



Meeting Notes

Project: **Washington State Drought Contingency Plan**

Subject: Agriculture Stakeholder Meeting

Date: Wednesday, July 27, 2016

Location: Department of Ecology, Union Gap, WA

Attendees:	Jeff Marti, Ecology	Jaclyn Hancock, Agriculture
	Nick Bond, OWSC- UW	Andrew Graham (Facilitator), HDR
	Karin Bumbaco, OWSC- UW	Sarah Pistorese, HDR
	Jon Culp, WSCC	Tom Ring, Yakama Nation
	Barb Anderson, Ecology	Troy Peters, WSU
	Scott Revell, Roza Irrigation District	Lee Hemmer, Forest Creek CD
	Urban Eberhart, Kittitas Reclamation District	District
	Jim Bucknell, RH2	Dave Fisher, Bureau of Indian Affairs
	Mark Moore, Kittitas County CD	Gregory McKnight, DOH (phone)
	Lawrence Nelson, Wapato Irrigation Project	Ginny Stern, DOH (phone)
	Susan Crawford, Reclamation	Stephen Jilk, Whatcom County PUD (phone)
	Stuart Crane, Yakama Nation	Mike Hagerman, Walla Walla CD (phone)
	Dave Fenn, Lewis County CD	Cyndi Soliz, Underwood CD (phone)
	Ranie Haas, Washington State Tree Fruit Association	
	Henry Bierlink, Washington Red Raspberry Commission (phone)	

Handouts

- Agenda

Purpose and Background for State Drought Contingency Plan Update

- The most recent adopted State Drought Contingency Plan (DCP) was issued in 1992. An update was drafted in 2005 but was not formally adopted by the State. There are differences between the protocol outlined in the 1992 and 2005 DCPs and actual actions taken during a drought. Ecology and its state-agency partners want to update the DCP to reflect actual response actions needed, and to be more action-oriented. This will provide guidance to State agency staff prior to and during the next drought even if they have not been involved in drought relief previously.
- The DCP update will consider opportunities to improve response time, such as improving forecasting methods and establishing pre-staged agreements and forms. The DCP update will also involve developing a communication plan for drought response.



- Ecology is updating the DCP using a WaterSmart grant from the U.S. Bureau of Reclamation (Reclamation). Ecology will submit the updated DCP to Reclamation by July 2017.

Grant Requirements for Updating Drought Contingency Plan

- Reclamation's WaterSmart grant requires that the DCP include the following elements:
 - Establish a process for monitoring drought conditions
 - Conduct a vulnerability assessment
 - Identify mitigation actions (actions prior to a drought)
 - Identify response actions (actions during a drought to alleviate impacts)
 - Develop an operational and administrative framework
 - Develop a process and schedule for updating the DCP
- Based on past drought experiences, Ecology has also added development of a communication plan to the elements included in this DCP update.

Approach and Schedule

- Ecology began the DCP update process in March with the first meeting of the DCP Task Force. The DCP Task Force is composed of State agencies with drought-related responsibilities. The Task Force members are involved in updating the DCP.
- Ecology has also established an Advisory Committee composed of representatives from the different sectors impacted by drought (municipal water supply, agriculture, and fisheries). The Advisory Committee will provide input throughout the development of the DCP. Once complete, the Advisory Committee will review and provide comments on the draft DCP.
- Ecology aims to have a draft plan completed by early 2017 and the final plan completed by mid-2017.

How the agriculture industry experiences drought

Importance of water supply forecasting to agriculture industry

- There is interest in long-term climate outlooks. Additional storage would provide a long-term solution to mitigate future changes in water supply and stream flow.
- Scott Revell, Roza, said that water supply forecasts can be unreliable. In 2015, water supply declined rapidly. Over about a 6 week period, the forecast for available water supply for proratable users in the Yakima River basin declined from 73 percent to 44 percent.
- Earlier forecasts may be unreliable, since a single storm system can greatly change snowpack conditions and projected water supply.
- Earlier forecasts would also allow farmers greater flexibility in responding to drought conditions.
- Jeff Marti, Ecology, noted that earlier forecasts allow the State to mobilize resources early. Even a few weeks early can improve response. The State Climate Office is evaluating improvements in forecasting tools.

- The agriculture stakeholder representatives agreed that earlier water forecasts would be helpful. Forecasts may not be very accurate early in the year, but it would still be helpful to have an estimated worst-case scenario. It could be useful to have a rolling probabilistic forecast. This would allow water users, regulators, and suppliers to begin planning for potential drought conditions early.
- Commercial farmers in Lewis County use irrigation. The streams and wells that provide their water are not controlled by snowpack.
- In northwestern Washington, crops include berries, dairy, hay and seed crops. Emergency wells are an important fallback during drought. Hydraulic continuity of wells with local streams tends to be an issue.

Perspective on existing state drought toolbox (e.g., expedited permitting, grants)

- Roza used several water management strategies and tools to respond to the 2015 droughts:
 - Roza shut down their canal for several weeks in early summer to save water for late-summer crops.
 - Roza leased additional water, but was not able to lease as much as desired. This is largely because Roza did not begin leasing water until early summer, since water availability forecasts were much higher in early spring; then declined rapidly by early summer.
 - Roza received a temporary emergency water right from Ecology.
 - Roza also received emergency drought funds from Ecology.
 - Laying the groundwork for emergency wells about 30 days earlier would have been beneficial.
- In the Yakima Basin, irrigation early in the year before Reclamation’s system goes on “storage control” can recharge shallow aquifers and provide a form of water storage for stream flows. It’s beneficial to get as much water into the ground as possible before storage control; and then be very efficient with water during the storage control period.
- The DCP should consider the process for going into and coming out of a drought declaration. It would be helpful to gradually ramp up or down during a drought.
- Lawrence Nelson, Wapato Irrigation Project, said that communication is key for successful response during drought. Scott Revell, Roza, said that Ecology and Reclamation did a good job of communicating with water users during the 2015 drought.
- On the WIP they serve reservation lands and fee lands. Reservation law, federal law and state law all come into play.
- Urban Eberhart felt the State’s revocation of the drought declaration in December 2015 should not have been done. It was in response to the short-term “atmospheric river” that affected the state at that time. By spring 2016 it was clear that drought conditions continued in Kittitas County, although less severe than 2015. Reclamation is prorationing the water supply, and tributary streams without storage are suffering from very low flows.

- Snowpack is critical to many farmers, but the snowpack conditions are changing and the State may need to change its rules to adapt. For example, it may be important to begin irrigating earlier in the spring, but water rights have a fixed start date.
- Education is important for improving water supply. In particular, farmers would benefit from education about efficiency measures, such as irrigation scheduling and planning for evapotranspiration.
- Irrigation efficiency technologies are important for improving water supply. For example, variable frequency drives on pumped irrigation systems improve system operations and water supply. This can lift efficiencies and enable drip irrigation to be used. Technology like processors that can adjust irrigation applications in response to real-time, site-specific soil moisture, humidity, and temperature data would be very valuable, but farmers do not currently know enough about these technologies to put them to use. Dave Fenn said that Lewis County Conservation District has been implementing moisture sensors and providing training for farmers. Jon Culp, WSCC, noted that western Washington agriculture is not as reliant on irrigation. So western farmers do not get as much payback from investing in irrigation system efficiency technology. Education about water management efficiency would be more valuable for many west-side farmers.
- In Oregon, the Oregon Energy Trust provides rebates for efficient sprinkler heads on farm irrigation systems.
- NRCS provides assistance with micro-sprayer technology.
- Water banking can be an important tool.
- With climate change, droughts will likely become more frequent. The DCP should consider a toolkit that can be used for any type of drought (low snowpack, dry summer, etc.).

Availability of other resources (e.g., crop insurance)

- Crop insurance is useful for wheat farmers, but not permanent crop farmers. The insurance is very expensive for tree crop farmers. The State could help by paying crop insurance deductibles.

Dryland vs irrigated agriculture

- Western Washington agriculture differs from eastern Washington agriculture. The DCP should consider the differences in western and eastern Washington agriculture. Water supply conditions and response measures will be different depending on the type of agriculture.
- During drought, dryland farmers cope with drought in the following ways:
 - Avoid tilling fields to help retain soil moisture.
 - Leave previous crop stubble standing to slow snow melt.
 - Plant seeds for winter wheat later in the fall.
- Monitoring aquifer levels would help farmers that have ground water supplies to make better decisions about how to use the ground water. This is an area where state assistance could help.



- Groundwater levels are also important for managing livestock. During drought years, water availability in lakes declines. The water remaining in lakes has an increased pH. As a result, livestock are not able to drink the lake water. So livestock managers depend on groundwater supplies. This will require drilling new deeper wells to prepare for future droughts. Lee Hemmer said that Forest Creek Conservation District is currently monitoring potential new well locations.
- Dryland farmers have also put in dams on local creeks to slow runoff and increase groundwater infiltration.

Coping with prior-appropriation doctrine

- In the Yakima River basin, there is 1 million acre-feet of storage and 2.2 million acre-feet of demand. Snowpack is essential for supplying the difference. Opportunities to increase water supply will be important for planning for future droughts.
- Water rights are often constrained to the season of use. There are opportunities to modify how the agriculture sector manages water during off-seasons. For example, in 2016, snowpack melted quickly. In response, Kittitas Reclamation District (KRD) flooded their fields in early April to help capture some of the rapid runoff. This allowed water from the Yakima River, that would have passed through the system unused, to be temporarily stored through groundwater recharge. That water will naturally return to the river in mid/late-summer, when it can be put to beneficial use. KRD is looking at opportunities to do recharge in February and March. However, this is outside of KRD's water right season of use. Ecology will be evaluating the potential for using winter/early-spring passive groundwater recharge to increase overall water availability in the Yakima River basin.

Further opportunities for input

- State financial support is often available to those districts that are able to cost match and that have made efforts to improve system efficiency.
- Many of the large irrigation districts, such as Wapato Irrigation Project and Kennewick Irrigation District, have drought plans in place. Others find that each drought is different and requires a different response, so a drought plan is not as useful as one might expect.

Next Steps

- Stakeholders will be able to review and comment on the draft DCP during the comment period in spring 2017.
- Stakeholders can also contact the Advisory Committee or Task Force members to provide input.
- Jeff Marti said that the agendas and meeting notes for all Task Force and Stakeholder Group meetings will be posted on the DCP update website. Jeff will send out the link to this website.

Action Items



Who	What	By When
J.Marti	Send out the link to the DCP Meeting Notes	Aug 31