Comments Submitted 02/23/2023 by:

R. Randal Son

PII

Re: Project Name: Tiger-Mill Project
Responsible Official: Aaron Gagnon
District: Walla Walla Ranger District
Counties: Walla Walla, Wallowa, Umatilla, and Columbia
General Location: 13 miles east of Walla Walla, via Mill Creek Road
Management Areas: Management Areas A3, A4, A9, C1, C3, C4, C5, D2, E2, F2, F4
Anticipated Implementation Start: 2024-2025

I recognize the negative effects that a high severity fire within the Municipal Watershed (the Watershed) would produce. I support fire risk reduction, and access for suppression if needed, as long as the catchment's performance is not harmed.

The desired performance of the Watershed includes retention and release, as gradually as possible, of the rain and snow occurring on the 21,400 acres.

Watershed performance will change in response to trends in temperature and the form of precipitation.

From WW Water 2050 Final Plan:

"Projected snowpack decline for the Blue Mountains over the next 30 years is set between 40-50 percent.

As rain precipitation events replace snowfall, there will be less overall snowpack and an earlier snowmelt peak [97]. Average spring snowpack in Washington is projected to decline by 56 to 70 percent by the 2080s, relative to 1916-2006 [95]. The largest **declines in snowpack** levels are projected for mid-elevation basins (including the Walla Walla Watershed) that accumulate snow as 10-40 percent of their October-March precipitation

[95, 98]. Relative to 1970-1999 levels, the April 1 snow water equivalent (a measure of the total amount of water contained in the snowpack) for snow that feeds the Walla Walla River is expected to decrease by upwards of 66 percent by the 2040s and upwards of 89 percent by the 2080s [98]. This shift is expected to fundamentally change the ecology of Washington watersheds, with waterways once fed primarily by snowpack increasingly fed by a higher percentage of rain (see Figure 29 below) [95].

In addition, a higher rain-to-snow ratio in the Blue Mountains is expected to cause higher peak streamflows in late autumn and winter, leading to a predicted 30 percent increase in flood risk in some areas.

Finally, stewards in the forested headwater regions acknowledge gaps in our collective knowledge about the many factors that go into snow retention in the forest, finding themselves challenged when planning how best to manage the whole forest ecosystem to promote snowpack retention."

Furthermore, the Watershed is already performing at a reduced level.

From Title: Flow From Flexibility: Identifying Opportunities For Streamflow Restoration in a Transboundary Municipal Watershed
Jessica Serin Pierson for the degree of Master of Science in Geography ; June 8, 2018.

"Annual precipitation has not declined significantly since 1950. Over the period from 1940 to 2017, annual water yield declined by less than 0.01%, but August streamflow declined by 17% over the same period.

Median March streamflow was 122 cfs from 1940-1976, and 154 cfs from 1980-2016.
The Median August streamflow was 32 cfs from 1940-1976, and 27 cfs from 1980-2016."

The March median streamflow obscures **the increasing frequency of damaging freshets**. Flashy runoff and flood damage other than from the extreme events of Februaries '96 and '20 (6,000+ cfs) are a concern for local residents. In June '22, **1,800** cfs in Mill Creek still damaged properties, roadways, and bridges between the City intake and Kooskooskie.

Between 1987 and 1991, freshets rarely exceeded 500 cfs. From 1991 to 2002, peak freshets approached 1,000 cfs. Melt events produced flows near or over 2,000 cfs 13 times in the last 20 years. (USGS Gage Data, excluding '96 and '20 major events.)

Turbidity in runoff events constrains the use of the Aquifer Storage and Recovery system. Low summer flows contribute to the costly use of wells for meeting municipal demand.

With these trends in conditions and performance, Historic Range and Variability as a guide for landscape treatments is not sufficient.

From: The use of historical range and variability (HRV) in landscape management. Robert E. Keane a,*, Paul F. Hessburg b,1, Peter B. Landres c, Fred J. Swanson d,2; Forest Ecology and Management. 258: 1025-1037.

"To use HRV in an operational context, it must be assumed that the record of historical conditions more or less reflects the range of possible conditions for future landscapes; an assumption that we now know is overly simplistic because of documented climate change, exotic introductions, and human land use. While managers need to recognize the importance of using historical landscape dynamics as HRV reference conditions to ensure there is minimal loss of important landscape elements, **managers also need to evaluate if current management will be within acceptable and feasible bounds for potential future landscape conditions**. Looking both to the past and to the future will be essential for the future of land management. The most obvious action is to augment an HRV time series with an additional reference time series, we call FRV **(Future Range and Variation)**, which represents predicted characteristics of future landscapes and ecosystems. These FRV time series can be generated from complex climate sensitive landscape models that mechanistically simulate disturbance and vegetation developmental processes in a spatial domain (Bachelet et al., 2001; Keane et al., 2004)." (Emphasis mine – R.S.)

Landscape management within the Municipal Watershed as proposed is precedent-setting.

The acceptance by local decision-makers of the need to manage the Watershed landscape presents opportunities to mitigate risks other than fire. Some of these can be addressed with techniques on the ground as the proposed actions are implemented. For example, thinning and harvest woody debris can be managed to reduce runoff and increase water retention. (Of course soil compaction from actions must be completely mitigated.)

The proposed Research Natural Area consists of mostly north (and east) slopes that have the best chance of retaining snowpack if vegetation and tree management are successful. This pRNA needs clear goals and a long term monitoring commitment.

Further measures are outside the immediate scope of the Tiger-Mill Proposed Actions, but would be useful in meeting the obligation to ensure a healthy Watershed:

Determining the feasibility of check dams on Mill Creek upstream of the confluences of Low and Paradise Creeks should be undertaken by the various partner entities.

Monitoring how snowpack in the mid-elevations responds to various weather conditions, on various aspects, would provide useful data.

Tools for modeling how the Watershed landscape might respond to various management regimes and climate scenarios have been developed and should be utilized.

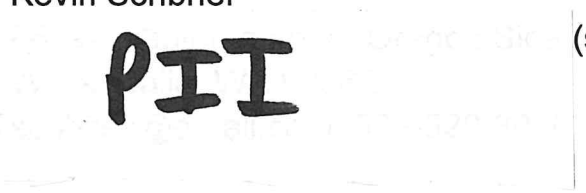
In Summary: Balance

Goals for and implementation of landscape management actions in the Watershed must strike a balance between Fire Risk Reduction, Water Supply Performance, and Flood Control.

From: Randal Son
To: Sciarrino, Joseph - FS, WA
Subject: [External Email]Joint Commenter
Date: Friday, February 24, 2023 11:44:12 AM

Could you add this info, Kevin would like to join in on the comments. Thanks!

Kevin Scribner



(since 1975)

~~~ Randal

Repair whatever small parts of earth that you can.
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