



# E-PARCC

COLLABORATIVE GOVERNANCE INITIATIVE

Syracuse University

Maxwell School of Citizenship and Public Affairs

Program for the Advancement of Research on Conflict and Collaboration

## Restoration of the Wic Wac Valley Simulation

### Background

The Wic Wac Valley is a 10-mile long, narrow glacier valley in the Tierra del Oro Mountains in the American West. The valley was dammed by the Army Corps of Engineers in collaboration with the growing metropolis of Santa Loka way back in 1923. The dam, named O'Halloran Dam after the engineer, is a marvel of engineering efficiency and design. The reservoir has operated successfully for more than 80 years, producing 30 to 40 percent of Santa Loka's water supply needs and generating hydroelectric power, as well as serving flood control needs downstream. Santa Loka receives water from the Wic Wac Reservoir some 150 miles away through canals, pipelines, river segments and several lower reservoirs, which were constructed after O'Halloran Dam was built. The Wic Wac Reservoir is used also for boating and fishing as a recreational resource, although few visit it each year because of its remote location.

Even in the 1920s, the battle over whether to build the dam was long and difficult because the Wic Wac Valley was universally regarded as one of the most spectacular glacial valleys in the world and it was within a National Forest. The utility district that serves Santa Loka leases the reservoir from the National Forest Service and has done so for a nominal price for more than 80 years.

The "culture" of dam building has changed considerably in the past 30 years. Few, if any, new projects are being built and many smaller dams are being removed to try to restore rivers and streams back to a more natural state, with the resulting functional aspects of streams and fisheries. Because of its spectacular beauty, which almost no one has ever seen except

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from very old and faded photographs, and the fact that it was constructed in a federally-protected forest, the Wic Wac Reservoir has always been the environmentalist's "poster child" for a dam that should not have been built. On the other hand, because it sits in a steep-sided granite valley with little sediment build up, it holds very cold, clean water. Thus, it is also seen as a model place for storing water for human use. Suffice it to say, the "sides" in the debate over the Wic Wac are sharply divided and almost "religious" in their belief that the other side's arguments make no sense.

Recently, the idea of fully restoring the Wic Wac Valley has surfaced in a more serious manner than ever before. Environmentalists have long argued to study the idea, but the Santa Loca Utility and the City of Santa Loca, as well as several state senators and other powerful politicians, have squelched the discussion as "impractical," "unrealistic" and "lunacy." Santa Loca is already "water short" and surface water storage is in limited supply. The opponents have long argued that it would be unwise to reduce storage that is already available--and paid for--when more storage is probably needed to meet future needs. However, two events have made the idea seem more plausible, at least to some interests:

- 1 A study of Santa Loca's aging water storage and delivery system, conducted by the utility itself, indicates that over \$3 billion needs to be spent to repair damaged conditions and bring the system into compliance with modern earthquake and security standards.

2. A university modeling study, done by a graduate student under the direction of a well-respected engineering professor, has demonstrated that there is adequate water storage in downstream agricultural reservoirs, built in the 1950s and 60s, and the valley floor groundwater basin to equal the storage that might be lost if the dam were removed and Wic Wac drained. A respected environmental group, Eco-Health, picked up this unique analysis, and is widely publicizing the findings and pushing for restoration.

Eco-Health has begun a major lobbying and media campaign to seriously study dam removal and valley restoration. They have garnered cautious support from the office of the imposing and popular governor Hummer Schwarzenbarger and from a variety of politicians who favor environmental protection and are pushing for studies to be done. These include a few from the immediate area of the valley. Managers and political figures from Santa Loca have resisted considering the studies, but are now feeling forced to at least have discussions about restoration. They are willing to entertain studies of the technical merits of the idea. The fact that the utility will have to substantially raise water rates to pay for the required system upgrades has pushed them into accepting restoration as at least a possible scenario.

Many challenges lie ahead. No one is sure how feasible it is to remove such a large dam, and whether the valley will recover its aesthetic and ecological glory. The downstream reservoirs are all owned and operated by an agricultural water district. Deals would have to be worked out to use their storage potential. These reservoirs do appear to have extra storage space, but using it will limit future options of the agricultural district. The hydroelectric capacity and loss of recreation use are issues for the utility and the communities surrounding

the Wic Wac. Hydroelectric power is relatively benign environmentally and it produces substantial revenues that help run the water utility and keep ratepayer fees low. By the same token, the public pressure is mounting to consider the idea of restoration. The needed repairs and their potential \$3 billion price tag are being hotly debated in the halls of City Hall and by Santa Loca's citizens.

In the wake of the university study and the Eco-Health campaign, the governor saw that the time was ripe to see if the issues could be resolved and a consensus solution reached. He knew prominent political figures from the area would be amenable to this process. Under the governor's locus, all the key stakeholders were convened as a blue-ribbon committee. They included someone from the governor's staff, the Santa Loca mayor, the senator from Santa Loca, environmentally oriented politicians, and key community leaders from the towns around Wic Wac and Santa Loca, as well as federal representatives from Forest Service and Interior. A professional facilitator was hired to assist the committee in their deliberations.

## **Issues**

The situation has many complex issues, including the following key questions:

1. Assuming the lower reservoirs and groundwater basin have adequate storage, can it be secured permanently at a reasonable cost? Could water supply and flood control be designed to be as reliable as they are today or even more so?
2. Can the dam be safely removed with minimal environmental and related damage?
3. If the dam were removed, what is the feasibility of restoration for the valley and how would it be funded?
4. What uses would make sense for a restored valley? The land would be within a National Forest and presumably controlled by the federal government. Who benefits from a restoration of this type, and how would the land be managed?
5. What are the overall economic and environmental trade-offs between the restored condition and the continued use as a reservoir?
6. Who benefits and who pays for each option? Are there ways to expand funding over the long term to support different choices?
7. Does the proposed restoration have other related water supply, hydroelectric or flood control projects or benefits that could make it more attractive to water ratepayers?

Your group does not necessarily have to answer all these questions or reach agreement on all of them. You should tackle those issues and questions that make sense to the group to try to

reach overall agreements.

## Alternatives

The alternatives being considered are as follows:

1. **No Restoration/Complete the Repairs and Upgrades to the Existing System.** This option, favored by the Santa Loca utility and others described in this case, would not restore the valley or remove any part of the dam. It would follow the recommendations in the recent utility upgrade study and result in higher water rates for Santa Loca customers. Water service and quality would remain unchanged; it would be possible to devote some extra funds for local and small-scale restoration projects on the river and tributaries around the Wic Wac.
2. **Full restoration/Dam Removal/New Storage.** This option, favored by the environmental groups, would entail removing the dam, conducting extensive restoration activities in the valley, and negotiating with the downstream reservoir agricultural district for storage rights. It would also include using the lower groundwater basins for storage of surface waters at times when the water level is high. Initial cost estimates, which are still quite coarse, suggest that the restoration costs would be about \$400 to \$800 million. If you include some of the system upgrades and repairs that would still need to be done, the actual cost would be approximately \$2 billion. Also, one time and on-going payments would have to be made to purchase storage space in the lower reservoirs. No cost estimates are known, but similar projects have paid as much as \$400 million over a period of years. The environmental community argues that the additional revenues from visitors going to a restored Wic Wac Valley would more than offset any extra costs from loss of hydroelectric generation or costs in maintaining enough water storage.
3. **A hybrid or partial option.** No one is coming to the table with this approach. This doesn't preclude you from negotiating such ideas as a full study and analysis of all options, costs, benefits, and feasibility and a process for making an objective decision. You may come to an agreement contingent on the findings of more study, such as if costs for this issue can be negotiated successfully, to give one scenario. You are free to develop any logical option that the group can agree on that brings you closer to a decision and helps resolve some issues.

## Roles

The following participants have been selected to take part in the negotiation.

**Executive Director of Santa Loca Utility:** You are the long-standing and well-respected director of one of the major water utilities in the state. You serve over two million people with

high quality water in three cities, including the major metropolis of SL. You are generally opposed to any restoration option that involves taking out the dam. You are a strong proponent of a water rate hike to pay for upgrades, but you realize that this is controversial and many ratepayers will object. In reality, you do not even believe the negotiations should even be taking place, but you realize that the citizens of SL are very pro-environment and that the Wic Wac Valley has always been a “sore spot” with environmentalists. You are open to more study if no commitments are made. You are also open to spending money on various restoration projects at the reservoir, downstream in the river canyon and along the pipeline and canal system. For you to be convinced to remove the dam, you will need absolute assurance that the water storage is there permanently, and that water quality will remain high. If another utility and other groups like state or federal agencies were able to come in and provide “insurance” policies--perhaps by helping pay some of the extra costs of restoration--it might work out for you.

**Attorney for Eco-health:** You are strongly in favor of dam removal and restoration. You consider it the most important environmental goal within the last 50 years. You are willing to negotiate on other issues to make this priority a reality.

**Director of the Agricultural Water Agency:** You consider dam removal and restoration a foolish policy, but you are willing to negotiate a high price for storage space and conveyance of water for the SL utility. While proponents of the dam removal say they have future options for storing and serving more water, nothing is happening immediately, and farming is on the decline.

**University Faculty Member:** You are dedicated to sound science and objective technical answers. However, you have a vested interest in seeing the results of your computer model play a role in such a profound decision. Based on the data so far, you believe the restoration is a good idea, and you are always willing to do more study.

**Representative of the City of Santa Loka Ratepayers Group:** You are highly skeptical of removing the dam and are concerned over the reliability of water service, costs and quality of water. You are wary of the high price tag of the repair work. You know that the liberal-minded citizenry of SL are supportive of environmental causes.

**Representative from Governor Hummer Schwartzbarger’s Office:** You are very supportive of negotiation and study. In fact, the governor put his reputation on the line by helping form the group, so the governor's office wants a clear outcome. You are environmentally oriented because the state’s electorate tends to be. You are also quite close to politicians in the mountain counties who stand to gain from a restored valley. However, the governor is also quite close to the representatives from SL who want nothing to do with restoration. The governor is trying not to take sides.

**Representative from Senator Rick Hydrobucks Office:** You are strongly opposed to dam removal and restoration and you believe that the state already lacks storage capacity for water

supply. You are quite concerned about loss of hydropower and recreation opportunities. However, you are also keenly aware of the pro-environment stance of much of the electorate.

**Representative from the Fly Fishermen’s Association:** You are strongly in favor of dam removal and restoration. This would set an impressive precedent for other rivers, as well as possibly open up a section of a wild and scenic river that has not been seen--or fished--for more than 80 years. The possibility is tantalizing.

**Manager of the National Forest (from the U.S. Forest Service):** You are “caught in the middle” on this issue. You realize that managing a valley resource with as much scenic and ecological value as the Wic Wac would be prestigious, bring in enormous revenues to the Forest Service and reinvigorate a stagnant career. However, you have received some negative signals from Washington on the restoration. An ecologist by training, you would personally love to see the Wic Wac returned as the ultimate symbol of changing national values, but you are worried about the USFS official stance.

**Facilitator:** You have been hired by the blue ribbon committee to try to resolve the issue in a short time period. You are absolutely neutral on the concept; your job is to try to reach agreement.

**Recorder:** You have been hired by the blue ribbon committee to try to resolve the issue in a short time period. You are absolutely neutral on the concept; your job is to try to reach agreement.

### **Other Roles as Needed**

**Farmer Relying on Water from the Agricultural Water District:** You oppose the restoration and removal of the dam. You believe it may affect your water reliability and do not see any sound reason for changing what has worked for over 80 years.

**Mayor of Santa Luca:** You are in a tough spot. Elected on a pro-environment platform, you have made it a main theme of your administration to have the “most sustainable city in America.” You believe in the idea of restoration and have many close friends and allies in Eco-health, Sierra Club and other groups. However, you must maintain good relationships with people at the SL utility since it supplies all of your constituents with water and power at low costs. You want to maintain good relationships with Senator Hydrobucks.

**Observers:** You are in the role of journalists, whose job it is to observe the negotiation and report on how it went, what interesting nuances emerged, what challenges arose, and what results are likely.