

FACSIMILE COVE SHEET

To; Pam Adams
Fax : 702 293 8418

Hello Ms Adams,

Attached is the form responding to your request for suggestions for water savings. Many studies show that recycling domestic water has an enormous potential for water conservation. There just has not been a practical system available to allow its use. The system I am offering is both practical and inexpensive, currently designed and could be brought into wide spread usage in a very short time

I would appreciate your allowing me to provide the details that I am sure you will find a practical water conservation method.

Thank you.

Option Submittal Form

Contact Information (optional):

Keep my contact information private

Contact Name: _____	Title: _____
Affiliation: _____	
Address: _____	
Telephone: _____	E-mail Address: _____

Date Option Submitted: 12/12/11

Option Name:

Gray Water Recycling System

Description of Option:

The primary concern with the water unbalance is the inability to provide adequate potable water to the population. There are means being undertaken to serve the recycled irrigation needs but domestic use water remains unrecycled. Some industrial users are recycling using their own systems but there is no practical means currently available to recycle domestic water. It is a shame to use potable water which has been treated at significant expense to flush the toilet and to water the lawn.

Statistically nearly half the water used in a domicile is of quality to be recycled and used a second time in toilet flushing and in the system I have developed and for which a patent has been applied that serves the evaporative cooler. Any remaining recycled water serves to water the lawn, trees and shrubs. Gray water recycling is allowed by statute in most of the western states.

My system under the control of a logic computer accepts water from the laundry, the Lavs, showers, and bthtubs, filters and stores it as it is accumulated and meters it with first priority to the toilets as needed. Colored tank modules (thousand flushes as an example) overcome the reluctance to have gray colored water in the stool. As a second priority the recycled water is cleaned with a reverse osmosis filter, exposed to UV light and metered to the evaporative cooler. What is left if any is metered as irrigation. Should there be an insufficiency of available gray water fresh water in limited amount—only enough to serve the current demand, is imported through an air break valve.

There are automatic monitoring systems included that continuously present the system status to the home owner. Means are included to accommodate occasional home owner absences when certain requirements remain even though no gray water is generated because of the

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

The recycling system may be installed in any existing or new home and in many if not most commercial installations

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.

Approximately half of the domestic water use could be saved if gray water recycling were to be implemented

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.

A prototype system has been built and installed in an existing home. Data derived from that system is now ready for designing into the next phase of the development.

Funding is required to allow the ongoing effort. Either funding to Simons Systems LLC or to an other entity qualified to develop the automatic control system of the program is solicited.

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.

Since the prototype has been built and tested, funds required to develop a manufacturable system, demonstration installations and ongoing development costs are needed. Simons System LLC would be pleased to submit a proposal detailing the proposed program and its associated cost.

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

No special permits are required. The system meets all known existing codes.

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.

there should be no public response since the system meets statutes already in existence

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

As with any development program there are certain risks involved in the implementation of a newly patented system. In terms of complexity the proposed system is technically uncomplicated and uses only off the shelf catalog item components.

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.

The system does not expose any significant risks and since it uses existing components whose reliability is assured, The system ultimate reliability is acceptable. The proposed proposal will detail the mean time between failures (MTBF) and other associated risks

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

Existing domestic water will be recycled.

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
An insignificant amount to run the recycling pumps computer and UV source	

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	

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
N/A	

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

N/A

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

Simons Systems LLC , in the interest of major water conservation sincerely requests the opportunity to present a proposal in anticipation of assistance in acquiring the required funding to further develop demonstration systems. This is an opportunity to immediately improve water usage with little investment and in the next 50 years with widespread usage would greatly impact the balance of water use..

Water use form

The primary concern with the water unbalance is the inability to provide adequate potable water to the population. There are means being undertaken to serve the recycled irrigation needs but domestic use water remains unrecycled. Some industrial users are recycling using their own systems but there is no practical means currently available to recycle domestic water. It is a shame to use potable water that has been treated at significant expense to flush the toilet and to water the lawn.

Statistically nearly half the water used in a domicile is of quality to be recycled and used a second time in toilet flushing and in the system I have developed and for which a patent has been applied that serves the evaporative cooler. Any remaining recycled water serves to water the lawn, trees and shrubs. Gray water recycling is allowed by statute in most of the western states. My system under the control of a logic computer accepts water from the laundry, the Lavs, showers, and bathtubs filters and stores it as it is accumulated and meters it with first priority to the toilets as needed. Colored chlorine tank modules (thousand flushes as an example) overcome the reluctance to have gray colored water in the stool and while not needed provide a modicum of bacteriological treatment. The recycled water also contains left over detergent that cleans as it flushes. As a second priority the recycled water is cleaned with a reverse osmosis filter, exposed to UV light and metered to the evaporative cooler. What is left if any is metered as irrigation. Should there be an insufficiency of available gray water fresh water in limited amount--only enough to serve the current demand is imported through an air break valve.

There are automatic monitoring systems included that continuously present the system status to the homeowner. Means are included to accommodate occasional homeowner absences when certain requirements remain even though no gray water is generated because of the absence of the occupants.

**ESSENTIALLY HALF OF THE DOMESTIC WATER USE CAN BE SAVED BY
RECYCLING GRAY WATER**