosystems [ ]
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Goal 1 (continued)

**Understand the Coming Pressures That Affect Our Needs and Supplies**

← OBJECTIVES →

Economic Development      Water & Energy Nexus      Water & Land Use Nexus

← CRITICAL ISSUES →

Population Growth      Climate Change      Infrastructure      Education & Outreach

← RECOMMENDED ACTIONS →

The Water-Energy Nexus  
 4a. Analyze the effects on water from energy development projects & policies [ ]  
 4b. Take advantage of existing infrastructure to develop hydroelectric power  
 4c. Promote strategies that increase/integrate energy & water savings [ ]

The Water and Land Use Nexus  
 6a. Improve integration of water information into land use planning (& vice versa) [ ]  
 6b. Update state agency coordination plans  
 6c. Encourage low-impact development practices [ ]

Infrastructure  
 7a. Develop and upgrade water & wastewater infrastructure  
 7b. Encourage regional (sub-basin) approaches to water and wastewater systems

Climate Change  
 5a. Support continued basin-scale climate change research efforts [ ]  
 5b. Assist with climate change adaptation and resiliency strategies [ ]

Education and Outreach  
 8a. Support Oregon's K-12 environmental literacy plan  
 8b. Provide education and training for Oregon's next generation of water experts [ ]  
 8c. Promote community education and training opportunities  
 8d. Identify ongoing water-related research needs [ ]

Economic Development & Population Growth  
*(See Actions 2.A. and 3.A.)*

Goal 2: Meet Oregon's Water Resource Needs

**Meet Oregon's Instream and Out-of-Stream Needs**

← OBJECTIVES →

Place-Based Efforts      Water Management & Development

← CRITICAL ISSUES →

Healthy Ecosystems      Public Health      Funding

← RECOMMENDED ACTIONS →

Place-Based Efforts  
 9a. Undertake place-based integrated, water resources planning  
 9b. Coordinate implementation of already-existing natural resource plans  
 9c. Partner with federal agencies, tribes, and neighboring states in long-term water resource management

Healthy Ecosystems  
 11a. Improve watershed health, resiliency, and capacity for natural storage  
 11b. Develop additional instream protections  
 11c. Prevent and eradicate invasive species  
 11d. Protect and restore instream habitat and habitat access for fish & wildlife

Water Management & Development  
 10a. Increase water-use efficiency and water conservation [ ]  
 10b. Improve access to built storage  
 10c. Encourage additional water reuse projects [ ]  
 10d. Reach environmental outcomes with non-regulatory alternatives [ ]  
 10e. Authorize and fund a water supply development program

Public Health  
 12a. Ensure the safety of Oregon's drinking water  
 12b. Reduce the use of and exposure to toxics and other pollutants  
 12c. Implement water quality pollution control plans

Funding  
 13a. Fund development & implementation of Oregon's IWRS  
 13b. Fund water resource management at the state level  
 13c. Fund communities needing feasibility studies for water conservation, storage, and reuse projects



# THE FINAL PRODUCT

## Oregon's Integrated Water Resources Strategy Framework

Goal 1: Improve Our Understanding of Oregon's Water Resources

**Understand Water Resources Today**

← OBJECTIVES →

Further Understand Limited Water Supplies & Systems  
*(groundwater, surface water and their interaction)*

← CRITICAL ISSUES →

Improve Water Quality & Water Quantity Information      Further Understand Our Water Management Institutions

← RECOMMENDED ACTIONS →

Understanding Water Resources / Supplies / Institutions  
 1a. Conduct additional groundwater investigations  
 1b. Improve water resource data collection and monitoring  
 1c. Coordinate inter-agency data collection, processing, and use in decision-making

Goal 1 (continued)

**Understand Instream and Out-of-Stream Needs**

← OBJECTIVES →

Further Define Out-of-Stream Needs / Demands  
*(i.e., diverted water)*

← CRITICAL ISSUES →

Further Define Instream Needs / Demands  
*(i.e., left-in-place water)*

← RECOMMENDED ACTIONS →

<u>Understanding Oregon's Out-of-Stream Needs/Demands</u> 2a. Update long-term water demand forecasts (□) 2b. Improve water-use measurement & reporting (□) 2c. Determine pre-1909 water right claims 2d. Update water right records with contact information 2e. Update Oregon's water-related permitting guide	<u>Understanding Oregon's Instream Needs/Demands</u> 3a. Determine flows needed (quality & quantity) to support instream needs (□) 3b. Determine needs of groundwater dependent ecosystems (□)
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Goal 1 (continued)

**Understand the Coming Pressures That Affect Our Needs and Supplies**

← OBJECTIVES →

Economic Development      Water & Energy Nexus      Water & Land Use Nexus

Population Growth      Climate Change      Infrastructure      Education & Outreach

← CRITICAL ISSUES →

← RECOMMENDED ACTIONS →

<u>The Water-Energy Nexus</u> 4a. Analyze the effects on water from energy development projects & policies (□) 4b. Take advantage of existing infrastructure to develop hydroelectric power 4c. Promote strategies that increase/integrate energy & water savings (□)	<u>The Water and Land Use Nexus</u> 6a. Improve integration of water information into land use planning (& vice versa) (□) 6b. Update state agency coordination plans 6c. Encourage low-impact development practices (□)
<u>Climate Change</u> 5a. Support continued basin-scale climate change research efforts (□) 5b. Assist with climate change adaptation and resiliency strategies (□)	<u>Infrastructure</u> 7a. Develop and upgrade water & wastewater infrastructure 7b. Encourage regional (sub-basin) approaches to water and wastewater systems
<u>Economic Development &amp; Population Growth</u> <i>(See Actions 2.A. and 3.A.)</i>	<u>Education and Outreach</u> 8a. Support Oregon's K-12 environmental literacy plan 8b. Provide education and training for Oregon's next generation of water experts (□) 8c. Promote community education and training opportunities 8d. Identify ongoing water-related research needs (□)

Goal 2: Meet Oregon's Water Resource Needs

**Meet Oregon's Instream and Out-of-Stream Needs**

← OBJECTIVES →

Place-Based Efforts      Water Management & Development

Healthy Ecosystems      Public Health      Funding

← CRITICAL ISSUES →

← RECOMMENDED ACTIONS →

<u>Place-Based Efforts</u> 9a. Undertake place-based integrated, water resources planning 9b. Coordinate implementation of already-existing natural resource plans 9c. Partner with federal agencies, tribes, and neighboring states in long-term water resource management	<u>Healthy Ecosystems</u> 11a. Improve watershed health, resiliency, and capacity for natural storage 11b. Develop additional instream protections 11c. Prevent and eradicate invasive species 11d. Protect and restore instream habitat and habitat access for fish & wildlife
<u>Water Management &amp; Development</u> 10a. Increase water-use efficiency and water conservation (□) 10b. Improve access to built storage 10c. Encourage additional water reuse projects (□) 10d. Reach environmental outcomes with non-regulatory alternatives (□) 10e. Authorize and fund a water supply development program	<u>Public Health</u> 12a. Ensure the safety of Oregon's drinking water 12b. Reduce the use of and exposure to toxics and other pollutants 12c. Implement water quality pollution control plans
	<u>Funding</u> 13a. Fund development & implementation of Oregon's IWRS 13b. Fund water resource management at the state level 13c. Fund communities needing feasibility studies for water conservation, storage, and reuse projects



# THE FINAL PRODUCT

## Oregon's Integrated Water Resources Strategy Framework

Goal 1: Improve Our Understanding of Oregon's Water Resources

**Understand Water Resources Today**

Further Understand Limited Water Supplies & Systems  
*(groundwater, surface water and their interaction)*

Improve Water Quality & Water Quantity Information      Further Understand Our Water Management Institutions

Understanding Water Resources / Supplies / Institutions  
 1a. Conduct additional groundwater investigations  
 1b. Improve water resource data collection and monitoring  
 1c. Coordinate inter-agency data collection, processing, and use in decision-making

← OBJECTIVES →

← CRITICAL ISSUES →

← RECOMMENDED ACTIONS →

Goal 1 (continued)

**Understand Instream and Out-of-Stream Needs**

Further Define Out-of-Stream Needs / Demands  
*(i.e., diverted water)*

Further Define Instream Needs / Demands  
*(i.e., left-in-place water)*

Understanding Oregon's Out-of-Stream Needs/Demands  
 2a. Update long-term water demand forecasts [ ]  
 2b. Improve water-use measurement & reporting [ ]  
 2c. Determine pre-1909 water right claims  
 2d. Update water right records with contact information  
 2e. Update Oregon's water-related permitting guide

Understanding Oregon's Instream Needs/Demands  
 3a. Determine flows needed (quality & quantity) to support instream needs [ ]  
 3b. Determine needs of groundwater dependent ecosystems [ ]

Goal 1 (continued)

**Understand the Coming Pressures That Affect Our Needs and Supplies**

Economic Development      Water & Energy Nexus      Water & Land Use Nexus

Population Growth      Climate Change      Infrastructure      Education & Outreach

The Water-Energy Nexus  
 4a. Analyze the effects on water from energy development projects & policies [ ]  
 4b. Take advantage of existing infrastructure to develop hydroelectric power  
 4c. Promote strategies that increase/integrate energy & water savings [ ]

The Water and Land Use Nexus  
 6a. Improve integration of water information into land use planning (& vice versa) [ ]  
 6b. Update state agency coordination plans  
 6c. Encourage low-impact development practices [ ]

Climate Change  
 5a. Support continued basin-scale climate change research efforts [ ]  
 5b. Assist with climate change adaptation and resiliency strategies [ ]

Infrastructure  
 7a. Develop and upgrade water & wastewater infrastructure  
 7b. Encourage regional (sub-basin) approaches to water and wastewater systems

Economic Development & Population Growth  
*(See Actions 2.A. and 3.A.)*

Education and Outreach  
 8a. Support Oregon's K-12 environmental literacy plan  
 8b. Provide education and training for Oregon's next generation of water experts [ ]  
 8c. Promote community education and training opportunities  
 8d. Identify ongoing water-related research needs [ ]

← OBJECTIVES →

← CRITICAL ISSUES →

← RECOMMENDED ACTIONS →

Goal 2: Meet Oregon's Water Resource Needs

**Meet Oregon's Instream and Out-of-Stream Needs**

Place-Based Efforts      Water Management & Development

Healthy Ecosystems      Public Health      Funding

Place-Based Efforts  
 9a. Undertake place-based integrated, water resources planning  
 9b. Coordinate implementation of already-existing natural resource plans  
 9c. Partner with federal agencies, tribes, and neighboring states in long-term water resource management

Healthy Ecosystems  
 11a. Improve watershed health, resiliency, and capacity for natural storage  
 11b. Develop additional instream protections  
 11c. Prevent and eradicate invasive species  
 11d. Protect and restore instream habitat and habitat access for fish & wildlife

Water Management & Development  
 10a. Increase water-use efficiency and water conservation [ ]  
 10b. Improve access to built storage  
 10c. Encourage additional water reuse projects [ ]  
 10d. Reach environmental outcomes with non-regulatory alternatives [ ]  
 10e. Authorize and fund a water supply development program

Public Health  
 12a. Ensure the safety of Oregon's drinking water  
 12b. Reduce the use of and exposure to toxics and other pollutants  
 12c. Implement water quality pollution control plans

Funding  
 13a. Fund development & implementation of Oregon's IWRS  
 13b. Fund water resource management at the state level  
 13c. Fund communities needing feasibility studies for water conservation, storage, and reuse projects



# THE FINAL PRODUCT

## Oregon's Integrated Water Resources Strategy Framework

Goal 1: Improve Our Understanding of Oregon's Water Resources

**Understand Water Resources Today**

← OBJECTIVES →

Further Understand Limited Water Supplies & Systems  
*(groundwater, surface water and their interaction)*

← CRITICAL ISSUES →

Improve Water Quality & Water Quantity Information      Further Understand Our Water Management Institutions

← RECOMMENDED ACTIONS →

Understanding Water Resources / Supplies / Institutions  
 1a. Conduct additional groundwater investigations  
 1b. Improve water resource data collection and monitoring  
 1c. Coordinate inter-agency data collection, processing, and use in decision-making

Goal 1 (continued)

**Understand Instream and Out-of-Stream Needs**

← OBJECTIVES →

Further Define Out-of-Stream Needs / Demands  
*(i.e., diverted water)*

← CRITICAL ISSUES →

Further Define Instream Needs / Demands  
*(i.e., left-in-place water)*

← RECOMMENDED ACTIONS →

<u>Understanding Oregon's Out-of-Stream Needs/Demands</u> 2a. Update long-term water demand forecasts (□) 2b. Improve water-use measurement & reporting (□) 2c. Determine pre-1909 water right claims 2d. Update water right records with contact information 2e. Update Oregon's water-related permitting guide	<u>Understanding Oregon's Instream Needs/Demands</u> 3a. Determine flows needed (quality & quantity) to support instream needs (□) 3b. Determine needs of groundwater dependent ecosystems (□)
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Goal 1 (continued)

**Understand the Coming Pressures That Affect Our Needs and Supplies**

← OBJECTIVES →

Economic Development      Water & Energy Nexus      Water & Land Use Nexus

← CRITICAL ISSUES →

Population Growth      Climate Change      Infrastructure      Education & Outreach

← RECOMMENDED ACTIONS →

<u>The Water-Energy Nexus</u> 4a. Analyze the effects on water from energy development projects & policies (□) 4b. Take advantage of existing infrastructure to develop hydroelectric power 4c. Promote strategies that increase/integrate energy & water savings (□)	<u>The Water and Land Use Nexus</u> 6a. Improve integration of water information into land use planning (& vice versa) (□) 6b. Update state agency coordination plans 6c. Encourage low-impact development practices (□)
<u>Climate Change</u> 5a. Support continued basin-scale climate change research efforts (□) 5b. Assist with climate change adaptation and resiliency strategies (□)	<u>Infrastructure</u> 7a. Develop and upgrade water & wastewater infrastructure 7b. Encourage regional (sub-basin) approaches to water and wastewater systems
<u>Economic Development &amp; Population Growth</u> <i>(See Actions 2.A. and 3.A.)</i>	<u>Education and Outreach</u> 8a. Support Oregon's K-12 environmental literacy plan 8b. Provide education and training for Oregon's next generation of water experts (□) 8c. Promote community education and training opportunities 8d. Identify ongoing water-related research needs (□)

Goal 2: Meet Oregon's Water Resource Needs

**Meet Oregon's Instream and Out-of-Stream Needs**

← OBJECTIVES →

Place-Based Efforts      Water Management & Development

← CRITICAL ISSUES →

Healthy Ecosystems      Public Health      Funding

← RECOMMENDED ACTIONS →

<u>Place-Based Efforts</u> 9a. Undertake place-based integrated, water resources planning 9b. Coordinate implementation of already-existing natural resource plans 9c. Partner with federal agencies, tribes, and neighboring states in long-term water resource management	<u>Healthy Ecosystems</u> 11a. Improve watershed health, resiliency, and capacity for natural storage 11b. Develop additional instream protections 11c. Prevent and eradicate invasive species 11d. Protect and restore instream habitat and habitat access for fish & wildlife
<u>Water Management &amp; Development</u> 10a. Increase water-use efficiency and water conservation (□) 10b. Improve access to built storage 10c. Encourage additional water reuse projects (□) 10d. Reach environmental outcomes with non-regulatory alternatives (□) 10e. Authorize and fund a water supply development program	<u>Public Health</u> 12a. Ensure the safety of Oregon's drinking water 12b. Reduce the use of and exposure to toxics and other pollutants 12c. Implement water quality pollution control plans
	<u>Funding</u> 13a. Fund development & implementation of Oregon's IWRS 13b. Fund water resource management at the state level 13c. Fund communities needing feasibility studies for water conservation, storage, and reuse projects

- \$21 million in G.O. bonds for a water supply development program.
- \$10 million in G.O. bonds for continued implementation of the Umatilla Project.
- Legislative Concept #658: Oregon's Water Supply Development Program, for the state to act as...
  - Investor
  - Broker
  - Funder
  - Water Banker

**recommended action 10.A.**  
Increase Water-Use Efficiency  
and Water Conservation

**recommended action 10.B.**  
Improve Access to Built Storage

**recommended action 10.C.**  
Encourage Additional Water  
Reuse Projects

**recommended action 10.D.**  
Reach Environmental Outcomes  
with Non-Regulatory Alternatives

**recommended action 10.E.**  
Authorize and Fund a Water  
Supply Development Program

ANY QUESTIONS?



Photo: George Gentry, USFWS

[waterstrategy@wrd.state.or.us](mailto:waterstrategy@wrd.state.or.us)



Thank you!