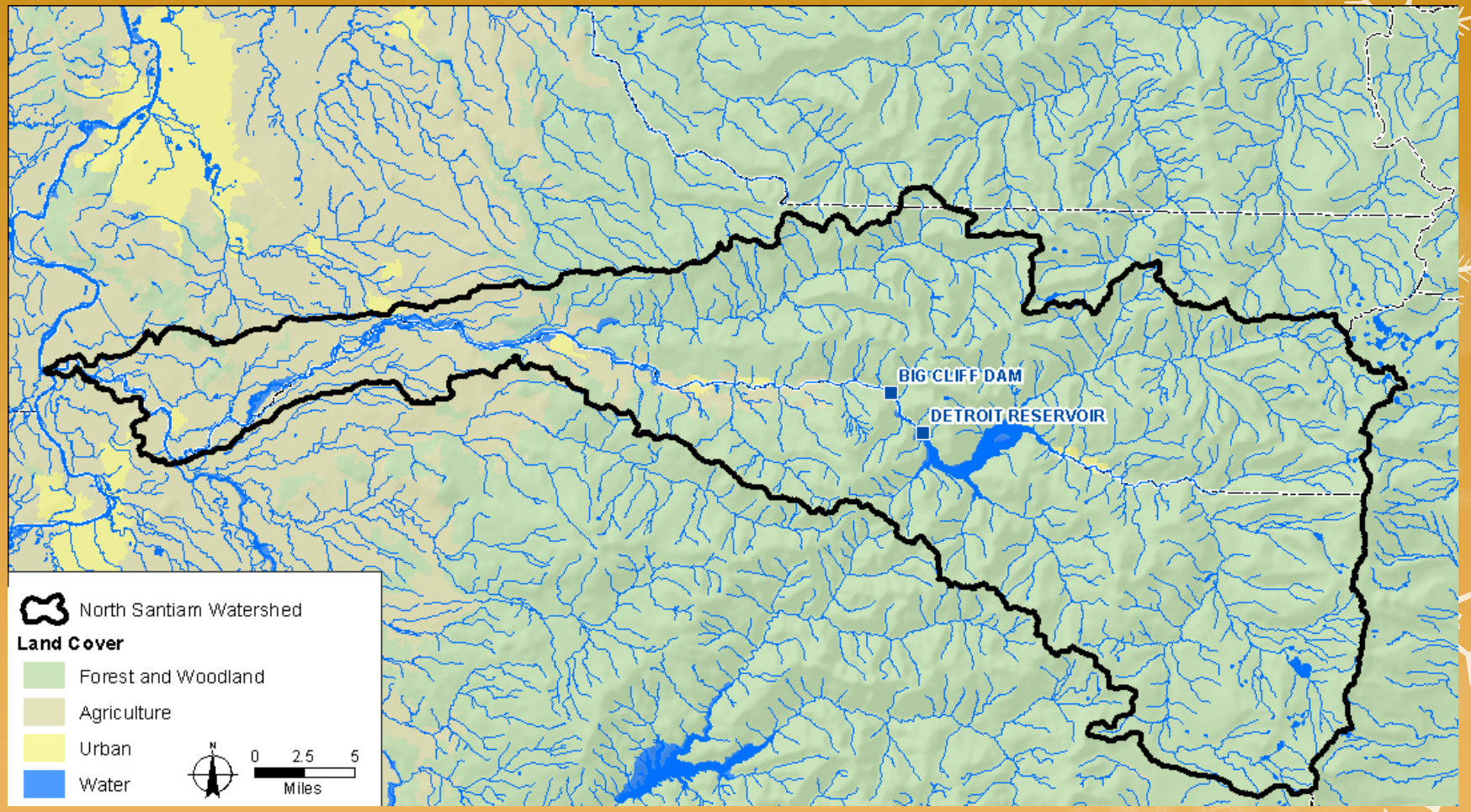
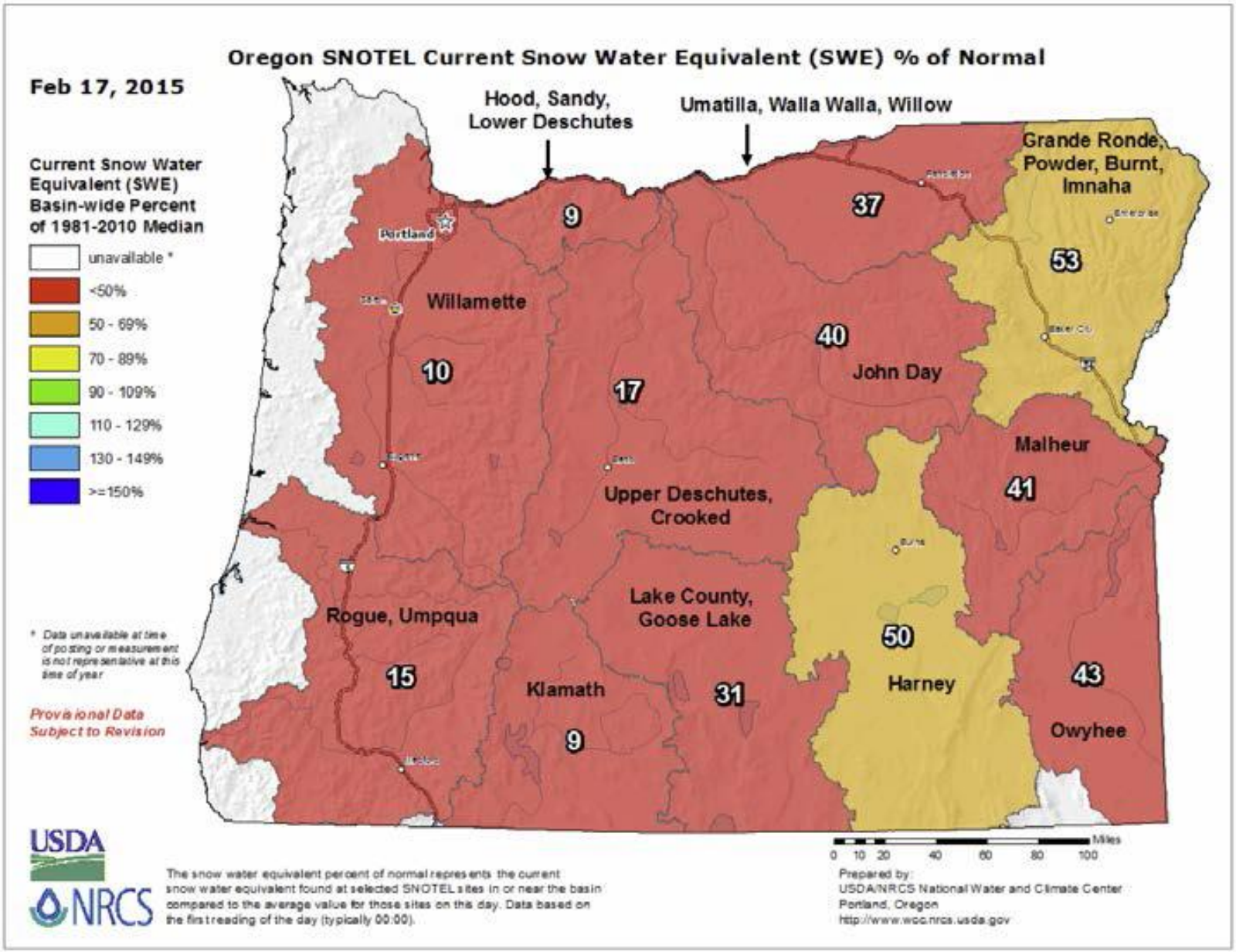
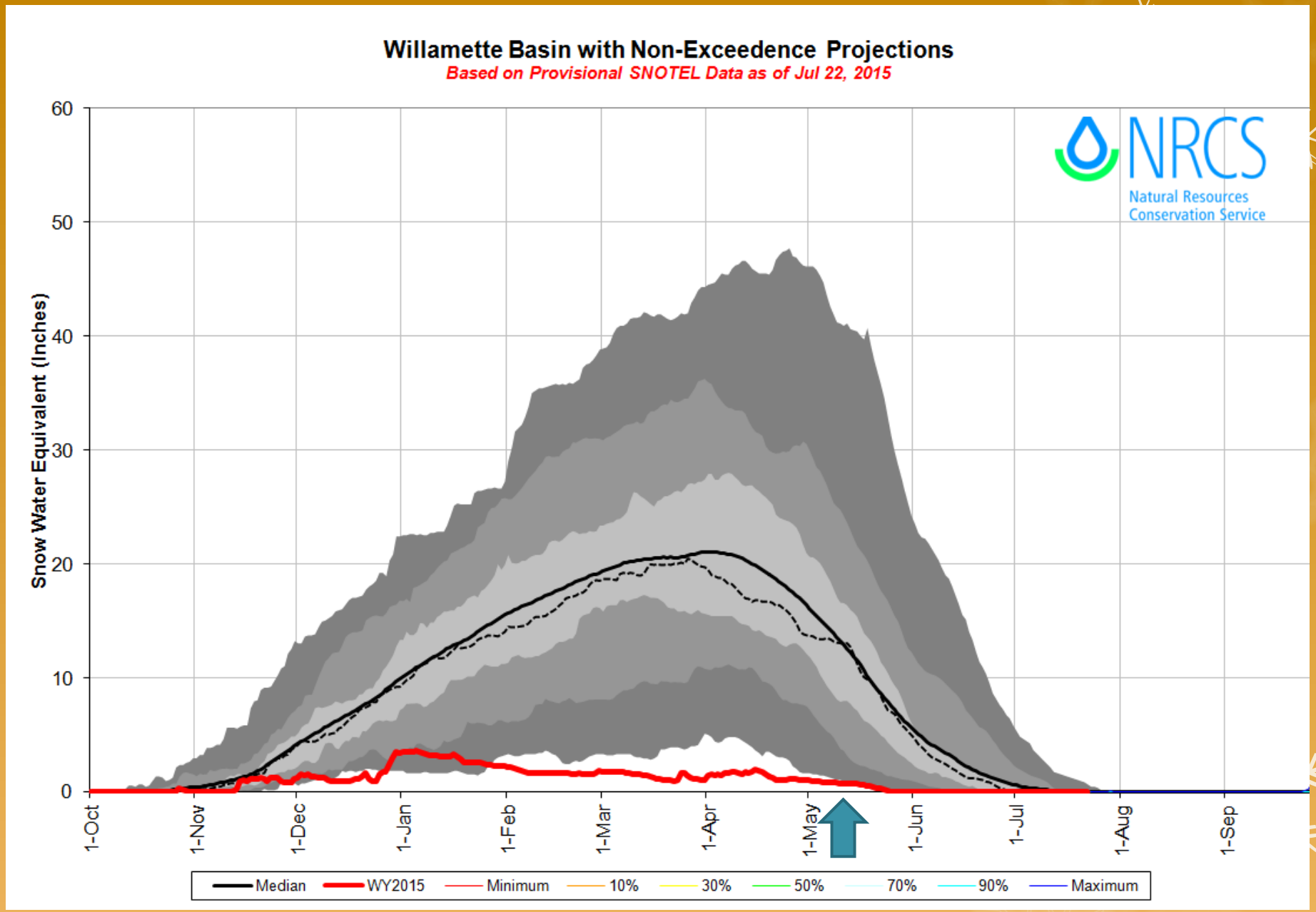
North Santiam Watershed Drought Contingency Plan



Factors leading to the application

- We had been holding annual basin summits focused on emergency spill planning and our group had identified water supply as an area of specific concern.
- The Willamette system of reservoirs is under operational control of the federal government.
- Many of us were following conditions in California.
- And


Oregon SNOTEL Current Snow Water Equivalent (SWE) % of Normal
Feb 17, 2015
Current Snow Water Equivalent (SWE) Basin-wide Percent of 1981-2010 Median
unavailable *
<50%
50 - 69%
70 - 89%
90 - 109%
110 - 129%
130 - 149%
>=150%
* Data unavailable at time of posting or measurement is not representative at this time of year
Provisional Data Subject to Revision
Hood, Sandy, Lower Deschutes
Umatilla, Walla Walla, Willow
Grande Ronde, Powder, Burnt, Imnaha
Willamette
John Day
Malheur
Upper Deschutes, Crooked
Lake County, Goose Lake
Rogue, Umpqua
Klamath
Harney
Owyhee
9
37
53
10
17
40
41
15
31
50
43
9
Portland
Miles
0 10 20 40 60 80 100
USDA
NRCS
The snow water equivalent percent of normal represents the current snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).
Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
http://www.wcc.nrcs.usda.gov


Willamette Basin with Non-Exceedence Projections
Based on Provisional SNOTEL Data as of Jul 22, 2015
NRCS
Natural Resources
Conservation Service
Snow Water Equivalent (Inches)
60
50
40
30
20
10
0
1-Oct
1-Nov
1-Dec
1-Jan
1-Feb
1-Mar
1-Apr
1-May
1-Jun
1-Jul
1-Aug
1-Sep
Median
WY2015
Minimum
10%
30%
50%
70%
90%
Maximum

May 11th 2015
Bureau of Reclamation Releases Two Funding Opportunity Announcements to Promote Drought Contingency Planning and Resiliency Projects

June 25th 2015
Applications Due

August 12th 2015
Santiam Water Control District
notified it was one of 11 recipients nationwide
Total Estimated Project Cost Awarded $399,080.00

Sept 22nd 2015
grant agreement signed
Total approved Project Cost $317,266.00
50% Recipient $158,633.00
50% Reclamation $158,633.00

May 11th 2015
Announcement

June 25th 2015
Applications Due

August 12th 2015
Award

Sept 3rd 2015
Marion Co. declares drought

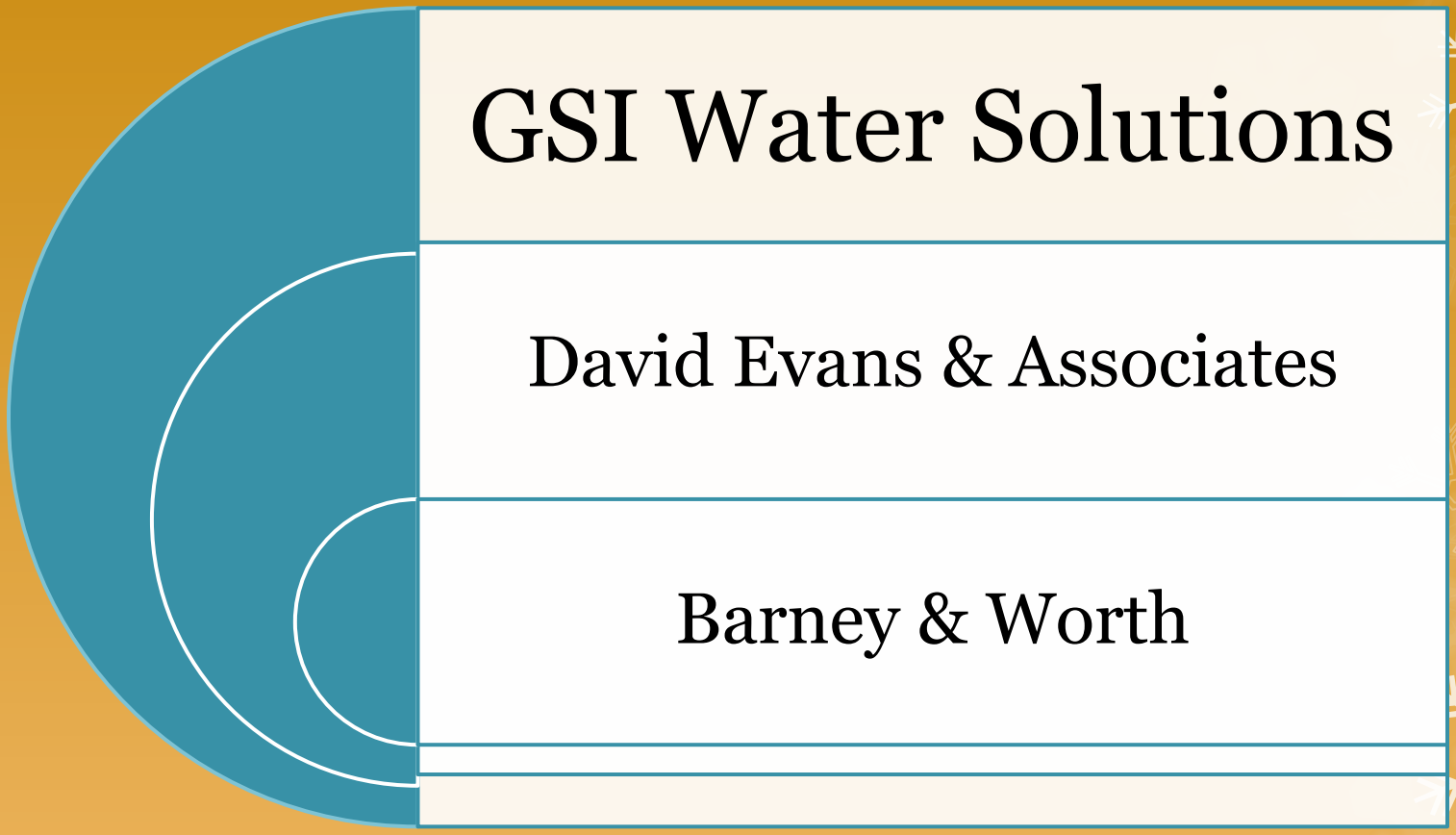
Sept 22nd 2015
signed

Sept 18th 215
Gov. Declares Marion Co.

Cost Share Partnership

- Santiam Water Control District APPLICANT
- North Santiam Watershed Council
- City of Salem
- Marion County
- City of Stayton
- Linn Soil & Water Conservation District
- Marion Soil & Water Conservation District
- Norpac Foods, Inc.
- Oregon Department of Agriculture
- Oregon Department of Environmental Quality
- Oregon Department of Forestry
- Stayton Fire

Contractors and Sub-contractors



Drought Contingency Plan (DCP) Key Requirements

Establish a Task Force

Develop a work plan to be approved by BOR

We chose a workgroup approach

All Plans must address 6 key items

1. Drought Monitoring (predict, recognize, plan for and respond)
2. Vulnerability Assessment (risks and impacts)
3. Mitigation Actions (mitigate risks and impacts before drought)
4. Response Actions (reduce impacts during drought)
5. Operational and Administrative Framework (roles and responsibilities)
6. Plan Update Process (ensure plan stays current

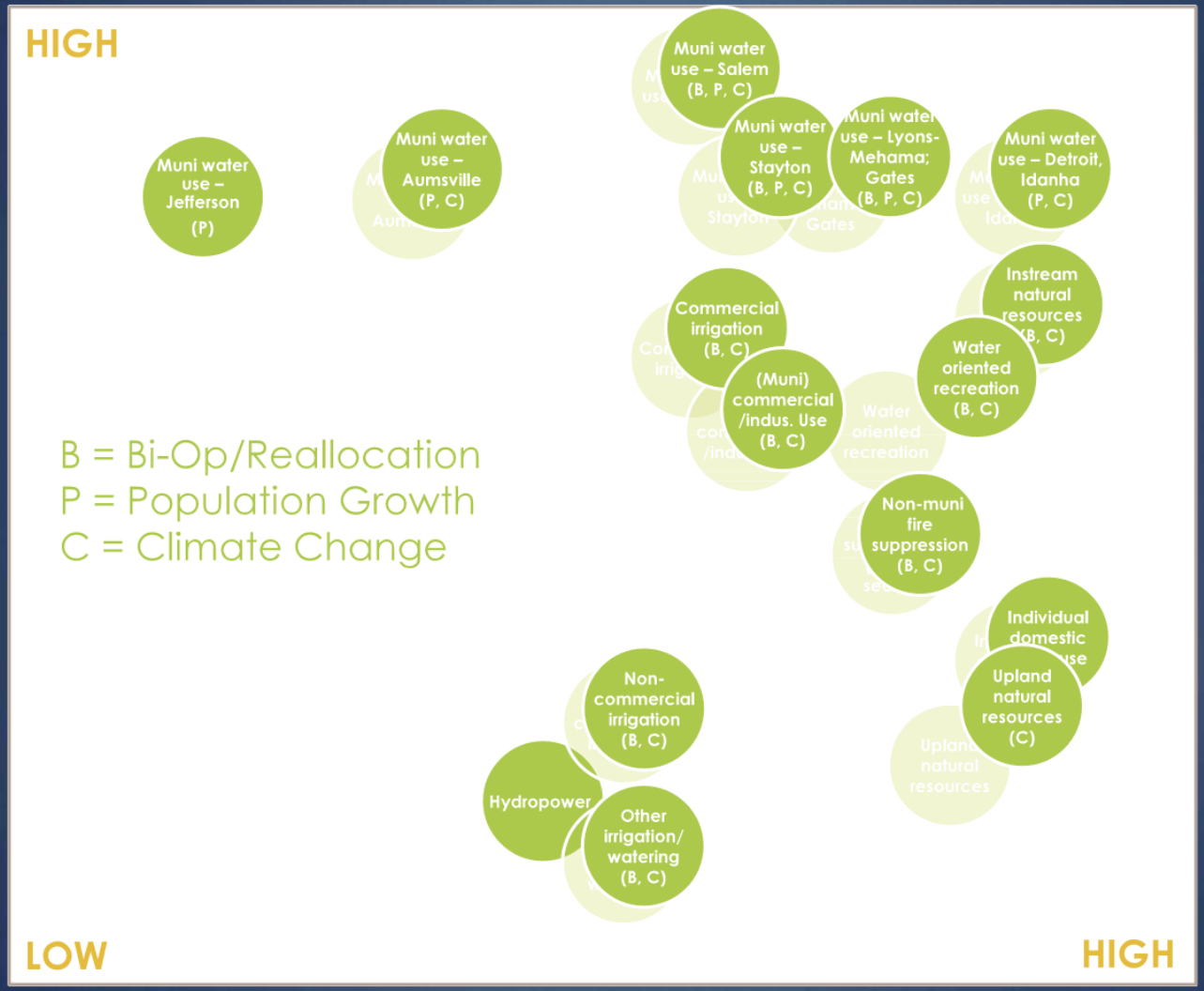
Indicators and Indices

NSW Drought Stage		National Indices	NSW Climate Indicators		NSW Hydrologic Indicators				NSW Environmental Indicator	
Enter reporting month (MM/YYYY) ***Below enter reporting day (MM/DD/YYYY)***		US Drought Monitor (Weekly Update)	Air Temperatures (1 month departure from normal, oF)	Precip. (% of Normal for Water Year)	Snow Pack (% normal SWE)	Detroit Reservoir (Percent above water control diagram)	USGS 7-day Flow (drought), N. Santiam @ Mehama (Class, Percentile)	USGS 7-day Flow (drought), N. Santiam @ Below Boulder Creek (Class, Percentile)	Stream Water Temp, N. Santiam @ Greens Bridge near Jefferson (oC above TMDL threshold, Sept 1 – June 15 = 13.0oC June 16 – Aug 31 = 16.0oC)	Wildfire Hazard (ODF/National Fire Danger Rating System)
July-16	***Indicator Monitoring Period***	***All Year***	***All Year***	***All Year***	***Dec 1 – June 1***	***All Year***	***All Year***	***All Year***	***All Year***	***All Year***
7/27/2016	***Definition/Possible Impacts***	D0	-2.7	102	NA	-23	56.86	20.96	2.7	Moderate
(Stage 1) Heads Up –Potential for Drought	Current conditions (e.g., low snowpack) point to the potential for upcoming drought conditions.	**DO**	**0 to 2**	80 to 71	70 to 61	-3 to -10	Below Normal (24 to 10)	**Below Normal (24 to 10)**	-1.0 to 0.0	Low
(Stage 2) Moderate Drought	Some damage to crops, pastures Streams, reservoirs, or wells low. Some water shortages developing or imminent Voluntary water-use restrictions may be requested	D1	2 to 4	70 to 61	60 to 51	**-11 to -30**	Moderate Hydrologic Drought (9 to 6)	Moderate Hydrologic Drought (9 to 6)	1.1 to 2.0	**Moderate**
(Stage 3) Severe Drought	Crop or pasture losses likely Water shortages common Water restrictions imposed	D2	4 to 6	60 to 41	50 to 21	-31 to -50	Severe Hydrologic Drought (<=5)	Severe Hydrologic Drought (<=5)	**2.1 to 4.0**	High
(Stage 4) Extreme Drought	Widespread crop/pasture losses Shortages of water in reservoirs, streams, and wells creating water emergencies	D3 or 4	6 or greater	40 or less	20 or less	-51 or less	Extreme hydrologic drought (New low)	Extreme hydrologic drought (New low)	4.1 or greater	Very high or Extreme

Note: Indicator headings are hyperlinked to open a brower window to the appropriate website. Hovering over each indicator heading will provide instructions for gathering the relevant information from the associa

Drought Contingency Planning – Vulnerability Assessment

Future Conditions – Revised 5/26



Consequences:

- Public health and welfare
- Economic impact
- Watershed health

Sensitivity:

- Is there a backup water supply?
- Is there adaptability?
- Is it (assumed) important to the public?

Current and Future Vulnerabilities

Current Vulnerabilities

- Endangered Species Act
- Infrastructure constraints
- Insufficient instream flow or reduction in stored water releases

Future Vulnerabilities

- Water right regulation
- Protected Stored Water Releases
- Conversion of Minimum Perennial Streamflows
- Climate change

My parting thoughts

- We determined we would like consistent messaging in the basin
- We need proactive not only reactive drought tools
- We should remove the political issues related to drought declaration
- Defining Drought can be difficult
- In order to leverage federal funds we must be nimbal and prepared.
- State funding for basin plans is extremely important