Option Submittal Form

Contact Information (optional):

☐ Keep my contact information private

Contact Name: _____ Title: _____

Affiliation: _____

Address: _____

Telephone: _____ E-mail Address: _____

Date Option Submitted: _____

Option Name:

Individual Conservation and Storage

Description of Option:

The snowpack in the Rockies is the primary reservoir for the Colorado River and it's tributaries. Annual precipitation is not something we can control. Long range climate forecasts indicate that the reduction in precipitation and early melt-off of the snow pack is likely not anomalous, but the new norm. If these statements are true, then the only viable management options are water conservation and storage.

Conservation strategies and technologies exist that can dramatically reduce usage on all fronts. Implementation will require a financial incentive. A smart approach would be to introduce tax credits for all levels of users to encourage implement these measures. All reductions of demand on the front side will pay major dividends over the long run; thus a very long range outlook and plan is essential.

Storage solutions can be implemented at every level, from rain barrels on a homes downspout to large scale underground reservoirs. Again, the greatest challenge is in breaking with business as usual and overcoming implementation challenges.

Location: Describe location(s) where option could be implemented and other areas that the option would affect, if applicable. Attach a map, if applicable.

Every home. Every business. Every agricultural area.

Quantity and Timing: Roughly quantify the range of the potential amount of water that the option could provide over the next 50 years and in what timeframe that amount could be available. If option could be implemented in phases, include quantity estimates associated with each phase. If known, specify any important seasonal (e.g,. more water could be available in winter) and/or frequency (e.g., more water could likely be available during above-average hydrologic years) considerations. If known, describe any key assumptions made in order to quantify the potential amount.

I don't know, but it seems reasonable to assume that water consumption could easily be reduced by half by an aggressive conservation program. For example, in our 2,000 square foot home of two people, we consume approximately 150 gallons of potable water per week, or 7,800 gallons per year. We utilize another ~200 gallons/wk during the summer growing season in our fairly extensive gardens, or approximately 6,000 gallons/yr. That water is collected from rainwater and snow melt in local cisterns (we have a permit).

The reason our water use is a fraction of what most people use is due to cognizance of the resource and intentional conservation efforts. Low flow everything is one aspect, but the largest factor is likely the use of composting toilets and heavily mulched garden beds. It's not rocket science, but it does require being aware and active in one's management of the water resource - which most people are almost entirely detached from.

Additional Information

Technical Feasibility: Describe the maturity and feasibility of the concept/technology being proposed, and what research and/or technological development might first be needed.

All of it is here and now; it simply requires the will to implement it. For better or worse, financial incentives both positive (e.g., tax credits) and negative (e.g., increase the price of water) will be required to make it happen.

All new construction should require these measures.

Costs: Provide cost and funding information, if available, including capital, operations, maintenance, repair, replacement, and any other costs and sources of funds (e.g., public, private, or both public and private). Identify what is and is not included in the provided cost numbers and provide references used for cost justification. Methodologies for calculating unit costs (e.g., $/acre-foot or $/million gallons) vary widely; therefore, do not provide unit costs without also providing the assumed capital and annual costs for the option, and the methodology used to calculate unit costs.

In our example, we paid for everything out of a sense of necessity. It was not exceedingly expensive, but most people will require a nudge in the right direction. I leave it to you to do the math.

Permitting: List the permits and/or approvals required and status of any permits and/or approvals received.

We had to get a permit from the state of CO to collect water from our roof and a domestic water well permit.

Legal / Public Policy Considerations: Describe legal/public policy considerations associated with the option. Describe any agreements necessary for implementation and any potential water rights issues, if known.

Many states specifically prohibit what I describe. I suspect it would require a significant, multi-state legislative effort to implement on a large scale.

Implementation Risk / Uncertainty: Describe any aspects of the option that involves risk or uncertainty related to implementing the option.

It's all proven. The only uncertainty is the ability to get people to change their way of living slightly.

Reliability: Describe the anticipated reliability of the option and any known risks to supply or demand, such as: drought risk, water contamination risk, risk of infrastructure failure, etc.

This is pretty low-tech stuff for the most part. It is as reliable as gravity and as unreliable as precipitation. That said, while stored water may run out, having a supply on hand is obviously more reliable than not having a supply on hand.

Water Quality: Identify key water quality implications (salinity and other constituents) associated with the option in all of the locations the option may affect.

Stored catchment water can develop algae in the tanks. I don't think it poses a risk for use in irrigation purposes and may indeed add nutrients. Our plants thrive on it.

Energy Needs: Describe, and quantify if known, the energy needs associated with the option. Include any energy required to obtain, treat, and deliver the water to the defined location at the defined quality.

Energy Required	Source(s) of Energy
Gravity	Mass
Electricity (for some transfer pumping)	In our case, solar energy.

Hydroelectric Energy Generation: Describe, and quantify if known, any anticipated increases or decreases in hydroelectric energy generation as a result of the option.

Location of Generation	Impact to Generation
N/A	
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Recreation: Describe any anticipated positive or negative effects on recreation.

Locations	Anticipate Benefits or Impacts
N/A	

Environment: Describe any anticipated positive or negative effects on ecosystems within or outside of the Colorado River Basin.

Locations	Anticipated Benefits or Impacts
Everywhere	Reduced environmental impact from effluents. etc.

Socioeconomics: Describe anticipated positive or negative socioeconomic (social and economic factors) effects.

Empowering individuals to take control of something as essential as one's water supply can only have a positive socioeconomic effect.

Other Information: Provide other information as appropriate, including potential secondary benefits or considerations. Attach supporting documentation or references, if applicable.

Enables small scale agriculture
Potentially reduces acute stormwater runoff and all of the problems associated.