

## APPROVED DRMT Zoom Meeting Notes July 8, 2021

Prepared by Shawn Hines, Jamestown S'Klallam Tribe

**DRMT Members Present:** Hansi Hals/Jamestown S'Klallam Tribe, Ann Soule/City of Sequim, Ben Smith/Dungeness Water Users Association, Shawn Hines/JST, Judy Larson, Protect the Peninsula's Future, Tom Martin/Clallam PUD, Danielle Zitomer/WDFW

**Others Present:** Kim Williams/Clallam Conservation District, Karen Affeld/NODC, Joel Green/Streamkeepers, Carol Creasey/Clallam County, Bob Simmons/WSU Extension, Jolyne Lea/NRCS, Karen Affeld/NODC, Nicole Gutierrez/WWT, Kim Williams/Conservation District, Phil Martin/resident

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### I. Introductions/Approval of Notes

Hansi called meeting to order, introductions were made, and DRMT reviewed previous three meeting notes.

- Ben moved and Ann seconded approval of April notes as presented. Danielle abstained, as she was not present at April meeting. Ben moved and Cathy seconded approval of May notes as presented. Ben moved and Ann seconded approval of June notes as amended (to include Danielle and Bob Phreaner as present at June meeting). Cathy abstained, as she was not present at June meeting. All notes otherwise passed unanimously.

Public Comment

- Ben announced that Kim Williams, new District Manager at Clallam Conservation District, was present at today's meeting and welcomed her to the District and to the DRMT.

### II. Phase 2: Municipal Level Climate Action Planning for the North Olympic Peninsula, Karen Affeld, NODC

- NODC is the regional economic development district for Clallam and Jefferson Counties. Primary role is regional economic development planning, every five years. Support economic development in key sectors identified in those strategies. Also support development of economic infrastructures in the region and conduct projects that fill gaps.
- Economic resiliency relies entirely on environmental resiliency, which is why NODC is involved in climate change planning. Merged the old economic development district (Peninsula Development Association) with the old North Olympic Peninsula Resource and Development Council (a Natural Resources conservation district). NODC prioritizes both the economy and natural resources.
- Karen reviewed previous climate change planning effort and plans from 2014-15, which can still be found on their website. They realized more was needed, and barriers to implementation (lack of capacity, lack of tools to move things forward). Thus Phase 2 began in 2017 to secure funding to move things forward. Grant from NEP for regional climate change planning work, building on the work from previous effort. Intended result is further implementation of the recommendations of the 2015 report as well as consideration of mitigation. Hired Cascadia as consultant, will begin work later this month.
- Project goals: work with local govts and stakeholders to establish regional climate change adaption and/or mitigation goals. Will create toolbox for local govts, which will be on NODC website. Assist govts with their own plans. Will work with four govts.
- Current NODC members listed in Powerpoint, which Karen provided as attachment (Shawn sent to DRMT via email).
- Questions:
  - If more than four govts are interested in assistance, is there possibility that more can participate? *Cascadia will be working on a process for if this happens. Haven't made firm decision yet on whether more can participate with fewer dollars, or keep it to four.*
  - Timeline? *Possibly starting with local govts early next year if doing linearly, or if doing in parallel – then possibly this fall.*
  - Hansi recognized the importance of climate change planning work, especially following the recent heat wave, and noted DRMT looks forward to future updates on the project.

### III. Dungeness Off-Channel Reservoir Update, Carol Creasey, Clallam County and Nicole Guturuz, WWT

- Carol introduced the project as one solution to climate change in our area.
- Partners listed in PowerPoint provided by Carol (Shawn sent to DRMT via email).
- Project located on DNR property south of the City of Sequim. Two parcels. 319 acres, the northern part of which will have the reservoir. East of that parcel is 77 acres that will hold an infiltration facility. See map in presentation.
- Four components of project: 1) Reservoir, 2) Highland Irrigation Ditch will capture water from River and bring to reservoir, 3) overland flow and infiltration, 4) Distribution system.
- Approach – construct 1600 acre-ft reservoir, provide alternative water source for east side irrigation diversions instead of river diversions during fish critical low flow period of August to September 15. Especially since the area is turning from snow dominant to rain dominant system. Alternative to the snowpack is the artificial reservoir of this project.

- Doesn't expand irrigation water rights. It's a source substitution. Will improve stream flows, side channel and floodplain habitat, reduce flood risk to city, increase aquifer recharge to smaller streams, provide sustainability to east side agriculture, climate resilience, public recreation. Contribute to a flow restoration goal of a minimum flow of 105cfs during average and wet years. Carol listed several other project benefits.
- Project status: Land Acquisition – signed letter of intent April 2020, appraisal, land use license through DNR June 2020 (necessary prior to conducting assessments), multiple assessments.
- Assessments: Preliminary Wetland, Seismic/Geohazards, Phase 1 and 2-ESA (for contaminants), Cultural Resources (David Brownell at JST helped select firm, went out on site, reviewed report, included 81 shovel probes, no cultural resources observed; an archeologist will be onsite during construction for further observation)
- Following assessments, appraisal of the project site (DNR property) moved forward. Expected end of July.
- Funding 2020/2021: PSAR, SRA, NOAA, FbD, FEMA BRIC, FEMA HMP, PL-566, Irrigation Efficiencies, Appropriations (requests to both state and federal levels)
- Project estimate: \$32-33 million. Have about 25% in hand.
- Ann Soule discussed the Infiltration element of the project (see slide labeled FEMA Hazard Mitigation Grant). State Emergency Mgt Division, City is sub-applicant to that; helping to alleviate stormwater problems in the City of Sequim, even though overall project is County; City took the lead on this aspect. Overland flow coming off of Burn Hill will be captured, conveyed downhill from East to West into an infiltration area to the East of the reservoir.
- Potential funding schedule 2021: 1-RCPP, 2-Economic Recovery Funding, 3-FEMA BRIC, 4-Conservatin Irrigation Efficiency, 5-Bureau of Reclamation, 6-Other?
- Design: hired design firm. Anchor QEA selected. Phasing the components of the design. First Phase/preliminary 30% design: should be complete end of 4<sup>th</sup> quarter 2021. 100% design: should be completed Quarter 4 2022, depending on Ecology safety board. Will meet with commissioners and with public before final design.
- Ben discussed the 30% design completed on the discharge portion of the reservoir.
- Ben noted that 15 to 20 cfs is the current amount of water the east side irrigators are using during that time of season, that last 30-45 days. So that would be the amount saved. Carol said Anchor will be checking all that out.
- Nicole Gutierrez discussed reservoir water sources, modeling fill and drain cycles for the reservoir. Nicole said they were posed with the following questions: how will the reservoir be filled, where will it come from, and how much water are we talking about. Can be characterized by 3 pots of water:
  - 1- Max allocation water – water that is above the Dungeness Instream flow rule; during times of high flows, can capture some of the water for the reservoir
  - 2- water right water – from irrigator water rights; though more complicated
  - 3- overland flow – could also be captured in the reservoir
- Data sources and parameters that can be used to estimate accumulation of the water: USGS gage/Dungeness flows (2000-2020), irrigator outtake reports from East side diverters (2006-2019), overland flow calculated from 2015 report, instream flow rule, and evaporation. Used all of this info in a model.
- Showed examples of model outputs. Reservoir fill timeframe Nov 15 to July 14 (when max allocation water is available). Shows accumulation of water over time. Two different scenarios shown of diversion capacity. 15cfs and 25cfs. 15cfs is what is currently diverted from Highland. In the 2015 drought year, could hypothetically have filled twice with diversion, max allocation, and overland flow. Dotted lines represent full reservoir. Upper dotted line represents two fills (see Powerpoint). Showed several model scenarios.
- Project Objectives 2021/2022
  - **Land Acquisition**
    - Appraisal completed (Q3)
    - Land acquisition finalized (Q4)
  - **Funding**
    - Funding applications (Ongoing)
  - **Reservoir Design**
    - Hiring design firm (Q3)
    - 30% Design (Q4)
    - 100% Final Design (Q4 of 2022)
  - **Water Sources**
    - Reservoir Fill Modelling (Ongoing)
    - Review and Permission (Ongoing)
  - **Outreach**
    - Letters of Support
    - Legislative Lobbying
    - Reservoir Website
    - Outreach Materials
    - Media- as needed
    - Community outreach - talks, meetings, community events
    - Public Comment - 30% Design

Questions:

Judy: Acquisition/DNR/Environmental assessment – could Lidar be done? Could Sequim pick up any costs regarding the costs associated with the dump? Regarding irrigation systems, some of the flooding was further east of where the site is, so that is a flood concern. Overall design – how much has changed since the original design, and what were the reasons? Is Sequim Ranney well /infiltration gallery affected by any of these diversions from the Reservoir?

Carol – that is why we had assessments done; wanted to be able to negotiate with DNR so that they would either clean up or give us the money to clean up. So far, things are mostly clean. Minor contamination.

Ben – the problem with Sporseen site is our canal is currently maxed out during storm; so, goal is to drain canal through Ann’s project at Sporseen, so will have empty canal to handle all eastern portions of flooding. Not seeing any effect on Rainy gallery. Ann agreed.

Carol – RE design changes – as soon as we get design firm working, they will look at all info that has been generated so far, conceptual design. 5 alternatives. In next couple of months will determine if there will be any major changes or not.

#### IV. NRCS Snow Surveys and Water Supply Forecasting, Jolyne Lea, Hydrologist, USDA NRCS

Jolyne presenting in place of Scott Pattee, Washington State Water Supply Specialist. Ppt sent to DRMT via email. Created website, link provided in below slide:

The image shows a screenshot of the Washington NRCS Snow Survey Page. On the left side, there is a blue vertical box with the text "Washington NRCS Snow Survey Page" and the URL <https://www.nrcs.usda.gov/wps/portal/nrcs/main/wa/snow/>. Below the URL, three red arrows point from text labels to specific sections of the website: "Snow data & information" points to the "Snow & Precipitation" section, "Water Supply Information" points to the "Water Supply" section, and "Interactive Map Links" points to the "Interactive Map" section. The website itself is titled "Washington Snow Survey Program" and includes sections for "Snow Survey Data, Products, and Reports" and "Additional Snow Survey Information & Quick Links".

Three sections: Snow data and info: snow and precipitation, water supply, interactive maps. Interactive Map, on right side of page has all the filters: daily, water year, calendar year, different records, anomalies, etc. Can click on specific SNOTEL site for a variety of SNOTEL info, and can export info.

Jolyne does the water supply forecasting in spring for Dungeness. Showed various snow, climate, and streamflow stations for Dungeness. Most correlated stations are Waterhole, Deer Park, Dungeness and Mount Crag – for most accurate forecasting. Discussed SNOTEL stations. SNOTEL sites provide hourly data, can also record 15-minute data, snow depth, temp, wind speed, direction, SWE (weighs the snowpack at that location).

June 1 snowpack conditions were doing great in our area. 2021 Dungeness SNOTEL site – can see graphics available. We had above normal snowpack and slightly below normal precip. May and June were very warm, but storms were colder so most of the precip fell as snow.

Mt Crag SNOTEL – note there was an outage at one of the stations that collects data, so missing some data.

Waterhole, 5,000 feet – above normal snow, near average precip.

Can also look at “all years display” for snowpack. At Waterhole, in March, there was a new maximum.

Looked at Dungeness River near Sequim – daily discharge in Sequim.

June 1 Water Supply Forecasts – 93% of normal. That was because of the dryness in May, but still fairly close to average.

Water supply model: forecasting for water manager planning. Snowmelt from mountains, tells you amount of water you will have from April 1 thru July 31. Basically, the model is the amount of snow held in reservoir in the mountain, and how much you will see passing the gage. Use statistical regression equations. Predicted streamflow = snow on the ground + accumulated rainfall + streamflow (+sometimes other parameters such as soil moisture, springs, past year’s data, well levels, climate indices).

Dungeness River Forecast Info: interactive map. Can see all the parameters available, metadata, charts, tables, etc.

Forecast Products: Dungeness – June forecast is 63,000 acre feet, 93% of average. But with error bars.

This next year moving to New Averages/Medians for 2022:

### New Averages/Medians for 2022

- Every 10 years the “normal” period that is used by federal agencies and international groups moves to the most current 30 years. This is a standard set by the United Nations World Meteorological Organization (WMO).
- Next year we, among many organizations, will be moving our references to use the average and median calculations to the 1991-2020 period.

### Snowpack and Streamflow Median and Average

- Median and Average terms both describe the conditions compared to normal conditions. The NRCS primarily uses median, but average values are available.
- Average is a sum of the values for that day or month divided by the number of values that are in the period of time being referenced.
- Median is the center of the range of the values for that time period. It is especially useful for determining normal for the beginning and end of the snowpack.

Some areas will be very different when we drop off the 1980s measurements and add the 2010s. Jolyne did some calculations to see if that would be the case for Olympics. Found out that actually there was very little difference:

SWE Inches	March	April	May
1981-2010 Old Median	10.55	11.70	16.70
1991-2020 New Median	10.80	11.70	16.10

Also very little change with forecasts. New ones are almost identical (old average vs new average).

### New Normals for The Dungeness River Forecast

1981-2010 Old Average and Median (KAF = 1000 Acre-Feet)

	Average	Median
April – July	120 KAF	114 KAF
April – September	145 KAF	135 KAF

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1990-2020 **NEW** Average and Median (KAF = 1000 Acre-Feet)

	Average	Median
April – July	121 KAF	118 KAF
April – September	145 KAF	139 KAF

### The Changing Climate

- A warmer climate will reduce the water stored in the snowpack reservoir. This is dependent on the regional and elevational characteristics of watersheds.
- Changes in the snowpack, especially reductions, would potentially impact the accuracy of statistical models.
- Rainfall changes are usually less correlated to spring and summer streamflow since runoff occurs immediately after the event.
- More streamflow volume runoff could occur earlier in the year, before spring and summer needs.
- This can lead to reduced forecast accuracy and more uncertainty.

- Please contact me or Scott Pattee if you have any questions:
- [Jolyne.lea@usda.gov](mailto:Jolyne.lea@usda.gov) or [Scott.Pattee@usda.gov](mailto:Scott.Pattee@usda.gov)

NRCS Washington Snow Survey webpage: (or google it!)

- <https://www.nrcs.usda.gov/wps/portal/nrcs/main/wa/snow/>

## Questions:

Joel Greene – will the new normal dates mask what is actually occurring?

Jolyne \_ used to use 20 year dataset, now 30 year dataset as of last couple of decades. One of the reason is the data set isn't that good back in 50s and 60s. If you want to compare historic, some use 50 year average. And update every 5 yrs. We use the most current 30 years to include new stations that have average. Also, you want to keep current, as far as comparing average to current climate. Want to know what is happening now, as compared to what we expect to happen.

Tom Martin – gather that changing climate will cause earlier rainfall, more streamflow in early spring with climate change, correct?

Jolyne: hard to predict. Climate experts say temp is a warning signal. Storms could come in cold, but still be in a climate warming environment. Amt of rain is still not well understood either. So could be getting more snow and more rain, or just more rain. We think with a warming environment there will be more rain, but think it will impact lower elevations more than on snow pack. But still not sure.

Tom – predictions are for the stream gage on Dungeness? What about downstream of gage? Assuming more streamflow earlier, would that increase recharge aquifers downstream, due to leakage?

Jolyne: Haven't looked at that, but it is possible. Have not predicted that rain will be increased. Instead, more of it coming as rain.

Ann Soule: when you talk about SF predictions/forecasts, can you walk us through where to get those numbers? Are the forecasts long term?

Jolyne: Water Supply section has the reports with streamflow forecasts. There's a report every month along with forecasts and graphics. Water supply outlook reports. ON Washington snow survey page, can link to water supply outlook reports. Usually forecast for a 3 month period. But can also change up time periods or add additional.

## Back to Qs about reservoir:

Joel: Infiltration area next to reservoir. Is part of the reason for infiltration to clean the water? Will it all go to infiltration before going into reservoir?

Carol: There will be a settling pond before the infiltration facility, and definitely before it reaches reservoir. Doing some water quality sampling. Not intending the infiltration water to go underneath and getting into reservoir. It will be lined.

Ben: if water quality is an issue, we will have to definitely use infiltration. Keeping options open depending on water quality.

Ann: Stormwater has a bad rap, because people thinks its automatically urban stormwater, which is whole different category of runoff than what we are talking about, which is rain water going over rural areas and forestland.

Judy: sometimes it's coming from Bell Hill where there are herbicides etc. on lawns.

Carol: have started sampling overland flow. Will do more expansive sampling.

## V. Standing Agenda Items

### *Project Updates:*

- Cathy: Phase 1, Dungeness levee project went out to bid. Due July 20. There will be one addendum. A trench for relocating utilities.
- Hansi: JST has awarded their construction contract for the River's Edge. They have broken dirt.

***Future Agenda Items:***

August – blank slate. What about field trip? Shawn said folks interested in seeing dike, but not possible during construction season. Possibly in fall.

Ben – could consider taking August off if September is solid. Many thought that sounded logical. Possible in person meeting in September, depending on construction, pandemic, etc.

Hansi – shellfish surveys post heat wave. Extreme low time at same time as extreme heat. Shellfish mortality extremely high across Puget Sound.

Please send Shawn or Execs any ideas for agenda items.

**Public Comment**

Hansi confirmed canceling August DRMT meeting, back in September. Location to be announced.

**Meeting Adjourned**