



## FOOTHILLS WATER NETWORK

April 18, 2016

Lisa Francis Tassone, Board Secretary  
Nevada Irrigation District  
1036 W. Main Street  
Grass Valley, CA 95945

*Sent via email to tassone@nidwater.com and via U.S. mail*

Re: Comments on the Notice of Preparation of Environmental Impact Report for the Centennial Reservoir Project

Dear Ms. Tassone:

The Foothills Water Network (FWN or Network) and its member organizations respectfully respond to the Notice of Preparation (NOP) of Environmental Impact Report (EIR) for the Centennial Reservoir Project (Project) prepared by Nevada Irrigation District (NID). The Foothills Water Network represents a broad group of non-governmental organizations and water resource stakeholders in the Yuba River, Bear River, and American River watersheds. The overall goal of the Foothills Water Network is to provide a forum that increases the effectiveness of non-profit conservation organizations to achieve river and watershed restoration and protection benefits for the Yuba, Bear, and American rivers.

The Network is concerned that the proposed Project will have significant environmental impacts on the Bear and Yuba River watersheds and surrounding communities. We recommend that the following issues be considered in the Draft Environmental Impact Report (DEIR) to ensure its compliance with the California Environmental Quality Act (CEQA).

**The DEIR must include a complete definition and description of the proposed Project.**

The DEIR must include an adequate and comprehensive description of the proposed Project. Under CEQA, the inclusion in the EIR of a clear and comprehensive description of the proposed project is critical to meaningful public review. *County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 193 (“*Inyo II*”). Thus, “[a]n accurate, stable and finite project description is the sine qua non of an informative and legally sufficient EIR.” *Santiago County Water District v. County of Orange* (1981) 118 Cal.App.3d 818, 830.

The DEIR must disclose all the purposes of the Project. The DEIR must disclose the proposed Project's currently planned and reasonably foreseeable future facilities. The DEIR must also disclose and analyze the operation of these facilities (including rule curves) and how this operation will be integrated with Nevada Irrigation District's (NID) overall operation.

The NOP indicates that the proposed Project involves the construction of a new 110,000 acre-foot reservoir on the Bear River between Rollins and Combie reservoirs, for purposes that include drought and climate change mitigation, water supply reliability, and ability to meet NID's projected future water supply needs.

The DEIR must define the rule curves under which NID proposes to operate the proposed Project. This definition must be complete and precise, because it will be the basis for describing the impacts of Project operations on other uses of water and on instream beneficial uses. The DEIR must define rule curves for operation under current regulatory requirements. The DEIR must also define rule curves under reasonably foreseeable changes to those requirements, such as requirements for individual watersheds to contribute to February-June inflow and outflow to and from the San Francisco Bay-Delta estuary, pursuant to the State Water Resources Control Board's update of the Bay-Delta Water Quality Control Plan.

The DEIR must explain the operation of the proposed Project such that it will actually mitigate drought conditions, both for existing and future customers, and not simply become non-drought water supply for expanded growth whose extent leaves the alleged drought benefit unfulfilled. The DEIR must describe in detail the overall management of NID's combined water supply operations and how the proposed new facilities will be situated within that operation. The DEIR must describe the assurances that NID will establish so that reliability for existing customers is not reduced in order to serve new customers.

The DEIR must include hydrologic analysis that is integrated with and based on credible and substantiated climate change modeling. The DEIR must use a technically credible and substantiated hydrologic baseline that is developed for changed climate conditions and that is not simply based on past hydrology. Development and use of changed climate hydrology is all the more exigent because of the alleged climate change benefits of the project.

The DEIR must analyze operations of Centennial Dam in the context of decadal and multi-decadal drought scenarios. Tree ring analysis has enabled the reconstruction of Sacramento River precipitation cycles from the year 950 AD to the present.<sup>1</sup> This history provides previously unavailable insight into the hydrologic patterns of Sacramento Valley rivers and streams. The DEIR must evaluate the operation of Centennial Dam in the context of these hydrologic patterns in the analysis and projections. One identified pattern is a roughly 90-plus year wet/dry cycle, with variation between wet periods and dry periods of as much as 30%. The 35-50 years before the year 2000 was a wet period. Additionally, more than a dozen decadal droughts and one multi-decadal drought of approximately 35 years are evident in the tree ring

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<sup>1</sup> Meko, David M., et al, Sacramento Hydroclimatic Reconstruction from Tree Rings, Report to CDWR, 2014, [http://www.water.ca.gov/waterconditions/docs/tree\\_ring\\_report\\_for\\_web.pdf](http://www.water.ca.gov/waterconditions/docs/tree_ring_report_for_web.pdf)

history. The DEIR must use a hydrologic baseline derived from a realistic average of the past millennia, and not just the most recent, generally wet, 50-75 year cycle.

The Project's proponent claims that the mid-elevation location of the proposed Centennial Reservoir will capture water from rain runoff events that will otherwise not be available to NID. The DEIR must quantify the amount of water the proposed Project will capture under changed climate conditions, and explain the methodology for this quantification. The analysis must specifically quantify predicted future runoff conditions in locations that will allow capture in the new reservoir. The analysis must also describe predicted capture within the context of credibly described flood rule curves for the new facility. The analysis must describe the probable maximum flood event the facilities will be designed to withstand, and the proposed design and operation of the facilities such that they will be able to withstand that event.

The DEIR must disclose how the proposed Project will be used to facilitate the generation of hydropower. The DEIR must describe all facilities and infrastructure (both anticipated new construction and modifications to existing works) that are related to or necessary for power generation. The DEIR must describe any current hydroelectric operations that the proposed Project will affect or change. It must also describe the proposed operation of any new hydropower facilities that attach to the proposed Project or whose operation will be facilitated by it. The DEIR must also situate the proposed operation of the new facilities within the overall hydropower operation of NID's Yuba-Bear Project (FERC no. 2266), PG&E's Deer Creek Project (FERC no. 14530), PG&E's Drum-Spaulding Project (FERC no. 2310), and PG&E's Lower Drum Project (FERC no. 14531).

Several NID spokespersons are on record suggesting that the proposed Project will include new hydropower facilities and/or will be used as an afterbay to promote flexible hydropower generation at a new Rollins #2 powerhouse.<sup>2</sup> The DEIR is required to include an accurate and

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<sup>2</sup> (1) NID General Manager Remleh Scherzinger interview Grass Valley Union, August 30, 2014: "NID officials say the advantage of building a new reservoir in the middle of two existing reservoirs is flexibility, both with water releases and with the hydroelectric power grid. For example, if the district needs more power to balance the grid at the hottest times of the summer day — from 1 to 4 p.m. — NID could release water from Rollins downstream to Parker. "We can dump from one to another and still not lose the water to Combie," Scherzinger said. "It's fantastic." <http://www.theunion.com/news/12801466-113/nid-parker-reservoir-scherzinger>

(2) Remleh Scherzinger, NID General Manager, during Q& A with the Nevada County Board of Supervisors on 11/10/15 Item #18. Rem explained he has been talking to the CA Water Commission about sediment removal being part of the regulations, and then stated he thinks inclusion of hydroelectric should also help "...Is the installation of hydroelectric power on the facility. While chapter 8 does not specifically address hydroelectric energy as one of the boxes to be checked on whether a project should go or not go, or get funded or not get funded, given that the Governor just signed his 50% renewable goal by 2020, it should at least get a bell ring, you know we should get a gold star or something because projects like ours and honestly like Sites will generate additional hydroelectric energy. Now our project we anticipate generation under 30 megawatts so we'll fall into the renewable power supply, so we are renewable which is again fantastic. The project brings so many benefits to the community and the district's sphere which is Placer, Nevada and Yuba counties. This is a really good thing." [http://nevco.granicus.com/MediaPlayer.php?view\\_id=3&clip\\_id=6448](http://nevco.granicus.com/MediaPlayer.php?view_id=3&clip_id=6448)

(3) Remleh Scherzinger, in NID Board Minutes for 12/10/14, p. 310. "With regard to the environmental document, he anticipates that the District will complete a National Environmental Policy Act (NEPA) document

comprehensive project description, and must account for reasonably foreseeable future phases or other reasonably foreseeable consequences of proposed projects. *Laurel Heights Improvement Association v. Regents of the University of California* (1988) 47 Cal. 3d 376 (“*Laurel Heights I*”). Therefore, the DEIR should describe all facilities that are necessary to the proposed Project or necessary to serve future uses.

In this case, it appears that NID ultimately plans to use the proposed Project to upgrade and/or increase its generation of hydropower. The DEIR must explain how the proposed Project will affect decision-making about the construction of Rollins #2 powerhouse. The DEIR must describe operation of Rollins #2 powerhouse with and without the proposed Project, and how that operation will change the proposed baseload operation of hydropower facilities as described in the FEIS for the relicensing of the Yuba-Bear, Deer Creek, Drum-Spaulding, and Lower Drum hydroelectric projects.<sup>3</sup> It must describe both daily and long-term operational changes to its power generation and its stream releases past the intake to the Bear River Canal into the Bear River. If NID is reasonably likely to bypass the existing Bear River Canal with a tunnel from the proposed Centennial Reservoir to the Lower Drum hydropower facilities, the DEIR must also describe such new facilities and their operation to the degree possible.

Since it is reasonably likely that NID will install hydropower facilities at the new Centennial Dam or on tunnels or other conduits that lead to or from this dam, the DEIR must describe these facilities. Even if the exact engineering is unknown at this time, the DEIR must describe reasonable alternative configurations and reasonable alternative operations of such new hydropower facilities.<sup>4</sup>

**The DEIR must describe permits and approvals necessary for the proposed Project and how they are likely to affect Project design and operation.**

Generally speaking, the DEIR should include reference to all applicable laws and regulatory requirements that are relevant to the Project, given that such laws and requirements will shape the way Project development and operation occurs. We note several specific regulatory issues below.

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because the project “will have access to Federal funding and will involve hydroelectric power.”  
<http://nidwater.com/wp-content/uploads/2015/01/Wk-Copy-of-Minutes-12-10-2014.pdf>

(4) NID engineer Doug Roderick on KNCO on 2/9/15 saying the project has 2 hydro plants and that hydro would be the main funding source. <http://knco.com/nid-launches-centennial-reservoir-website/>

<sup>3</sup> See Final EIS for the relicensings of the Upper Drum-Spaulding, Lower Drum, Yuba-Bear and Deer Creek projects, FERC 2014, p. 660.

<sup>4</sup> The Centennial Dam website states:

The Centennial Reservoir Project creates the future potential to generate green, clean, hydroelectric energy for the community. A future hydroelectric development at Centennial Dam would be eligible for renewable energy certification status under the State of California’s current policy, which considers small hydropower’s “green attributes” as equivalent to wind and solar. . NID intends to adhere to the standards established by the Low Impact Hydropower Institute in the design of a future hydroelectric facility at Centennial Reservoir. When completed, the Centennial Reservoir Project hydroelectric facility operation would not contribute to global warming, air pollution, acid rain, or ozone depletion and would provide enough power for approximately 20,000 homes in the region.

<http://www.centennialreservoir.org/clean-energy/> (last checked April 15, 2016).

### Army Corps of Engineers

As noted in the NOP's Table 1, Summary of Anticipated Permits and Approvals, NID must obtain a Clean Water Act §404 permit from the Army Corps of Engineers in order to proceed with construction.<sup>5</sup> In addition, the Army Corps issue an approval for a new flood rule curve under §7 of the Flood Control Act.

### State Water Resources Control Board

NID has applied to the State Water Resources Control Board (State Board) for assignment of water rights applications 5634 and 5633 to construct and build Centennial Dam and store water in the resulting reservoir, for purposes of use that include irrigation, industrial, municipal, domestic, and incidental power. Presumably, the "incidental power" use pertains to points of rediversion down the lower Drum system at Halsey, Wise and Newcastle powerhouses. However, NID has not to our knowledge filed for separate permits to produce power using the proposed new facilities.

If NID plans to construct power generation facilities attached to the new water supply facilities, it will need to apply for separate water rights for power generation. In such case, the new facilities would become jurisdictional to the Federal Energy Regulatory Commission (FERC), as described below. A FERC process would move the Clean Water Act §401 Water Quality Certification process to the State Board, as opposed to the Central Valley Regional Water Quality Control Board, as currently indicated in the NOP's Table 1, Summary of Anticipated Permits and Approvals.<sup>6</sup>

### Federal Energy Regulatory Commission

Notably missing from the NOP's Table of Permits and Approvals is the Federal Energy Regulatory Commission (FERC). Under the Federal Power Act (FPA) Part I, the Commission has jurisdiction over any non-federal entity that constructs, operates, or maintains any dam or related work for power generation using (i) navigable and other waters subject to the Commerce Clause of the U.S. Constitution, (ii) waters on federal lands such as a National Forest, or (iii) "surplus waters" from any federal dam. 16 U.S.C. § 797(e). It is unlawful for any non-federal entity to operate such works absent a license. 16 U.S.C. § 817. The project means the "complete unit of development," including "all storage, diverting or forebay reservoirs directly connected therewith..." 16 U.S.C. § 796(11). "While the Commission does not license facilities that are unrelated and only incidental to the power generation facilities, it must license all project works that are related to, and necessary for, power generation." *Big Bear Area Regional Wastewater Agency* (1985) 33 FERC ¶ 61,115.

If the reservoir created by the proposed Project is to be used as an afterbay to existing power facilities at Rollins Reservoir, it would constitute a project work under FPA 3(12) as a "part" of

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<sup>5</sup> NOP, p. 8: Table 1, Summary of Anticipated Permits and Approvals.

<sup>6</sup> *Id.*

the complete unit of development, “used and useful” for power generation, and “directly connected” to the Rollins powerhouse, which is a licensed work. *See* FPA 3(11), 16 U.S.C. § 796(11). Therefore this use, including changes to the flow regime in the Bear River downstream of Rollins reservoir and the intake to the Bear River Canal, and/or the facilitation of peaking operations in this river reach, would require a FERC license amendment to the Yuba-Bear Project. Such use is outside the scope of operations considered in the existing FERC license, the 4(e) conditions for the new FERC license, and the analysis in the FEIS for the relicensing of the Yuba-Bear, Deer Creek, Drum-Spaulding, and Lower Drum hydroelectric projects, as noted above. It would also diminish the agreed-to benefits of the flow regime for the Bear River downstream of Rollins Reservoir during the relicensing of the Yuba-Bear Project, which may appropriately be considered a baseline condition under CEQA for the purposes of impacts analysis, since that flow regime was both negotiated and mandatory.

Additionally, NID and/or PG&E would need to seek an amendment to the FERC license for the Lower Drum hydroelectric projects if, as part of the proposed Centennial Project, NID were to construct a tunnel or tunnels from the proposed Centennial Reservoir to Halsey forebay and to the lower Drum system, thereby bypassing the current Bear River Canal.<sup>7</sup>

If the proposed Project includes its own power units,<sup>8</sup> it will be jurisdictional to FERC and will require a license or a license exemption. FERC will reject any effort by NID to build the dam and then separately and subsequently claim that FERC jurisdiction pertains only to the power facilities themselves and not the associated infrastructure that enables it. This approach would be a patent attempt to evade FERC’s jurisdiction. NID cannot construct a new dam with the intent to construct attendant hydropower facilities and then later claim it is adding hydropower facilities to “existing” water supply facilities on “conduits” whose purpose is not primarily for power generation.

The DEIR must disclose impacts and actions jurisdictional to FERC now. Failure to do so is piecemealing under CEQA, i.e., breaking a large project into smaller components to avoid analyzing it as a whole. As the CEQA statute states in §21159.27, “Prohibition against Piecemealing to Qualify for Exemptions”: “[A] project may not be divided into smaller projects to qualify for one or more exemptions pursuant to this article.” Analyzing the whole of an action in a single environmental document ensures “that environmental considerations not become submerged by chopping a large project into many little ones, each with a potential impact on the environment, which cumulatively may have disastrous consequences.” *Burbank-Glendale-Pasadena Airport Authority v. Hensler* (1991) 233 Cal. App. 3d 577. Additionally, “[r]esponsibility for a project cannot be avoided by limiting the title or description of the project.” *Rural Land Owners Association v. Lodi City Council* (1983) 143 Cal. App. 3d 1013.

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<sup>7</sup> PG&E is the current owner of the Lower Drum Project. However, PG&E has announced its interest in selling the Lower Drum Project. The DEIR should disclose the likelihood of such sale, including its likely purchase by NID or by a Joint Powers Authority consisting of NID and Placer County Water Agency.

<sup>8</sup> Remleh Scherzinger, presentation to Nevada County Board of Supervisors, November 10, 2015, item 18. For video, see [http://nevco.granicus.com/MediaPlayer.php?view\\_id=3&clip\\_id=6448](http://nevco.granicus.com/MediaPlayer.php?view_id=3&clip_id=6448). In providing the project description, he stated there would be “... three power units – we anticipate two at Centennial and then building the second power unit at Rollins. That unit has been 30% designed. It was contemplated in the 80’s and so we have a lot of that work already done, so we are going to bring that one forward.” (Slide 18: “Project Description”).

## Bureau of Land Management

The DEIR must disclose NID's efforts to reduce regulatory requirements for the proposed Project through the purchase of land currently owned by the Bureau of Land Management (BLM). The DEIR must disclose the jurisdictional implications of such efforts. Specifically, the DEIR must disclose how such a change of ownership, if completed, will affect the regulatory authority of BLM over both the Yuba-Bear Hydroelectric Project, including both the recently negotiated final Federal Power Act §4(e) conditions in the Yuba-Bear relicensing, and the potential §4(e) conditioning authority of BLM over any new hydropower facilities attaching to the proposed Project.

### **The DEIR must describe how financing will affect Project and design and operation.**

Funding sources for large-scale water projects often entail both limitations and uncertainties. The DEIR should disclose how potential funding of the proposed Project might affect project design and operation, and also how funding uncertainties might affect NID ratepayers and the environment in NID's service area should projected funding fall short of expectations.

#### Financing through Proposition 1

NID has applied for Proposition 1 (2014) funding under three separate chapters. The DEIR must disclose what conditions would be placed on the Project as a consequence of Prop 1 funding imposed from each chapter, and must disclose the impact of these conditions on operations, hydrology and future revenues.

#### Financing through water sales

NID has traditionally not sold water surplus to its customer needs to purchasers other than South Sutter Water District out of NID's District boundary. In several public meetings in the past 6 months, NID Board and staff have noted that NID is considering the possibility of selling water out-of-District. The EIR must disclose future water sales outside the District and must describe the impacts on current customers as well as future impacts to customers and water availability.

#### Financing through hydropower

According to NID's website, "[R]evenues from hydroelectricity are very important in the maintenance and operation of NID's extensive water distribution system."<sup>9</sup> The DEIR must disclose the extent to which hydroelectric production revenues from existing facilities will be used to pay for the Centennial Project. The DEIR must situate anticipated revenues within supported scenarios for dry, average, and wet water years, as well as within climate change scenarios.

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<sup>9</sup> [www.nidwater.com/hydroelectric](http://www.nidwater.com/hydroelectric)

The DEIR must also address the effect of reasonably foreseeable new grid balancing technologies that will reduce the market value of hydropower revenues within the life of the Project. The current electrical market offers a premium for peaking and load following using hydropower facilities. Under current technologies, hydropower has grid-balancing capabilities that are in many senses unique. However, the electric power industry is actively developing new technologies for demand management and grid-scale implementations of non-hydropower and non-fossil fuel peaking and load following.<sup>10</sup>

Within the time horizon of paying off the costs of the proposed Centennial Project, alternatives to hydropower are likely to become competitive with or even more economic than hydropower in providing grid-balancing services.<sup>11</sup> The grid peak itself is also likely to change as demand management and distributed energy storage take hold, and as grid-scale storage and balancing alternatives such as large-scale battery installations, molten salts, and mechanical storage come on line.<sup>12</sup>

NID must not only disclose plans to finance the proposed Project with hydropower revenues, it must also situate prospective revenues from future and re-operated hydropower facilities within the context of changing power technologies and markets.

#### **The DEIR must disclose impacts of the out-of-District sale of Project water.**

The DEIR must disclose NID's plans to sell Project water outside the District and must describe the in-District and out-of-District impacts of such sales. In several public meetings in the past six months, NID Board members and staff have suggested that NID is considering selling water out-of-District. NID has traditionally not sold surplus water surplus to purchasers outside of NID's service area other than South Sutter Water District (SSWD). SSWD relies on inexpensive water to supply its agricultural customer base. In that market, the price of water is generally low (\$20-30/AF). Price increases of NID water that may result from regular sales to new purchasers could price SSWD out of the market, with potential impacts to Sutter County groundwater. NID must also address the impact of new operations and water sales on SMUD hydropower production at Camp Far West.

#### **The DEIR must analyze and propose mitigation for the Project's potentially significant impacts.**

CEQA requires that an EIR be detailed, complete, and reflect a good faith effort at full disclosure. CEQA Guidelines § 15151. The document should provide a sufficient degree of

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<sup>10</sup> Pacific Gas and Electric Smart Grid Annual Report – 2013, October 1, 2013, <http://www.pge.com/includes/docs/pdfs/myhome/edusafety/systemworks/electric/smartgridbenefits/AnnualReport2013.pdf>

<sup>11</sup> Advancing and Maximizing the Value of Energy Storage Technology, a California Roadmap. California Independent System Operator, December 2014, [http://www.aiso.com/Documents/Advancing-MaximizingValueofEnergyStorageTechnology\\_CaliforniaRoadmap.pdf](http://www.aiso.com/Documents/Advancing-MaximizingValueofEnergyStorageTechnology_CaliforniaRoadmap.pdf)

<sup>12</sup> ARPA-e GRIDS Program Overview, [http://arpa-e.energy.gov/sites/default/files/documents/files/GRIDS\\_ProgramOverview.pdf](http://arpa-e.energy.gov/sites/default/files/documents/files/GRIDS_ProgramOverview.pdf)

analysis to inform the public about the proposed project's adverse environmental impacts and to allow decision-makers to make intelligent judgments. *Id.* An agency may not defer its assessment of important environmental impacts until after the project is approved. *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, at 306-07. Additionally, an EIR's conclusions must be supported by substantial evidence. *Laurel Heights Improvement Ass'n v. Regents of University of California* (1988) 47 Cal.3d 376, at 409 ("*Laurel Heights I*"). If significant adverse environmental impacts are identified, feasible mitigation measures must be adopted in order to substantially lessen or avoid the impacts. Pub. Resources Code §§ 21002, 21081 subd. (a).

### Water Resources and Hydrology

The proposed Project will have impacts associated with the diversion or conveyance of water to fill the reservoir and the capture of water that is not passed downstream for beneficial uses. Both sets of impacts to water resources – water sources diverted, and water prevented from passing for downstream delivery – must be analyzed in the DEIR.

The DEIR should analyze the extent to which the proposed Project will rely on water from the Yuba River watershed and the reasonably foreseeable impacts the proposed Project will have on river flows in the Middle Yuba River, South Yuba River and Canyon Creek. The DEIR must disclose any increases in the amount or timing of water diverted from the Yuba River watershed to the Bear River that will occur if the proposed Project is constructed. It must also disclose the effect of any additional water transfers to the Bear River on water temperatures, flows and habitat in the South and Middle Yuba Rivers, Canyon Creek and other tributaries.

The DEIR should analyze the impacts of the proposed Project on downstream hydrology, including groundwater recharge and water quality. Water captured by Centennial dam will either not be available to downstream reaches or will flow downstream with altered timing and magnitude. The DEIR must describe the impacts of the proposed Project to the hydrology of the lower Bear River, the Feather River, the Sacramento River and the Sacramento-San Joaquin Bay-Delta estuary. Freshwater inflow to the Delta is a critical resource for maintaining ecosystem function in California's largest estuary. The DEIR should describe how the proposed Project will lessen freshwater inflows to the Delta and change the timing of inflows.

The DEIR must also describe how downstream water users will be impacted by the proposed Project. The DEIR must analyze the potential impacts to the South Sutter Water District and Camp Far West Reservoir. The DEIR must quantify the extent to which the proposed Project will decrease rates of recharge to groundwater aquifers in the Central Valley by decreasing flood stage or extents of floodplain inundation.

The DEIR must describe how its operations will affect the operation of the State Water Project (SWP) and the Central Valley Project (CVP), both under current operating requirements and under reasonably foreseeable future operating requirements. In particular, the DEIR must quantify the direct effect of the reduction of inflow to Folsom Reservoir from the lower Drum system (release from Newcastle Powerhouse). As a corollary, the DEIR must describe the impact of Project operations on water deliveries within the CVP's American River Division and

on flows in the lower American River. The DEIR must also describe indirect and cumulative effects of the proposed Project on the integrated operations of the SWP/CVP system, including its water deliveries, storage, releases for salinity control, and releases to meet environmental requirements.

The DEIR must analyze how the proposed Project will reduce Delta inflow and outflow, both under current requirements and under reasonably foreseeable requirements enacted pursuant to the update of the Bay-Delta Water Quality Control Plan. The analysis must evaluate a variety of water year types. It must also evaluate different storage scenarios both for the proposed Project and for other Central Valley reservoirs. The analysis should pay particular attention to the effects to Delta inflow and outflow during and after multiple dry year sequences. For instance, in 2014-2015, reservoirs and diversions captured about 70% of the unimpaired flow peaks; in 2016, reservoirs and diversions also captured about 70% of the unimpaired flow peaks before March, when flood releases from Oroville, Shasta and New Bullards Bar reservoirs began.<sup>13</sup>

The DEIR must evaluate the impacts of the proposed Project to other users of water in the context of the update of the Bay-Delta Water Quality Control Plan. During flood flows, the Bear River contributes some of the small percentage that remains of unregulated inflow to the Bay-Delta system. The proposed Project, in combination with a requirement of the Bay-Delta Plan to augment Delta inflow, will transfer the burden of flow increases to other water users in other watersheds.

#### Water Quality

The DEIR must analyze the water quality impacts of the proposed Project, and disclose whether the proposed Project will violate water quality standards or otherwise substantially degrade water quality.

#### Mercury

Reservoirs in the Sierra Nevada region are plagued by mercury-laden sediment that washes down during storm events from lands contaminated by abandoned mines. This sediment reduces storage capacity within existing reservoirs and creates a source of mercury in its elemental and methylated forms to both the aquatic and terrestrial environments. NID is currently working on projects to remediate mercury contamination and remove sediments in both Combie and Rollins reservoirs<sup>14</sup> on the Bear River, both of which are listed for mercury contamination under §303(d) of the Clean Water Act.<sup>15</sup> One of the objectives of these remediation projects is to restore the water storage capacity of Combie and Rollins reservoirs that has been lost due to the accumulation of the sediment.

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<sup>13</sup> The Bay Institute, unpublished data.

<sup>14</sup> [http://nidwater.com/wp-content/uploads/2012/04/Project\\_Description.pdf](http://nidwater.com/wp-content/uploads/2012/04/Project_Description.pdf)

<sup>15</sup> [http://www.waterboards.ca.gov/water\\_issues/programs/tmdl/docs/303dlists2006/epa/r5\\_06\\_303d\\_reqtmcls.pdf](http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/epa/r5_06_303d_reqtmcls.pdf)

The DEIR should analyze how much mercury-laden sediment the proposed Project is expected to accumulate over time and what percentage of that mercury will methylate. The DEIR should also disclose proposed actions to maintain capacity in the proposed reservoir and to remove contaminated sediments, as well as the costs of these actions.

### Greenhouse Gas Emissions

The DEIR must disclose whether the proposed Project will generate greenhouse gas emissions or affect the ability of the State of California to reduce emissions to 1990 levels by 2020 in accordance with state law.<sup>16</sup> Data collected worldwide on new reservoir building and existing reservoir operation indicates that both methane and carbon dioxide are emitted during the initial reservoir filling and throughout the lifespan of a reservoir.<sup>17</sup>

The DEIR should analyze how the proposed Project will affect carbon dioxide emissions. Carbon dioxide is released when organic matter within the flooded river canyon is broken down during the initial flooding process, when organic matter runs off from river canyon slopes during storm events, seasonally when the reservoir is filled with winter runoff, and as part of the natural lifecycles of the plankton and plants that live within a reservoir.<sup>2</sup>

This analysis should also address how the proposed Project will affect methane emissions. It is estimated that reservoirs produce over 20 percent<sup>18</sup> of man-made methane emissions, which is 34 times more potent than carbon dioxide.<sup>19</sup> Methane is produced in aquatic ecosystems through microbial interactions within the sediment, which is predicted to increase significantly when a riparian and wooded area is inundated with water during reservoir creation.

### Aquatic Resources

The DEIR must analyze the impacts of the proposed Project on aquatic biological resources. The DEIR should use the analysis of water resource impacts, upstream and downstream, to define potential impacts to aquatic resources. The proposed Project will affect aquatic resources in the Bear River between Rollins and Combie reservoirs. It will inundate the majority of this river reach; the DEIR must describe the seasonal extent of this inundation. The portion of the Bear River immediately downstream of Rollins Reservoir will likely be subject to fluctuating flows due to hydropower peaking. The DEIR must describe the impacts of this operation on aquatic resources.

The DEIR must also describe the impacts to aquatic resources in the Yuba River watershed as a result of any changes in diversions, instream flows or other operations in the Yuba-Bear/Drum-Spaulding water and power system.

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<sup>16</sup> <http://www.arb.ca.gov/cc/ab32/ab32.htm>

<sup>17</sup> <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0143381>;  
<http://bioscience.oxfordjournals.org/content/50/9/766.full>

<sup>18</sup> <http://bioscience.oxfordjournals.org/content/50/9/766.full>

<sup>19</sup> <http://pubs.acs.org/doi/pdf/10.1021/es501871g>

The DEIR must analyze the cumulative impacts of the proposed Project on aquatic resources in the Bear River downstream of Camp Far West Reservoir, in the Feather River downstream of Lake Oroville, in the Sacramento River downstream of Feather River confluence, and in the Bay-Delta estuary. Please see further discussion of cumulative effects, *infra*.

The DEIR must disclose and analyze expected levels of mercury contamination in fish and wildlife that may result from the proposed Project, both within the Project footprint and downstream. Such contamination is likely because reservoirs upstream and downstream of the proposed Project are listed as impaired for mercury under §303(d) of the Clean Water Act.

### Terrestrial Resources

The DEIR must analyze the effects of the proposed Project on terrestrial resources. The proposed dam will flood hundreds of acres of prime oak woodland habitat and inundate critical habitat and homes for western pond turtles and foothill yellow legged frogs. It will substantially constrict animal migration corridors, especially for deer. The EIR must quantify the loss of oak woodlands, riparian ecosystem, and habitat loss for special status species.

### Cultural Resources

The DEIR should analyze the potentially significant impact of the proposed Project on Native American cultural and spiritual resources. The Bear River is the ancestral home of the Nisenan (or Nishenam) people. The Bear River serves as a territorial divide for three different Nisenan Tribal entities; the group who is south of the Bear currently known as the United Auburn Indian Community, the group who are east of the Bear modernly known as the Todd Valley/Colfax Consolidated Tribe and the Nisenan who are north of the Bear known as the Nevada City Rancheria. These lands, and these Nisenan people, are part of Nisenan tribal heritage and this heritage can be proved back before the Gold Rush and points of non-native contact.

An example of this continuous cultural use of the river is the Bear River Campground; it is still used by the Colfax Nisenan Indians for cultural practices as they have done for countless generations. This area also contains cultural resources such as ceremonial plants, culturally used plants, cobbles, and cooking stones. Not only are there many sites in the area of potential inundation, including rumor of burial sites, but the Nisenan still use the resources and locations for ceremonial and other purposes. There will be impacts to these sites, including inundation, as a result of the construction, maintenance and/or operation of the Project. The DEIR must investigate and analyze the known and potential impacts and mitigations for those impacts. must be investigated and analyzed for potential impact and proposed mitigation for damages.

The DEIR must survey and investigate the existing sites, and use an interview process to catalogue the traditional cultural properties in ongoing use by the tribes, which in this specific area include the Todd Valley/Colfax Consolidated Tribe, Nevada City Rancheria and the United Auburn Indian Community. Collaborative investigation with the one Federally Recognized Nisenan group, the United Auburn Indian Community, is essential in order to inventory cultural resources and sites. As Nevada City Rancheria, as well as Todd Valley/Colfax Consolidated Tribes are both currently without Federal Recognition, both groups fall within United Auburn's "service area". Therefore, it is important to have the collaboration of all three groups. The most

appropriate method of investigation would include collaboration with a cultural heritage consultant from within the Nisenan communities mentioned above. Said consultant should liaise with the other Nisenan communities and those communities should be in agreement as to the choice of consultant.

When time comes for formal consultation with indigenous people of the Bear River, the Nevada City Rancheria asks to be included in the consulting process and wishes to engage in the mandated “meaningful dialogue.”

### Recreation

The DEIR should disclose and analyze impacts of the proposed Project to the current recreational uses of the Bear River. Many area residents now enjoy easy access to river recreation in the proposed Project area such as fly fishing, rafting, gold panning, swimming and hiking. In addition to the Project’s physical impact of flooding areas currently used for recreation, the Project areas will have social consequences, such as loss of public recreational opportunities. The proposed Project will inundate the Bear River Campground, resulting in a loss of 250 acres of public land that currently provides public hiking trails, river access, and camping. The DEIR must identify these impacts and describe how they will be mitigated. This analyses must consider impacts and mitigations for geographically diverse users and specifically address Placer County as well as Nevada County recreationists.

### Aesthetics

The DEIR must analyze how the proposed Project will degrade the visual character and quality of the existing site. Presently, the canyon where the dam will be located is steep and forested, and presents scenic canyon views. However, fluctuating reservoirs often result in an aesthetically unpleasing “bathtub ring” without vegetation. The DEIR must fully disclose how the proposed Project will degrade the current scenic character of the site, including an analysis of the predicted extent of a bathtub ring effect throughout the year during high, low, and average water years. The DEIR should also identify the aesthetic impact of this ring on multiple user types, including local residents, passing motorists, and recreational users.

### Property Rights

The DEIR must disclose how the proposed Project will impact private lands in the Project area. 25 homes and 120 parcels will be directly impacted by both the Project and no project alternatives. The Project has already placed a cloud on parcels within the proposed “take line” of the reservoir. Property owners are blocked from the open market, and are deferring repairs, maintenance and/or improvements due to the uncertainty of property disposition. Damage and losses to these landowners will continue in perpetuity even if the No Project alternative is chosen, because the specter of Centennial will remain. The DEIR must disclose the direct and indirect impacts of the Project on privately owned homes and lands, and on land values.

### Transportation/Traffic

The DEIR must analyze how the proposed Project will impact traffic, public safety, and fire protection during Project construction and after its completion. The proposed Project would flood the only road that crosses the Bear River between Highway 174 and Highway 49. Four potential routes have been proposed to replace the Dog Bar Bridge crossing: one route below the Centennial Dam and three potential bridge locations that would cross the new reservoir. The DEIR should describe each of these potential crossings and how traffic and emergency access and egress will occur during construction. The DEIR should also describe how each potential new crossing would affect traffic in local neighborhoods and communities. The DEIR should also analyze how new traffic patterns will impact air pollution and greenhouse gas emissions in the region. The four potential crossing projects are of significant scale in and of themselves, and the DEIR must analyze each potential crossing site and project with the full suite of impact analyses required under CEQA.

### Growth Inducing Impacts

The EIR must disclose and analyze growth-inducing impacts of the proposed Centennial Project, including a discussion of the environmental quality of life impacts on existing communities. An “EIR must discuss growth-inducing impacts even though those impacts are not themselves a part of the project under consideration, and even though the extent of the growth is difficult to calculate.” *Napa County Bd. of Supervisors* (2001) 91 Cal. App. 4th 342, 368.

The CEQA Guidelines define “impacts” and “effects” broadly to include:

- (1) Direct or primary effects which are caused by the project and occur at the same time and place.
- (2) Indirect or secondary effects which are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems.

CEQA Guidelines § 15358.

Nevada Irrigation District officials and publications have made it clear that a primary purpose of the Centennial Project is to serve projected growth.

“We need to be able to execute the project [Centennial] so that we can continue to make the deliveries to the community to meet the growth needs of the District....In particular, bedroom communities for commuters to Sacramento are expected to grow exponentially in Lincoln, parts of which are within NID service area.”<sup>20</sup>

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<sup>20</sup> NID General Manager Remleh Scherzinger, interview, Grass Valley Union, August 30, 2014, *op cit*.

*NID Waterways*, an NID newsletter, stated in its Fall, 2015 issue: “Additional water storage capacity will allow the District to improve and expand water service within NID’s Nevada and Placer County Service Area.”<sup>21</sup>

The proposed Project will have growth-inducing impacts in, at minimum, the areas noted below.

- a. **Lincoln Service Area.** The DEIR for the NID Regional Water Supply Project (RWSP) estimates the total demand for new treated water supplies for the Village developments in Lincoln to be 22,255 acre feet.<sup>22</sup> (Table 3.18-6). The DEIR for the RWSP notes: “The proposed project does, however, remove an obstacle to additional growth and development by making additional water supplies available with NID’s western service area boundaries.”<sup>23</sup> The NOP acknowledges the direct connection between the proposed Lincoln development and Centennial. “The Proposed Project would directly benefit the southern portions of NID’s service territory, including the Placer County service area.”<sup>24</sup>
- b. **Dog Bar Road area to be served by a new Centennial Pipeline.** “A new raw water pipeline would be installed within Dog Bar Road in NID’s service area. A pump station, tank, and extraction wells/pump intake area would also be constructed in the northern portion of the reservoir.”<sup>25</sup> The DEIR must describe and analyze both the growth-inducing and the environmental impacts of the construction of this pipeline.
- c. **Nevada City and Grass Valley.** The NOP states: “Upstream areas in Nevada County would also benefit from NID’s future ability to route more water from the mountains down the Yuba River/Deer Creek watershed and less down the Bear River side.”<sup>26</sup> By making more water available, the Project will remove an obstacle to growth in the Nevada City and Grass Valley areas. In addition to the consequences of growth, the DEIR must examine the impacts of additional water deliveries to the Deer Creek and Wolf Creek ecosystems.
- d. **Meadow Vista.** The proposed Project will inundate the Dog Bar Bridge crossing of the Bear River. The relocation of this traffic crossing will have major impacts on both Meadow Vista and the Lake of the Pines areas. By shortening travel time in crossing the Bear River, the relocation will affect traffic patterns and commuting choices and thus be likely to stimulate growth.

### Summary: Significant Impacts That Require Mitigation

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<sup>21</sup> *NID Waterways*, Fall 2015, Vol 36 #3, p 1. <http://nidwater.com/2015/10/waterways-newsletter-fall-2015/>

<sup>22</sup> EIR for the NID Regional Water Supply Project (RWSP), Table 3.18-6. [http://nidregionalwatersupply.org/docs/rpt\\_nid\\_rwsp\\_print\\_version\\_compiled\\_pdeir\\_20151201\\_double\\_sided.pdf](http://nidregionalwatersupply.org/docs/rpt_nid_rwsp_print_version_compiled_pdeir_20151201_double_sided.pdf)

<sup>23</sup> *Id.*, pp. 3.14-15.

<sup>24</sup> NOP, 1.3, Purpose and Need, p 5.

<sup>25</sup> NOP, 1.4.2, Project Site and Description, p 6.

<sup>26</sup> NOP, 1.3, Purpose and Need, p 5.

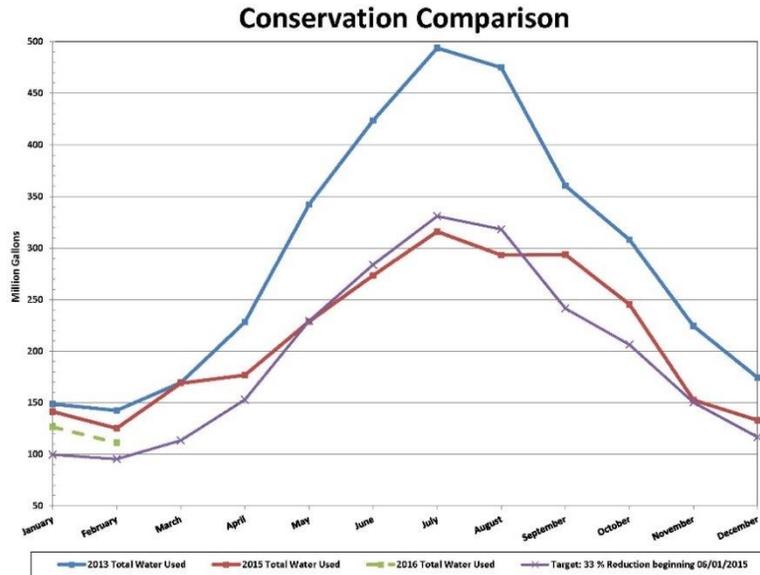
As noted above, if NID concludes that an impact is significant, it must adopt feasible mitigation measures in order to substantially lessen or avoid the impact. Pub. Resources Code §§ 21002, 21081 subd. (a). Therefore, the DEIR must describe and analyze feasible mitigation measures. For example, the DEIR should consider purchase of alternative lands as a feasible mitigation measure for impacts to river corridors and oak woodlands. However, such resources cannot be easily replaced and include attributes difficult to match. The description of any such mitigation measure should include key components such as timing of acquisitions, cost to acquire and/or restore alternative habitats, possible location of acquisitions, and net impacts/benefits to specific wildlife habitats and recreation/cultural uses.

### **The DEIR must include an adequate range of reasonable Project alternatives**

The DEIR must describe a range of alternatives to the proposed Project and its location that will feasibly attain the project's basic objectives while avoiding or substantially lessening the project's significant impacts. Pub. Res. Code § 21100(b)(4); CEQA Guidelines § 15126(d). The DEIR should consider a range of alternatives by which NID could respond to the effects of climate change and drought, including demand and supply-side conservation, modification of existing reservoirs, repair and upgrade to aging and inefficient infrastructure, and greater conservation efforts. The analysis of alternatives in the DEIR should assess whether NID can meet existing and reasonably projected water supply needs through upgrades and improved management of the existing system, and must examine a range of reasonably foreseeable future water use patterns.

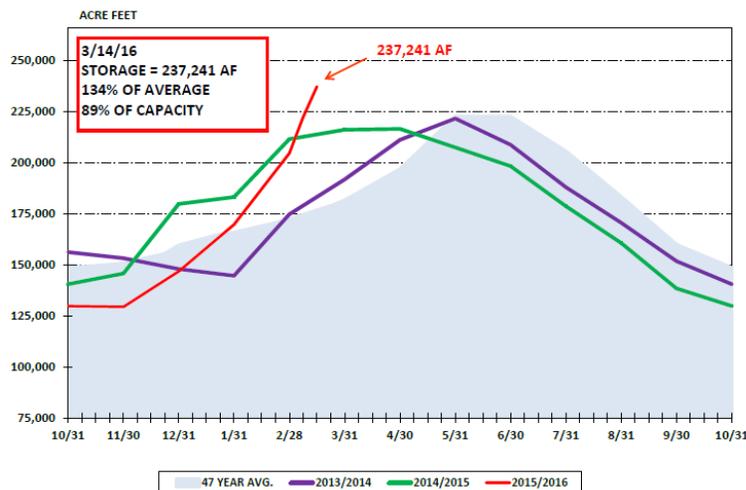
### **Urban Water Conservation Alternative**

The DEIR should evaluate urban water conservation actions as a component of an alternative to help NID meet its current and project water demand. The 2010 NID Urban Water Management Plan (UWMP) states: "NID's 2008 through 2010 average GPCD was 236 GPCD." The graphic below illustrates the extent of domestic water savings by NID customers during drought conditions in 2015. Compared to 2013, NID urban customers conserved about one billion gallons, or about 3,000 acre feet.



Judging from the powerpoint presentation “Water Supply Update (March 23, 2016 Board Meeting)”, NID’s current water storage situation is far better than in 2015.<sup>27</sup>

### NID RESERVOIR STORAGE



These graphics do not minimize the impact of the drought, nor do they indicate that the drought is over. They do however illustrate that NID and its customers have the capability of responding effectively to a significant drought, with the infrastructure and practices in place today. Saving 3,000 acre feet in the midst of the drought indicates that urban water conservation can be a significant contribution to water source alternatives to the proposed Project.

### Water Demand Management Alternative

<sup>27</sup> [http://nidwater.com/wp-content/uploads/2014/01/2013\\_2015\\_Conservation\\_Comparison-e1434746563215.jpg](http://nidwater.com/wp-content/uploads/2014/01/2013_2015_Conservation_Comparison-e1434746563215.jpg)

The DEIR should evaluate an alternative with a suite of measures to optimize existing operations and reduce demand. It could include the following elements:

- a. **Establish goals to reduce water consumption.** NID should implement a plan to reduce water consumption through long-term, iterative water conservation programs. NID does not currently have such a program, and its residential and agricultural water usage is significantly higher than peer utilities as a result.
- b. **Increase public understanding.** Equip water consumers with information about the cost of their water, rate structure, own water use patterns, and smart, simple water efficiency solutions. Information should include the full cost of operating, maintaining and upgrading the system, so when rates are restructured, there is a basic understanding of how rates are derived.
- c. **Involve water users in decisions.** Identify opportunities for significant water savings by involving water consumers and encouraging higher rates of efficiency in the user base.
- d. **Improve the integration of resource management.** Better integrate water, wastewater, stormwater, and energy.

#### Efficient Water Use Alternative

The DEIR should evaluate mechanisms to conserve water as an alternative to “new” Centennial water. The alternative should consider appropriate market incentives that will encourage more efficient use of water and protect sources of water.

- a. **Stop leaks.** Reduce water loss to as close to zero as possible. All systems should, at a minimum, achieve the accepted industry standard of no higher than 10 percent. NID’s loss control efforts have yet to achieve industry best-practice levels of revenue/non-revenue water.
- b. **Meter all water users.** Installing meters on unmetered customers is one of the single most effective water conservation measures.
- c. **Build smart for the future.** NID should work with local agencies to adopt building codes and ordinances to support or require the use of the most water efficient technologies in both new construction and existing buildings. NID should consider water efficient fixtures, gray water use, and water efficient landscape requirements.
- d. **Harvest rainwater for non-potable needs.** NID should require capture and reuse of stormwater for non-potable purposes in all new construction (homes, commercial, industrial and institutional development, neighborhood development, etc.). On-site collection and use of rainwater can significantly offset the use of developed, potable

water for landscape, gardening, and other outdoor purposes. With proper incentives and guidance, private property owners within the NID service area can collect and store winter and spring precipitation for late spring and summer use. NID, in partnership with its retail water supply partners, should develop programs to encourage rainwater harvesting for residential and agricultural customers.

- e. **Retrofit existing buildings.** NID should work with the local jurisdictions to ensure that buildings are retrofitted with water efficient fixtures. NID should provide effective incentives to spur installation of water efficient fixtures and appliances by residential and commercial water users.
- f. **Landscape to minimize water waste.** NID should work with local agencies to separately meter large users of irrigation water and implement a pricing structure that encourages efficiency, including rain and moisture sensors for irrigation systems and the use of native and drought-tolerant plants. NID should consider providing incentives for turf-removal and irrigation efficiency to reduce total outdoor water use.
- g. **Eliminate ditch-end spill.** Substantial water could be saved through the implementation of modern distribution channel control systems. For the years 2011 through 2014, NID's average annual raw water use was 111,000 acre feet.<sup>28</sup> As is the case with most irrigation districts, this distribution system is manually controlled. Often, to ensure that all water orders are filled in a canal, extra water is sent down the canal, and any surplus water spills at the end of the canal. It is estimated that approximately 10% of agricultural water, in this case 11,100 af/year, is spilled in this manner. Oakdale Irrigation District (OID) has implemented water distribution system controls on two of its key canals, which has reportedly yielded 8-10% in water savings. The technology, called Total Channel Control (TCC), allows reduction or elimination of ditch-end spill. OID's TCC system, built by Rubicon Systems and installed in 2011, uses software, control engineering, and wireless and solar systems to remotely manage flume gates to distribute water to farms. NID should evaluate its major distribution conveyances to determine which could most benefit from Total Channel Control. A savings of 11,100 acre-feet per year would be a significant contribution to a viable alternative to "new" water from Centennial Reservoir.<sup>29</sup>
- h. **Reuse treated wastewater.** NID should work with local agencies to reuse treated wastewater for non-potable uses, such as irrigation of golf courses, ball fields, parks, and residential/commercial lawns and landscaping. Treated wastewater could also be used for evaporative chillers for commercial cooling systems, boiler makeup water for steam heating systems, and other commercial uses.

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<sup>28</sup> NID, Agricultural Water Management Plan, 2015, Table 3-1. [http://nidwater.com/wp-content/uploads/2011/12/FINAL2015\\_Agricultural\\_Water\\_Mgmt\\_Plan\\_012916.pdf](http://nidwater.com/wp-content/uploads/2011/12/FINAL2015_Agricultural_Water_Mgmt_Plan_012916.pdf)

<sup>29</sup> See [http://www.roaringfork.org/media/1192/rubicon\\_overview\\_november\\_2014-carbondale.pdf](http://www.roaringfork.org/media/1192/rubicon_overview_november_2014-carbondale.pdf)

- i. **Reuse graywater.** NID should work with local agencies to reuse graywater for commercial applications such as hotels, dormitories, and apartment buildings, and for residential applications.
- j. **Integrate multiple use into stormwater permits.** NID should work with local agencies to ensure that stormwater permits incorporate measures to restore urban watershed stream hydrographs to (or near) the natural hydrograph that existed before urbanization. This may include on-site retention standards for new construction, wetland restoration and groundwater recharge goals to mitigate for impervious surfaces, and rainwater capture and reuse goals or performance standards.

### Watershed Approach Alternative

The DEIR should evaluate an alternative that would meet part of its Project objectives by increasing groundwater recharge and restoring meadows, wetlands, and floodplains, as described below.

- a. **Seek opportunities for groundwater recharge storage and banking.** The DEIR should evaluate groundwater recharge, storage and banking opportunities both locally and at a state level. The Mehrten formation in the eastern portion of the Sacramento Valley and low foothills, including portions of NID's service area, is well known and suited to groundwater recharge to the American River Subbasin. A collaborative conjunctive use approach to groundwater management is possible for all surface and groundwater users overlying the American River Subbasin. Placer County Water Agency completed its Western Placer County Groundwater Management Plan in 2003, describing conjunctive use by the Cities of Lincoln and Roseville. SSWD reversed historic groundwater overdraft by the construction of Camp Far West Reservoir and SSWD's supply of surface water to farmers who had been dependent on groundwater.
- b. **Seek opportunities for meadow and wetland restoration.** The DEIR should evaluate restoring and preserving floodplain and former floodplain wetland acres for water storage. The release of this banked water during dry periods can increase flows for water supply, dilution for point source dischargers, and aquatic habitat. Within the NID watershed, Sierra meadow restoration offers considerable opportunity for increasing yield and duration of headwaters water supplies.

A recent study found that restoring all meadows on National Forest Land in the Sierra Nevada could provide an additional 35,000 acre-feet of annual groundwater storage, plus additional temporary surface water storage when meadows are flooded.<sup>30</sup> Assuming similar conditions for the ~2,800 acres of meadow in the upper Bear, South Yuba, Middle Yuba, and Deer Creek watersheds, meadow restoration could create an additional ~443 AF of annual groundwater storage, not including added surface water storage during

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<sup>30</sup> USDA Forest Service, Pacific Southwest Region 2015. Effects of Meadow Erosion and Restoration on Groundwater Storage and Baseflow in National Forests in the Sierra Nevada, California. [http://www.waterplan.water.ca.gov/docs/cwpu2013/Final/vol4/environment/10Meadow\\_Restoration\\_GW\\_Final.pdf](http://www.waterplan.water.ca.gov/docs/cwpu2013/Final/vol4/environment/10Meadow_Restoration_GW_Final.pdf)

overbank flooding. Numerous pond and plug meadow restoration projects were completed in the Feather River watershed at an average cost of \$1,790/acre restored,<sup>31</sup> which corresponds to a cost of \$1,630 - \$6,840/AF of groundwater storage increase.<sup>32</sup>

- c. **Seek opportunities for forest and watershed restoration.** Additional watershed restoration actions that benefit water supply and water storage should be considered as well. Recent estimates indicate that a three-fold increase in thinning on National Forest Land for ecological health and fire resilience could result in ~10,000-40,000 AF of increased water yield in the Yuba watershed for \$85 million, and ~2,000 AF of increased water yield in the Bear watershed for \$7 million.<sup>33</sup>

### Pricing for Efficiency Alternative

The DEIR should evaluate rate modifications as a component of an alternative to help NID meet its current and projected water demand. NID should price water to cover the full costs of water delivery and to encourage efficiency. NID should estimate the demand reductions from pricing water for efficiency. Despite complications posed by Propositions 26 and 218, water utilities in California have successfully built rate tiers that reflect full cost pricing of providing incremental volumes of additional water, and that impose penalties for wasteful use.

- a. **Evaluate full cost pricing.** Water rates that reflect the full cost of service can help utilities capture the actual costs of operating water systems, raise revenues, and also help to conserve water.
- b. **Evaluate conservation pricing.** Water rates and fees should reward water conservation. Rates need to be designed so that the price is sufficient to encourage conservation. The idea that having to pay more means using less is a basic tenet of markets. Price elasticity, which is the measure of how demand will change with a change in price, is determined for specific goods and services through empirical studies conducted and analyzed by economists and mathematicians. Price elasticity of demand (PED) shows the relationship between price of a good and quantity of the good demanded. In general, the demand for a good is said to be *inelastic* (or *relatively inelastic*) when the PED is less than one in absolute value. That is, changes in price have a relatively small effect on the quantity of the good demanded. Price elasticities are almost always negative.

Using panel data from a period of water rate reform, a relevant publication found the price elasticity of agricultural water demand to be - 0.79, which is greater than that found

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<sup>31</sup> Ecosystem Economics and Stillwater Sciences 2012. An Economic Analysis of Meadow Restoration. [http://www.fs.fed.us/r5/hfq/g/monitoring/resource\\_reports/socioeconomics/Economic%20Analysis%20of%20Meadow%20Restoration%202012.pdf](http://www.fs.fed.us/r5/hfq/g/monitoring/resource_reports/socioeconomics/Economic%20Analysis%20of%20Meadow%20Restoration%202012.pdf)

<sup>32</sup> American Rivers 2012. Evaluating and Prioritizing Meadow Restoration in the Sierra. <http://www.americanrivers.org/assets/pdfs/meadow-restoraton/evaluating-and-prioritizing-meadow-restoration-in-the-sierra.pdf?dad3dd>

<sup>33</sup> The Nature Conservancy 2015. Estimating Water Supply Benefits from Forest Restoration in the Northern Sierra Nevada. <http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/california/forest-restoration-northern-sierras.pdf>

in previous studies.<sup>34</sup> The referenced analysis was based on large-scale agriculture; price elasticity for raw water delivered to smaller holdings is likely to be less negative.

To provide an example, assume a price elasticity for raw water of -.6. Assume also the rate for one miner's inch from NID Rate Schedule 5-D (water rates for raw water utilized inside District on an annual basis). Under this schedule, the bimonthly rate for one miner's inch is \$229.92, or \$1,379.52 per year. One miner's inch delivers 18.26 acre-feet in a year. The price of raw water per acre-foot in this example would thus be \$75.54. If water rates were increased by 10%, application of a price elasticity of -.6 would expect to result in decreased demand by 6%, or an average of 6,651 af/yr.

- c. **Evaluate rural estate pricing.** The DEIR should evaluate an alternative in which NID reconfigures its rate structure to differentiate varying uses of what it currently categorizes as "agricultural water." The alternative should evaluate creation of a separate use category and price structure for rural estate use.

NID's 2012 Agricultural Water Management Plan (AWMP) showed that NID delivers over 130,000 acre-feet of "agricultural water" annually, compared to deliveries of approximately 12,000 acre-feet for municipal, industrial, and domestic treated water.<sup>35</sup> The current system is a legacy of intense commercial agriculture before World War I, the historic peak in the foothills. Today, the rural landscape has transitioned to rural estate subdivision (2.5 to 20 acre parcels) with high land and home values. All houses are required to have a domestic well.

At present, there is no system of conservation water pricing in place for this category of use that accounts for the vast majority of NID's water deliveries. There is no feasibility assessment or plan to convert the ditch system to an efficient piped and pressurized delivery system over the next century. Rural estate pricing would allow NID to meet its future service area needs without investing in more expensive supply-side projects, while honoring the need of actual commercial agriculture for competitively priced water. The present system of raw water delivery, instead, encourages a "use it or lose it" ethic of water waste.

### **The DEIR must adequately analyze the Project's cumulative impacts.**

CEQA defines cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." CEQA Guidelines § 15355; *see also Communities for a Better Env't v. Cal. Res. Agency* (2002) 103 Cal.App.4th 98, 120. An effect is "cumulatively considerable" when the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects,

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<sup>34</sup> "Price Elasticity Reconsidered" Water Resources Research, Vol. 42, 2006  
<http://onlinelibrary.wiley.com/doi/10.1029/2005WR004096/full>

<sup>35</sup> NID Agricultural Water Management Plan, 2012, Table 4.5.  
<http://www.water.ca.gov/wateruseefficiency/sb7/docs/2014/plans/Nevada%20ID%20Ag-Water-Management-Plan-Final.pdf>

the effects of other current projects, and the effects of probable future projects.” CEQA Guidelines §15065(a)(3).

A thorough cumulative impacts analysis requires a geographic and temporal scope of analysis sufficient to determine the significance and cumulatively considerable impacts of the proposed project on resources of concern when considered in combination with other closely related projects and actions. Hydrology, water quality and aquatic resources in the Bear River watershed are likely significantly impacted by many past and present projects, both individually and cumulatively. It is worth noting that many closely related projects and actions are under the direct (though not sole), closely related control of the Project proponent.

Hydrology, water quality and aquatic resources in the Bear River watershed are affected by the import of water from the South Yuba River and Middle Yuba River watersheds. This activity also affects hydrology, water quality and aquatic resources within the South Yuba River and Middle Yuba River watersheds. Both the geographic and temporal scopes of the DEIR must be sufficiently broad to capture and evaluate the cumulative impacts of the interaction of the interaction of these watersheds.

The DEIR must analyze the cumulative impact on public services in the greater Colfax area if existing recreational opportunities are eliminated or modified. The DEIR must evaluate changes in revenue to local businesses and to the tax base that supports public services within the economically disadvantaged greater Colfax area.

Past closely related projects within the geographic scope of the DEIR have significantly impacted tribal cultural resources. The DEIR must analyze the Project’s additional cumulative impact on these irreplaceable resources as even more tribal cultural sites, currently in use, are drowned.

The DEIR should examine the cumulative effects of the Project on cultural, recreational, biological and water resources from the standpoint of a Bear River that has already been mostly converted to reservoirs. The extent of reservoirs on the Bear River places unique value on the six-mile stretch of river that will be converted a new reservoir by Centennial Dam.

Centennial Dam would be sandwiched by existing reservoirs upstream and downstream. The six mile reach of the Bear River that would be transformed into a new reservoir is a natural ecosystem and provides significant habitat as well as migration corridors: north/south river crossing of terrestrial species, and upstream/downstream migration of aquatic species. If this last reach of river is converted to reservoir, the impact will be magnified because it will establish an almost unbroken 20-mile reservoir system from Combie Dam to Chicago Park Powerhouse above Rollins Reservoir. The DEIR must provide a landscape-scale analysis of this already cumulatively impacted 20-mile reach. The DEIR must also analyze the cumulative impact of this 20-mile reservoir reach within the watershed as a whole.

Impacts to various resources are not the same as they would be absent the other reservoirs. Alternative sections of the Bear River are largely not available to river recreationists due to the loss of river reaches by existing Bear River dams. The DEIR must evaluate the cumulative

impacts on recreation of the elimination of free public access at the Bear River near Dog Bar Road. There is currently free swimming and rafting at the river, and public access at the Bear River campground is free. The Bear River is the best option for water-related recreation for the economically disadvantaged population of the greater Colfax area. It is the main local place to go on hot summer days.

Fall-run Chinook salmon spawn and rear in Dry Creek (Spenceville), a tributary to the Bear River downstream of Camp Far West Reservoir. These salmon, as well as fall-run and spring-run salmon and Central Valley steelhead and sturgeon natal to the Feather River and Yuba River, are likely to use the Bear River downstream of Camp Far West Reservoir for rearing in the winter-spring period. The DEIR should evaluate how the proposed Project will alter hydrology of the lower Bear River downstream of Camp Far West, and analyze how this will affect the suitability of the lower Bear River as winter-spring rearing habitat and as a fall migration corridor for fall-run Chinook seeking to enter Dry Creek (Spenceville).

Water releases from Oroville Reservoir into the lower Feather River are highly regulated. Winter-spring pulses flow releases from Oroville are not currently required and are rare in dry years and dry year sequences. The same is true to a lesser degree in the Yuba River, although partially unregulated flows from the South Yuba River and Deer Creek create winter-spring pulses into and out of the lower Yuba River with more frequency than occur in the lower Feather River above Yuba River confluence. Flood flows from the Bear River may provide unusual opportunities to juvenile salmonids and sturgeon in the lower Feather River system to successfully migrate out of the lower Feather River system. They may also provide several days or weeks of rearing opportunities in the lower Bear River, even for fish born in the Feather or Yuba. The DEIR must analyze Project impacts to the lower Bear River in the context of this relative scarcity of rearing habitat in the lower Feather River.

The DEIR should situate the effects of the proposed Project in the context of the aquatic resources of the Bay-Delta estuary under today's conditions. These aquatic resources are seriously degraded, and some native species are at high risk of extinction. The impact of incremental reductions in inflow and outflow under these degraded conditions is greater than it would be under conditions in the aquatic ecosystem were not already so damaged.

As noted above, the geographic scope of the DEIR should include watersheds from which water is drawn to the Bear River, in particular the South Yuba River and Middle Yuba River watersheds; areas to which Bear River water is exported through NID's water deliveries, such as Auburn Ravine, Coon Creek, Doty Ravine, and Folsom Reservoir; downstream areas of influence of the Bear River, including the Feather River, Dry Creek (Spenceville), the Sacramento River and the Bay-Delta estuary; and areas of the San Joaquin watershed to the degree that deprivation of Delta inflow and outflow may affect water resources and uses there.

The temporal scope of the DEIR should include the period immediately prior to the construction of the first impediments to spawning, rearing, and outmigration of salmonids in the Bear River through reasonably foreseeable future projects potentially affecting water and aquatic resources, in particular flow volume and temperature, that will affect both anadromous and resident aquatic species in the Sacramento Bay-Delta system.

Future closely related projects should include any contemplated modification, construction, or re-operation of hydroelectric power facilities and modification or construction of water storage and conveyance within the geographic scope of the DEIR; otherwise, the DEIR should state explicitly that these are not contemplated within the lifespan of the project. Closely related projects or actions cumulatively analyzed should include all past, present, and future mining, debris management, hydroelectric development, water supply development, flood control development, and recreational development within the geographic and temporal scope.

The DEIR must not limit its geographic and temporal scopes to the localized project and its immediate future impacts, because this would deny the public and decision makers sufficient information to comprehend the Bear River watershed's effects and contributions to the watersheds and the critical habitat in the Sacramento Bay-Delta system. The concept of a "baseline" of existing conditions, while acceptable in terms of determining significance of cumulative impacts, does not relieve the Project proponent of the duty to enumerate and analyze a sufficiently inclusive geographic and temporal scope in order to determine if a project's incremental impacts are cumulatively considerable. The determination of significance is a separate task based on a complete and credible analysis of past, present, and future projects and on actions closely related as a result of the inherently connected character of a watershed or watersheds, and associated estuarine environments, as in the case of Centennial Reservoir.

## **Conclusion**

Thank you for consideration of the Network's comments on the NOP for the Centennial Project. Please contact Traci Van Thull, Coordinator, Foothills Water Network, if you have any questions.

Respectfully submitted,



Foothills Water Network

A rectangular box containing a handwritten signature in dark ink. The signature appears to be 'T. Van Thull'.

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A handwritten signature in black ink, appearing to read "Gary Reedy". The signature is fluid and cursive, with a long, sweeping tail on the final letter.

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A handwritten signature in black ink, appearing to read "Dave Steindorf". The signature is cursive and somewhat stylized, with a long, sweeping tail on the final letter.

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A handwritten signature in blue ink, appearing to read "Tom Mooers".

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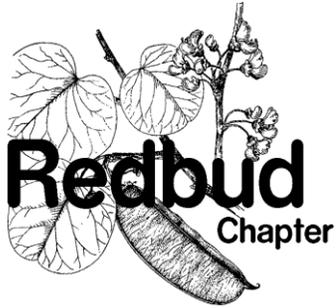
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A handwritten signature in black ink, appearing to read "Richard Johnson".  

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Richard Johnson, Tribal Chairman



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A handwritten signature in blue ink that reads "Jonathan Keehn". The signature is written in a cursive, flowing style.

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A handwritten signature in black ink on a grey rectangular background. The signature reads 'Jack Sanchez' in a cursive script.

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A handwritten signature in black ink. The signature reads 'Otis Wollan' in a cursive script.

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