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## **ATTACHMENT G**

### **Surplus Criteria Proposal by Pacific Institute**

This attachment contains correspondence from the Pacific Institute for Studies in Development, Environment, and Security. Included are a February 15, 2000 letter report presenting their proposed alternative for interim surplus criteria and an excerpt from their September 8, 2000 letter of comment on the DEIS, in which they propose certain modifications of the alternative proposed in February. The entire text of their September 8, 2000 letter is reproduced in Volume III.

American Rivers · Defenders of Wildlife · Environmental Defense · Friends of Arizona Rivers  
Glen Canyon Institute · Grand Canyon Trust · Land and Water Fund of the Rockies  
Pacific Institute for Studies in Development, Environment, and Security  
Sierra Club · Sonoran Institute

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RE: Colorado River Interim Surplus Criteria

February 15, 2000

Dear Mr. Hayes and Mr. Johnson:

On behalf of American Rivers, Defenders of Wildlife, Environmental Defense, Friends of Arizona Rivers, Glen Canyon Institute, Grand Canyon Trust, Land and Water Fund of the Rockies, the Pacific Institute for Studies in Development, Environment, and Security, Sierra Club, and the Sonoran Institute, we submit the following set of interim surplus criteria. We support the development of interim surplus criteria that would facilitate California's reduction in demands on the Colorado River to 4.4 million acre-feet (maf) per year by the year 2015. Yet, absent explicit environmental safeguards, interim surplus criteria for the Colorado River could have long-term negative impacts on the Colorado River Delta. We write to ensure that the needs of the Delta are recognized and satisfied as California implements its 4.4 Plan. We submit the following general set of interim surplus criteria as an alternative that would balance the municipal and industrial (M&I) water needs of Southern California and Southern Nevada with the instream flow requirements of the lower Colorado River and its Delta. We urge you to consider these interim criteria in the upcoming draft Environmental Impact Statement.

In his speech before the Colorado River Water Users Association in Las Vegas last December, the Secretary of the Interior described an important environmental baseline that should inform the development of interim surplus criteria. The Secretary stated that surpluses must be determined and allocated with *no net loss* of environmental benefits. "No net loss" sets an important minimum standard and is a welcome commitment by the Secretary.

### **Background**

Historically, prior to the construction of dams, diversions, and other reclamation projects, millions of acre-feet of Colorado River water flowed every year through the Colorado River Delta and into the Upper Gulf of California, supporting tremendous levels of biological productivity and diversity. The Delta has been degraded as human demands have dramatically reduced the amount of water reaching the Delta. Except for years with unusually high run-off, virtually the entire flow of the Colorado is now captured and used before reaching the river's mouth. However, even without the historic flows, the remnants of the Delta and Upper Gulf still comprise the largest and most critical desert wetland in North America, as well as one of the world's most diverse and productive marine ecosystems. In recent years, flood release flows from upstream dams have prompted the re-emergence of ecologically valuable riparian habitat and have been strongly correlated with a rise in the shrimp catch in the Upper Gulf, an indication of the renewed viability of an important estuary. In 1993, Mexico affirmed the importance of the region and designated it a Biosphere Reserve, which has since received international recognition.

At its upper reaches, the Delta is dominated by vegetation such as cottonwoods and willows, offering more than twice the amount of native riparian habitat found in the entire reach of the river in the United States from Hoover Dam to Morelos Dam. The native riparian vegetation of the lower Colorado River and the Delta evolved in response to occasional flood events; such flows must be replicated to ensure the continued viability of these species. The middle extent of the Delta contains extensive backwaters filled by occasional floods, providing valuable wetland habitat for migratory birds as well as a myriad of local species. The Delta supports several species listed by the U.S. Fish & Wildlife Service, including southwestern willow flycatchers (*Empidonax traillii extimus*), Yuma clapper rails (*Rallus longirostris yumanensis*), totoaba (*Totoaba macdonaldi*) and desert pupfish (*Cyprinodon macularius*), while the river's estuary is home to the vaquita porpoise (*Phocoena sinus*), the world's most endangered marine mammal.

Interest in the Delta of the Colorado River has grown markedly in the past decade. Scientists from Mexico and the United States are studying the physical and biological characteristics of the region, increasing our understanding of its value not only as a desert wetland and stopover on the Pacific Flyway, but also as a species reservoir for the lower Colorado River as a whole. Historically, plant and animal species moved upstream to recolonize the riparian corridor of the lower Colorado after periodic large-magnitude floods devastated that reach of the river. Recent, preliminary research indicates that the quantity of Colorado River baseline flows necessary to sustain the upper reaches of the Delta on an annual basis is at least 32,000 acre-feet, with periodic flood flows of at least 260,000 acre-feet every four years, on average, to promote seedling recruitment.<sup>1</sup> These instream flows thus represent the minimum quantities necessary to prevent a net loss of environmental

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<sup>1</sup> See Glenn, Edward P., Valdes-Casillas, Carlos, "Importance of United States' Water Flows to the Colorado River Delta and the Northern Gulf of California, Mexico," unpub. October 13, 1998, at 14; and Luecke et al., *A Delta Once More*, Washington, DC: EDF Publications, June 1999.

benefits in the upper reaches of the Delta. (Such flood flows would also have a demonstrable salutary effect on the lower reach of the Colorado River within the United States, freshening backwaters and promoting germination of native vegetation.) Ongoing research will further improve our understanding of the ecosystems of the Delta and Upper Gulf. This research will also describe the instream flow requirements of other elements of the system. When they become available, these refined assessments of instream flow requirements should be incorporated into the interim surplus criteria described in the following.

#### ***No Net Loss***

The Secretary's "no net loss" standard should be applied to the losses to the Delta from allocating "surplus" water to California and to any other potential losses in the United States or Mexico. No water shall be considered surplus until the Secretary has been assured, through a plan for releases of sufficient instream flows, mitigation, reservoir management, and other measures, that additional consumptive use would cause no net loss of the environmental benefits that would result if the potential "surplus" were left in the river. Water is surplus only if those benefits are maintained by flows or through mitigation. Managing water available in the river after satisfying the lower basin and Mexican apportionments could benefit riparian areas or wetlands or fish and wildlife or endangered species or water quality, in the United States and/or in Mexico. If there is scientific evidence that these benefits would be lost by consuming the water, no determination of surplus shall be made until the loss of those benefits can be mitigated.

An assessment of the environmental benefits that could accrue if the erstwhile surplus water were not consumed is therefore a prerequisite to allocating surpluses. Conducting such an assessment will require a well-funded adaptive management program for the Delta that includes monitoring and research. Such a program should be an integral component of the interim surplus criteria. Such an adaptive management program is necessary to understanding the environmental baseline and satisfying the Secretary's no net loss standard.

#### ***Discretion***

Allocation of surplus water, over and above the basic lower basin apportionment, is a discretionary function of the Secretary that can and should be exercised consistent with other responsibilities incumbent upon him for allocating the benefits of the river, planning its use, and protecting its resources. Past decisions on development, basic allocations, and operations were made before most of those other responsibilities had been articulated under laws and policies of the United States. This has resulted in serious environmental harm. Given this situation, the Secretary can and should use his discretion in this more enlightened era to the maximum extent possible to ensure that his decisions result in no further harm and, wherever possible, in an improvement of environmental quality.

Environmental needs must be met before any quantity of discretionary water is dedicated to consumptive uses. Until then it is not truly "surplus." Environmental losses

were perhaps unfortunate consequences of the basic allocations embedded in the law of the river and related development; but they need not be perpetuated when the Secretary has discretion over whether and when to allocate additional water. The Secretary recognized as much when he insisted that the surpluses must be determined and allocated with no net loss of environmental benefits.

### *Surplus Criteria*

We support the development of interim surplus criteria to guide the Secretary of the Interior's decision to determine a surplus condition for the Colorado River. We agree that interim surplus criteria should facilitate California's reduction in consumptive use of Colorado River water down to California's entitlement of 4.4 maf/year. Since the objective is California's successful and timely implementation of a 4.4 Plan, surplus criteria should be interim and should be explicitly linked to California's diligent and timely reduction of demand on Colorado River water. We are in general agreement with the principle offered by the Six States' proposal that interim surplus criteria should be directed towards providing greater security of supply through the Colorado River Aqueduct (CRA), after all other potential sources of Colorado River water are exhausted. We further agree that the declaration of surplus under the interim criteria should be explicitly linked to California's diligent implementation of water conservation strategies as specified in the 4.4 Plan, and that surplus allocations should be suspended in the absence of such implementation. In any case, these interim criteria should expire in 2015.

Absent a prolonged above-average cycle of precipitation in the Upper Basin and explicit environmental safeguards, the interim surplus criteria would reduce Colorado River reservoir storage, in turn decreasing the likelihood of the flood release and space-building flows that sustain the Colorado River Delta, undermining efforts to restore and preserve the Delta and violating the Secretary's no net loss standard.

Prior to the implementation of interim surplus criteria, there must be a guaranteed delivery of water to the Delta. Surplus conditions should not be declared until sufficient water is identified and scheduled to be delivered to meet the water needs of the Delta, as described above. Article II(A) of the Supreme Court Decree (1964) states that "river regulation" and flood control are the Secretary's first priority in managing the Colorado River, precedent over deliveries for consumptive uses. "River regulation" has yet to be satisfactorily defined; today it necessarily encompasses the full range of the Secretary's authority and missions under current law including but not limited to fish and wildlife, recreation, water quality, and conservation of endangered species. As a first priority under the Decree, "river regulation" would therefore permit the delivery of water to the Delta as described below.

We recommend an interim tiered strategy to meeting the needs of both the Delta and the municipal and industrial needs of California's coastal plain and of southern Nevada. This tiered strategy is a modified version of that proposed by the Six States in December 1998. In this modified approach, guarantees of delivery to satisfy the baseline needs of

the Delta would be made before any surplus flows for M&I could be allocated in the United States or Mexico. In the tiered interim surplus strategy outlined in the following, surplus agricultural deliveries could only be scheduled after the Secretary makes his no net loss determination as described above, including scheduling the necessary delta flood flows. Diversions for off-stream storage and groundwater banking would be permitted from flood release flows.

### **Proposed Interim Surplus Criteria**

We recommend that the Interim Surplus Criteria contain the following provisions:

No water shall be considered surplus until the Secretary has been assured, through a plan for releases of sufficient instream flows, mitigation, reservoir management, and other measures, that additional consumptive use would cause no net loss of the environmental benefits that would result if the potential "surplus" were left in the river. If there is scientific evidence that these benefits would be lost by consuming the water, no determination of surplus shall be made until the loss of those benefits can be mitigated. The Secretary shall make a no net loss determination before releases at any of the three surplus tiers — partial M&I, full M&I, or full surplus.

The Secretary's no net loss determination shall be based on an assessment of the lower Colorado River as a whole, including the Colorado River Delta. Conducting such an assessment will require a well-funded adaptive management program for the Delta that includes monitoring and research. Current research, based on empirical evidence from the past decade, suggests that the baseline and Delta flood flow releases described below may serve as interim mitigation measures. The Delta flow requirements and other conditions necessary to achieve no net loss shall be adjusted from time to time as the Secretary deems appropriate based on scientific and technical information.

The surplus criteria described below are interim and are intended to expire in 2015.

#### **1) Normal Year**

Normal years will be declared when available Lake Mead storage is at or below elevation 1120.4 (13.40 maf storage). This level will allow a minimum of five years of normal year deliveries through a drought cycle represented by the 34<sup>th</sup> percentile lowest five year average of historic runoff. At the end of the five-year period, the reservoir elevation would be at 1083, which is the minimum power head (9.764 maf content).

#### **2) Baseline Delta Flows**

When Lake Mead storage is above elevation 1120.4, the Bureau of Reclamation will deliver at least 32,000 af to the Delta.<sup>2</sup> These waters shall be released on a consistent, regular basis, to provide a perennial flow for the upper reaches of the Delta.

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<sup>2</sup> Quantities of water determined sufficient to provide baseline and flood flows for the Colorado River Delta shall be adjusted periodically through adaptive management based on ongoing research and data

3) **Partial M&I Surplus**

Equivalent to the Six States' 1998 proposal, that releases will be dependent on the water demands in the given year, reduced by the conservation opportunities available in dry years. This tier yields a maximum surplus of about 412,000 af for California and half of Nevada's demonstrated surplus demand. Total volume of this tier is equivalent to that needed to deliver 1.212 maf through the CRA, considering the amount of core transfer programs already in place, less 250,000 af. This tier is implemented between Lake Mead elevation 1125 and elevation 1145, upon a "no net loss" determination by the Secretary, as described above, and based on such conditions and operational changes as the Secretary may require.

4) **Full M&I Surplus**

Equivalent to the Six States' 1998 proposal. This would effectively make available an additional 250,000 af for MWD, after other sources had been exhausted, and would satisfy southern Nevada's full M&I needs. In this tier, surpluses could not be used for offstream storage, groundwater banking, or agricultural uses. This tier is triggered at Lake Mead elevation 1145, upon a "no net loss" determination by the Secretary, as described above, and based on such conditions and operational changes as the Secretary may require.

5) **Delta Flood Flows**

This tier is triggered by the Bureau of Reclamation's 70 percent flood control avoidance (70A1) elevation, which is the elevation required on January 1 to avoid flood control releases with a 70% assurance over the next sixty years. This is a slightly more liberal definition of surplus than the Bureau's "70R" criteria. When the surface of Lake Mead exceeds this elevation at the beginning of the year, the Bureau will deliver at least 260,000 af to the Delta.<sup>2</sup> These waters shall be released as late in the Spring as possible without violating Army Corps of Engineers flood control release guidelines.

6) **Full Surplus**

Upon a "no net loss" determination by the Secretary, as described above, and based on such conditions and operational changes as the Secretary may require, this tier is triggered when an assumed runoff, set at the 70<sup>th</sup> percentile of exceedance (roughly 17.3 maf), less uses and losses and delta flood flows, would cause Lake Mead elevation on January 1 to exceed the required system space capacity of 5.35 maf. In this tier, agricultural uses would be permitted, in addition to the M&I permitted in previous tiers.

***Shortage Criteria***

The implementation of surplus criteria based upon demand rather than supply, as is the case with the California 4.4 Plan and current efforts to develop security of supply through the CRA, will increase the likelihood of shortage conditions on the river in future years. The Department of the Interior should define shortage criteria so that stakeholders

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will be better able to project future supply and plan accordingly. The Record of Decision should commit the Department of the Interior to commencing rulemaking and appropriate environmental reviews at once, leading to setting shortage criteria that will be based on principles consistent with those that guide the surplus criteria, including protection against net loss of environmental benefits.

***Mexico and the Delta***

If at any time surplus flows intended to benefit the Delta are intercepted and consumed by users within Mexico, further deliveries of surplus waters for such purposes shall cease unless and until Mexico enters into a commitment to prevent future releases from being diverted and consumed and to guarantee their delivery to the Delta.

***Mexico and Surplus***

Article 10 of the 1944 Treaty with Mexico grants the International Boundary and Water Commission (IBWC) the discretion to determine surplus flows to Mexico. It is therefore beyond the scope of the current process to set surplus criteria for Mexico.

Thank you for the opportunity to participate in this important process.

Sincerely,

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Excerpts from

Pacific Institute Comments

on the

Colorado River

Interim Surplus Criteria

Draft Environmental Impact Statement

A report of the

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DEVELOPMENT, ENVIRONMENT AND SECURITY**

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The following information is excerpted from an attachment to the Pacific Institute's letter of September 8, 2000 commenting on the Colorado River Interim Surplus Criteria Draft EIS.

### **PACIFIC INSTITUTE PROPOSAL**

The "Environmental Interim Surplus Criteria," submitted by ten NGOs and subsequently endorsed by the Center for Biological Diversity and The Wilderness Society, should be analyzed in a supplemental DEIS. These criteria would satisfy the objective of facilitating California's reduction in its use of Colorado River water, without forcing the environment to bear the costs of such actions. Although similar in many respects to the Six States Plan, the Environmental Criteria differ sufficiently to merit appraisal in a supplemental DEIS.

In the following, and per previous conversations and correspondence with Reclamation staff, we offer suggestions as to how best to model the Environmental Interim Surplus Criteria, and suggest several specific projections that should be included in the supplemental DEIS.

#### Clarifications:

- Reclamation should model the monthly release schedule under "2) baseline delta flows" so that these delta flows are relatively constant throughout the year
- Reclamation should model the monthly release schedule under "5) delta flood flows" so that 100% of such releases are made from May through July, peaking in June at a ratio of 35%: 45%: 20% (flows in other months would be released by the baseline flow trigger, above)
- Due to difficulties in modeling a Secretarial determination of "No Net Loss," for the purposes of modeling Reclamation should assume that such a determination is made

#### Differences between the Environmental Criteria ("NGO") and the 7 States' Plan ("States"):

- **Normal elevation trigger:**  $\leq 1120.4$  for NGO,  $\leq 1125$  for States
- **Baseline delta flows** 0.032 MAF above elevation 1120.4 for NGO; none for States
- **Partial M&I/Domestic surplus elevation** triggered between 1125 & 1145 for both; for purposes of these modeling runs, the quantities of water released under the two plans are equivalent
- **Full M&I/Domestic Surplus** triggered above elevation 1145. NGO plan equivalent to States' plan with the following exceptions: Total deliveries through the Colorado River Aqueduct would be limited to 1.212 million acre-feet under the NGO plan instead of 1.250 under the States' plan
- **Delta Flood Flows** triggered by Reclamation 70 percent flood control avoidance elevation (70A1) under the NGO plan; no such release under the States'

- **Full Surplus/Quantified Surplus** 70R trigger for both plans, although for the purposes of determining the trigger elevation the NGO plan considers the above delta baseline and flood flows as “uses” and the States plan does not (so the trigger elevation will be higher under the NGO plan). Unlike the States’ plan, under the NGO plan, no water would be made available to California or Nevada for off-stream storage, including groundwater banking, under this tier, and no surplus water would be made available to Arizona for such purposes under this tier.
- **Flood Control Surplus** equivalent for the two plans
- **Shortage Criteria** the NGO plan does not establish shortage criteria