

Op-Ed | Nick Wilcox: Our Community's Water Future

by Nick Wilcox



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September 13, 2020 – On August 26th, technical reports were presented to the Nevada Irrigation District (NID) Directors which represent the most important documents that the Board will receive in a generation. The reports were written by HDR Engineering, a highly regarded firm that is recognized as experts in their field. The reports used publicly available data and peer reviewed models that are in the public domain that have been modified to address NID's infrastructure.

These documents consist of hydrology, demand, and water supply technical memoranda. Taken together, they will help NID make future water supply and demand projections so that as a community we can plan for our future. NID has been engaged in this type of planning effort since 1985 and now in light of updated municipal and agricultural demand assumptions, climate change and a changing regulatory environment, it is time to reexamine past conclusions.

NID has four sources of water supply. There is natural runoff from the watershed, carryover storage, purchased water and recycled water. Watershed runoff is highly variable and depends on annual precipitation. Precipitation is in turn impacted by climate change. The best available information indicates that total precipitation will not change greatly in the future but the timing and form in which it is received will. NID is a snowpack driven system. We rely heavily on snowpack to provide much of our early season irrigation demand. Later in the season, water stored in reservoirs during the previous spring, or in prior years, is used to meet municipal and agricultural demand. A reduced snowpack means that we must rely more heavily on water that has been physically stored in reservoirs.

The amount of recycled water is fixed in the future and depends on the outputs of the Nevada City and Grass Valley sewage treatment plants. Contract water purchases can be obtained from PG&E but in dry years they will likely be less available and therefore of diminishing importance in augmenting future supply.

Carryover storage is our second largest source of supply, and it is there that we must focus. Carryover storage is water stored in reservoirs from previous years that may be used for immediate demand or to provide environmental flow. The largest single impact on carryover storage is, in fact, environmental flows and not increased consumption.

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The environmental flows in question were negotiated through the Federal Energy Regulatory Commission (FERC) relicensing process. The South Yuba River Citizens League (SYRCL) and their allies at the Foothill Water Network (FWN), as well as certain State and Federal agencies, along with NID were the primary participants in that process. It is truly ironic that the higher instream flows required of NID can only realistically be met through the development of additional storage. These same organizations that fought for higher flows now fight tooth and nail against any attempt to augment new storage in NID's system.

Worse yet is the fact that these required environmental flows are roughly eight times higher in Wet, Above Normal and Below Normal water year types. This creates an impossible situation. When Dry, or Critically Dry years follow the wetter water year types the problem of reduced carryover storage is greatly exacerbated. The higher required flows in the wetter years make it impossible to accumulate storage that may be carried over into the drier years. This pattern occurs more often than one might think. Out of the 112 years of hydrologic record that we have available, this situation has occurred on 20 occasions. Thus, whenever we have a wetter year, there is almost a one in five chance that the next will be dry. This means that drought shortages will be imposed more frequently and with much greater severity than would otherwise be the case if we could store more of excess winter flow. All of our customers, and especially the farming community, will be severely impacted. In sum, this means that in a five year drought sequence, which NID is required by state law to plan for, NID is short a minimum of 51,000 acre feet of water, even taking into account a 50% reduction in deliveries. This is roughly equivalent to the safe water yield of the proposed Centennial project.

NID is facing a potentially catastrophic situation. That is the lesson of the technical memos. I urge all members of the community to read and understand them. They are available for download on the NID homepage.