

**Mountain Regional Water Special Service District
Environmental “Green” Management Strategy**

Oct-11

DISTRICT MISSION STATEMENT:

“Mountain Regional Water Special Service District will be a pro-active and transparent water utility, focused on technology, efficiency, fiscal responsibility, the environment, and sustainability - with real values, and a realistic vision for the future. We will always provide safe and reliable water to our customers that meet or exceed all regulatory demands and expectations. We will manage all of the water resources entrusted to us with care, pride, integrity, and confidence. The District will employ a professional management team and a trained and empowered operational team, capable of the highest levels of system expertise and customer service. The District will continually strive to meet or exceed all of its goals, and staff initiatives .”

Adopted by Mountain Regional Water Special Service District, 2004

ENVIRONMENTAL GOAL:

Mountain Regional Water will strive to make water and energy resource conservation and environmental management a cornerstone in all of its operations and service.

#	ENVIRONMENTAL STRATEGIES	IMPLEMENTATION PROCESSES	ENVIRONMENTAL RESULTS	DATE of Implementation	Funding Source(s)	Current Annual Savings Estimate
OBJECTIVE A – External Service Provider Strategies:						
1	Implement optimum Rocky Mountain Power (RMP) rates on pumping facilities that may assist in reducing pump energy and/or power charges (i.e. switching from rate 6 to rate 6A or 6B where possible).	Monthly and Annual Analysis of all accounts using Mountain Regional rate models.	Reduces costs as well as impact on RMP generation and transmission systems.	2006	Internal Operational Funds	40,000
2	Ensure key facilities are accessible to outside utilities in all seasons to guarantee that meters are read in an accurate and timely fashion.	In our O&M process. Continuing effort on some facilities, i.e. well 5, 3-mile well, etc. Lost Canyon Pump Station put on continuous energy profiler meter reading system through Verizon connection.	Reduces estimated RMP reads which make it difficult to estimate off-peak management practices in future re-adjusted bills.	2011	Internal Operational Funds	1,000
3	Record and log power and gas consumption data as needed to ensure accuracy in billings as well as facilitating reliable budgetary projections.	Each months bills currently checked and approved.	Better energy management.	2009	Energy and Resource Budget	Unknown
4	Graph energy and gas use to demonstrate success of conservation and management strategies.	Each months bills currently checked and approved. Many heating thermostat setting and malfunction problems are found annually.	Better energy management. Cost savings and carbon footprint reductions.	2009	Energy and Resource Budget	1,500
5	Eliminate small unnecessary electrical accounts – replace with solar systems if and where feasible.	Future Study	Better energy management. Cost savings and carbon footprint reductions.	2012-14	-?-	Unknown
6	Investigate net metering opportunities on smaller accounts using solar, wind, or energy recovery generation devices or other similar and authorized equipment	Future Study	Better energy management. Cost savings and carbon footprint reductions.	2012-14	-?-	Unknown

#	ENVIRONMENTAL STRATEGIES	IMPLEMENTATION PROCESSES	ENVIRONMENTAL RESULTS	DATE of Implementation	Funding Source(s)	Current Annual Savings Estimate
OBJECTIVE B – Water Pumping Operational Management Strategies:						
7	Review all pump facility operations to optimize the load factors and efficiencies of operations, thus decreasing head losses, saving energy, and providing needed redundancies, and reducing peak power demands.	Studied in 2011 RMP Research Grant. Build into new 2012 SCADA upgrade project this monitoring and associated equipment.	Better energy management. Cost savings and carbon footprint reductions. Improved Pump and Motor life cycle costs.	2012	2011 EPA Zero Int. Loan	5,000
8	Reduce Energy usage on pumping facilities by ensuring that pumps are not running at a level or in a configuration which increases head losses in the pumping or piping systems.	Studied in 2011 RMP Research Grant. Build into new 2012 SCADA upgrade project this monitoring and associated equipment.	Better energy management. Cost savings and carbon footprint reductions. Improved Pump and Motor life cycle costs.	2012	2011 EPA Zero Int. Loan	3,000
9	Eliminating a possible return flow loop or leak in a pumping station through relieve/surge anticipator valve(s) or emergency fire flow PRV's.	Studied in 2011 RMP Research Grant. Build into new 2012 SCADA upgrade project this monitoring and associated equipment.	Better energy management. Cost savings and carbon footprint reductions. Improved Pump and Motor life cycle costs.	2012	2011 EPA Zero Int. Loan	500
10	Ensure that the distribution system piping network is carefully reviewed and monitored in susceptible subdivision and controls are implemented to further ensure that PRV's do not allow pumped water to recirculate back to the pumping facility suction (i.e. re-pumping).	Studied in 2011 RMP Research Grant. Build into new 2012 SCADA upgrade project this monitoring and associated equipment. Continued in future through system modeling from GIS system.	Reduces energy losses through possible unknown pump loops in distribution systems.	2012 +	Internal Operational Funds	Unknown
11	Review pump curves to better limit Variable Frequency Drives (VFD's) to their optimum frequency range settings.	Studied in 2011 RMP Research Grant. Build into new 2012 SCADA upgrade project this monitoring and associated equipment.	Better energy management and reduced heat losses. Cost savings and carbon footprint reductions. Improved Pump and Motor life cycle costs.	2012	Energy and Resource Budget	Unknown
12	Ensure that pumps controlled by Variable Frequency Drives (VFD's) do not have their impellers trimmed – thus allowing for a wider range of operational flows and pressures.	This allows a wider range of pump flow and pressure characteristics when controlled by a VFD, maximizing pump efficiencies.	Better energy management. Cost savings and carbon footprint reductions. Improved Pump and Motor life cycle costs.	2012 +	District Capital Funds	Unknown
13	Install a power substation on the Lost Canyon Booster Station (LCBS) location, allowing the facility to be operated on the industrial RMP rate 9 and to be run off-peak as much as possible. Monitor the energy and power through RMP Energy Profiler metering program.	Completed in first quarter of 2011 after considerable study with RMP and WBWCD. RMP was unable to supply future energy load through Oakley Substation. MRWSSD was spending up to 100 K per year on motor rewinding, etc.	Significant power and energy management project. Better electrical reliability. Significant reduction in Carbon Footprint. Reduction in peak loads on RMP generation and transmission systems.	2011	MRWSSD and WBWCD	300,000
14	Reduce energy and motor heat and noise at the LCBS facility by 1) switching the older VFD's to Soft-Starts; and 2) Maintain power factor correction capacitors.	This change out will be done under the EPA Green Loan Program in 2012. Estimated costs are 55,000 dollars.	It is estimated that this project will save 7,200 watts per pump in heat loss from VFD's and Input Filters or nearly 50,000 watts for the total pump station. This will also allow the pumps to be run more efficiently at 60 Hz instead of 59, due to the under designed Filters thus increasing the peak pump station flows by nearly 700 gpm. An energy and power savings of 3 to 4 percent is estimated.	2012	2011 EPA Zero Int. Loan	4,000

#	ENVIRONMENTAL STRATEGIES	IMPLEMENTATION PROCESSES	ENVIRONMENTAL RESULTS	DATE of Implementation	Funding Source(s)	Current Annual Savings Estimate
15	Minimize Power demand charges on other pumping facilities by developing an off peak pumping strategy where feasible, particularly on the higher power demand systems.	Build into new 2012 SCADA upgrade project this monitoring and associated equipment. The Colony portion is being funded by development in the Colony.	Significant POWER or demand charge savings. Reduced impact on RMP power grid due to off-peak peaking. Possible higher impact on water storage. Increased flow through storage systems.	2012	2011 EPA Zero Int. Loan and others	46,800
16	Minimize Power Factor charges by ensuring all large pumping facilities have power factor correction devices using capacitors either directly or as part of a VFD system.	Currently implemented in all VFD and Soft Start replacements or upgrades.	This project(s) reduce the penalty RMP places on kw power demand charges due to an inefficient power factor less than 90%.	2009+	Energy and Resource Budget	1,000
17	Monitor temperatures and environmental variables better in all pumping and other remote facilities to get better controlled energy use for heating and/or cooling. Use Motion detectors for lighting controls and install more efficient flourescent lighting.	Implementation through 2012 SCADA system upgrades and some operational funds.	Saves energy, and gas for environmental control and lighting when not needed. Increases cooling efficiency of heavy motor and VFD loads, etc.	2012	2011 EPA Zero Int. Loan and others	1,200
18	Evaluate and implement better and more efficient cooling systems for the larger pumping facilities, to not only save energy but extend pump life.	This is a new incentive that will take several years to implement. The Lost Canyon BPS and Rockport BPS are the first to implement such a program.	Higher efficiency and extended motor life in pumping plants. Results are seen initially in LCBS and Rockport BPS.	2012+	Internal Operational Funds	Unknown
19	Improve the efficiency and reliability of the Lost Canyon cooling system. Monitor air pressures, humidity, and other parameters. And to better control its operation in the winter by using the heating systems only when needed. Integrate Air Handler PLC with our system SCADA equipment.	Implementation through 2012 SCADA system upgrades. Heating thermostat conversions are occurring in 2011 with operational funds.	Will better control cooling and prevent loss of electrical equipment and motors (by shutting down the humid air wash system) due to dew-point issues, and when the temperature falls outside at night and season.	2012	2011 EPA Zero Int. Loan and others	5,000
20	Ensure that all water surge protection systems in pump stations are kept in optimal working condition to protect the pumping facilities as well as minimizing the possibilities of leaks or water breaks in the related distribution systems.	LCBS is finished. Remaining, 15b and the three (3) Colony BPS's.	Can save a considerable amount of water, as well as premature wear and tear on the higher pressure distribution piping systems.	2011+	Internal Operational Funds	Unknown
21	Perform detailed audits on critical pumping facilities annually to ensure that they are operating at their peak efficiency. All facilities should be reviewed on a 3 or 4 year cycle. Acquire equipment such as portable pressure and flow testing equipment as needed to implement this strategy.	To occur annually if possible. Some equipment is already acquired, i.e. thermal imaging equipment and power quality recorders and loggers.	Helps protect the asset investments and modifications as prescribed in this plan.	2011+	Energy and Resource Budget	Unknown
22	Establish Power Quality meters on larger facilities with daily logging capabilities.	This is to be installed mainly on the LCBS Sub-Station, Treatment Plant, and Old Ranch BPS. Over a multi-year program.	Ensures that expensive motor and control equipment failures can be tied to a grid problem rather than internal problems.	2012+	Energy and Resource Budget	Unknown

#	ENVIRONMENTAL STRATEGIES	IMPLEMENTATION PROCESSES	ENVIRONMENTAL RESULTS	DATE of Implementation	Funding Source(s)	Current Annual Savings Estimate
OBJECTIVE C – Plant Facility Efficiency Improvement Strategies:						
23	Implement a more effective ventilating system at the Treatment Plant to reduce humidity while increasing heating and cooling efficiency.	Study and implementation of ventilating issues to be addressed in 2012-2013.	Plant energy savings when the overall ventilation system is addressed.	2012+	Internal Operational Funds	Unknown
24	Develop strategies to operate the Treatment plant more or at higher capacities during off-peak power periods.	By adding one more 1 MGD membrane skid to the plant, the plant can run at 4 MGD at off-peak pumping periods, and 1 MGD during on-peak. Total Output would be 2 MGD. Should be ample capacity for 10 years or more.	Significant POWER or demand charge savings. Reduced impact on RMP power grid due to off-peak peaking. Possible higher impact on water storage. Increased flow through storage systems.	2012	2011 EPA Zero Int. Loan and others	9,000
25	Upgrade key chlorinating disinfection units to more efficient systems, utilizing less energy either in production and/or transportation and handling of product.	This primarily involves the replacement of the Treatment Plant chlorine system, as well as several smaller sodium hypochlorite systems on wells.	This primarily involves the replacement of the Treatment Plant chlorine system with a more efficient chlorine generator, using a lower amount of electrical energy and salt to generate chlorine. Uses locally produced salt to save transportation costs.	2012	2011 EPA Zero Int. Loan and others	500
26	Upgrade or install security systems on key infrastructure that could reduce vandalism or destruction of important equipment.	Continuing internal program upgrade.	Protects our assets and equipment and supplies, some of which could potentially harm the environments if vandalized.	2012+	Energy and Resource Budget	Unknown
27	Improve treatment plant process control and efficiency through proper utilization and dosing of chemicals to reduce chemical waste, etc. Also improve storage to increase bulk purchase discounts and reduce delivery frequency thus saving energy and costs.	Implementation through 2012 SCADA system upgrades. Plant SCADA system to be unified with District wide SCADA system to improve control.	This program will optimize dosing of chemicals, including the Activated Carbon Absorbers - reducing the carbon footprint that is part of the carbon re-generation processes.	2012	2011 EPA Zero Int. Loan and others	5,000
28	Implement more natural and energy efficient systems to reduce algae growth in raw water pond, which could reduce the costs and amount of chemicals used for treatment.	The District will install a relatively inexpensive ultrasonic system to control the growth of algae in the Signal Hill Plant pond.	Reducing the growth of algae at signal hill will have a direct effect on the reduction of treatment plant chemicals, i.e. ACH and GAC regeneration needed to control Total Organic Carbon (TOC).	2012	Internal Operational Funds	5,000
29	Monitor electrical facilities for inefficient heat dissipation or cooling, through increased building insulation, etc.	Many electrical control cabinets get very hot. This program will measure the heat issues and provide solutions.	Increases energy efficiency as well as equipment lifecycle.	2012+	Energy and Resource Budget	Unknown
30	Insulate the very large Treatment Plant Clean in Place (CIP) tank walls and install a gas on-demand pre-heater to reduce the energy needed to heat the water.	This project has begun with insulation the tank and will conclude this year by switching the heating load of the water from electricity to natural gas.	Energy savings. Reduction of water heat loss.	2011	Internal Operational Funds	500
31	Install a better cooling/ventilation system in the treatment plant compressor room to increase the efficiency and life of the compressors.	Compressor cooling and ventilating system installed fall of 2011.	Prevents over heating of compressor equipment, saving energy and life of equipment.	2011	Internal Operational Funds	Unknown

#	ENVIRONMENTAL STRATEGIES	IMPLEMENTATION PROCESSES	ENVIRONMENTAL RESULTS	DATE of Implementation	Funding Source(s)	Current Annual Savings Estimate
OBJECTIVE D – Source and Supply Side Water Resource Conservation Strategies:						
32	Reduce system leaks and water losses by implementing a daily and hourly customer water meter reading system which operates in conjunction with a carefully implemented master meter system(s). Generate daily reports, pinpointing areas where a water leak or break may be occurring. Use this system to assist customers in troubleshooting leaks on their side of the meters. Make modifications to the SCADA system to make it capable of handling this larger bandwidth of data.	Will be bid with left over funds from the EPA Green Loan in 2012 to begin the program in critical known water loss areas i.e. Summit Park. May take up to 5 years to fully implement. 2012 SCADA improvements to implement the communications backbone for such a system.	Significant reduction in water system loss and unaccounted for water. Allows staff to respond to a leak much sooner than done presently.	2012+	Operational Capital Funds, 2011 EPA Zero Int. Loan and others	10,000
33	Develop a system to better preserve the Signal Hill raw water storage pond in the event of a Lost Canyon pipeline leak or break. This water has a very high energy and power delivery cost per acre-foot and is also a viable emergency water source in the event of pumping failures and power outages.	This may require an automatic check or gate valve operator at the pond as well as an alternate feed system from the storage pond to the plant.	Preserves a large 40 million gallon water resource in the event of a transmission leak or failure in the Lost Canyon System, allowing to treatment plant to operate during the repair. Significant energy reservoir protected.	2013-14	Internal Operational Funds	Unknown
34	Remain current on all water source protection plans and work to mitigate any possible threats to said source(s). Ensure that each source has a recorded protection zone.	Currently implemented with 2010 update to all plans.	Aids in the protection of the Districts valuable water resources from possible pollution sources.	2010+	Internal Operational Funds	Unknown
35	Develop a strategy in the District Emergency Management Plan to preserve critical reservoirs and other distribution infrastructure in the event of a natural disaster or earth quake to provide a safe and usable reserve.	To be studied in 2012	Needed to protect the public health in the event of a natural disaster.	2012	Internal Operational Funds	Unknown
OBJECTIVE E – Demand Side or User Water Resource Conservation Strategies:						
36	Implement water rates, including surcharges to higher volume customers, which actively encourages customer water conservation measures.	Implemented in 2011.	Encourages water conservation and forces higher elevation customers to pay their fair share of the energy and power impacts associated with water delivery.	2011	Internal Operational Funds	Unknown
37	Review and update the District Water Conservation plan as necessary.	Plan was updated and implemented in 2010.	Develops water conservation strategies for developers and users in the District.	2010+	Internal Operational Funds	Unknown
38	Review District Rules and Regulations – to ensure that they promote conservation and penalize users for unnecessary water use and waste.	Implemented in 2011.	The document that governs all district water service and operations.	2011	Internal Operational Funds	Unknown
39	Demonstrate our green and resource conservation strategies by participating in the annual school water fairs.	Annual participation by the District.	Teaches the science of the water resources in the Basin to local children and encourages them to preserve and conserve the same.	2003+	Internal Operational Funds	Unknown
40	Provide public education and assistance when possible to help conserve water or find known water losses.	Service provided by the Customer Service Department at Mountain Regional.	Reduces water loss and promoted conservation on the demand side.	2003+	Internal Operational Funds	Unknown

#	ENVIRONMENTAL STRATEGIES	IMPLEMENTATION PROCESSES	ENVIRONMENTAL RESULTS	DATE of Implementation	Funding Source(s)	Current Annual Savings Estimate
OBJECTIVE F – Water Distribution System Management Strategies:						
41	Ensure that all PRV's are properly maintained and tuned to provide optimum pressure levels which may in turn reduce accompanying distribution system water losses.	Currently implemented but increased O&M effort in the future as availability of staff will allow.	Saves water losses and energy.	2005+	Internal Operational Funds	Unknown
42	Review fire hydrants annually to test for possible leaks.	Currently implemented but increased O&M effort in the future as availability of staff will allow.	Saves water losses and energy.	2005+	Internal Operational Funds	Unknown
43	Keep a centrally accessible and well maintained set of pipe location and leak detection instruments to ensure rapid and accurate assessments of infrastructure. Routinely performed instruments function check.	Implemented.	Reduces water losses and associated energy losses.	2005+	Internal Operational Funds	Unknown
44	Investigate installing a centrally located and efficiently accountable bulk water filling station for construction water – minimizing water losses and unauthorized use by contractors.	Future Project.	Saves water losses by eliminating the wear and improper use of District fire hydrants. Affords a better accountability and billing system for the same.	2014+	Internal Capital Funds	Unknown
45	Develop and implement a distribution system flushing program to ensure that water quality is maintained as well as friction losses minimized.	Future O&M Project.	Ensures a safe distribution system and reduces energy hungry friction losses of pipe from possible sediments, etc.	2012+	Internal Operational Funds	Unknown
46	Review and maintain key air-vac devices in the distribution system to ensure that they are functioning properly with no build-up of air. This will maximize flow of water and decrease energy demands.	Currently implemented but increased O&M effort in the future as availability of staff will allow.	Reduces energy losses through the elimination of air restrictions in piping systems.	2005+	Internal Operational Funds	Unknown
47	To optimize energy efficiency on the 24 inch diameter Lost Canyon Transmission Pipeline system – implement a pipeline pigging program to ensure that pipe wall friction coefficients are maintained at a minimum thus reducing pumping energy costs.	Future Project.	Ensures a safe transmission system and reduces energy hungry friction losses of pipe from possible sediments, etc.	2013	Internal Capital Funds	Unknown

#	ENVIRONMENTAL STRATEGIES	IMPLEMENTATION PROCESSES	ENVIRONMENTAL RESULTS	DATE of Implementation	Funding Source(s)	Current Annual Savings Estimate
OBJECTIVE G – Technology and SCADA Management Strategies:						
48	Implement energy and power monitoring reporting into the SCADA system to better monitor the performance of pumping systems. This will allow for much sooner reporting of pump failure or blockage by rocks or debris in an impeller, significantly reducing its efficiency, or motor malfunction.	Implementation through 2012 SCADA system upgrades.	Allows District personnel to locate an inefficient pump operation as soon as it occurs, saving energy, water losses, and equipment failures.	2012	2011 EPA Zero Int. Loan and others	4,000
49	Through the implementation of a GIS system – provide geographically accurate infrastructure information and maintenance history to empower staff with the information necessary to make timely repairs, reduce travel, and improve maintenance decisions.	Implementation started in 2011 and will continue through 2012.	Will save a significant amount of time and energy resources in troubleshooting problems in the distribution system.	2011-12	Energy and Resource Budget	Unknown
50	Have proper power backup generators and equipment available so key infrastructure can be operated in an emergency. Backup all SCADA, security, and critical control systems at the Treatment Plant using a backup generator and UPS system.	Multi year implementation - beginning in 2011.	Saves the operation and compliance with the objectives and strategies of this plan in the event of a power failure. Protects and utilizes more efficient water resources in a power loss as well.	2011+	Internal Capital Funds	Unknown
51	Upgrade the SCADA system to be more intelligent and efficient in its operation and monitoring – enabling it to manage much of the elements of this strategic plan and to better alert staff when a problem is detected.	Implementation through 2012 SCADA system upgrades.	See other EPA funded elements of this plan for the specific savings of money and water resources.	2012	2011 EPA Zero Int. Loan and others	See Other Savings in Plan
52	Move more critical computer server applications into the “cloud” as they become available and more mature, reducing local costs of hardware management, software maintenance, as well as energy costs.	Implementation started in 2009 and will continue through 2012.	Saves IT costs as well as energy associated with the costly operation of servers.	2009-12	Energy and Resource Budget	Unknown
53	Install “water bug” water leak detection devices on all SCADA sites to enable staff to react to any type of facility leak or water loss promptly.	Implementation through 2012 SCADA system upgrades.	Will save loss of water as well as protecting valuable equipment and machinery from damage.	2012	2011 EPA Zero Int. Loan and others	Unknown

#	ENVIRONMENTAL STRATEGIES	IMPLEMENTATION PROCESSES	ENVIRONMENTAL RESULTS	DATE of Implementation	Funding Source(s)	Current Annual Savings Estimate
OBJECTIVE H – Engineering and Future Energy Recovery Strategies:						
54	Ensure that all new water storage and pumping facilities are designed and sized with off-peak pumping demands in mind.	Future Study.	Will save more energy and water resource assets.	2012+	Energy and Resource Budget	Unknown
55	Implement the Atkinson ASR program (Aquifer Storage and Recovery), including possibly other similar groundwater programs to reduce the peak pumping and treatment load on the District’s facilities in the summer months.	Future Study and Development.	Will save more energy and water resource assets. Can significantly reduce the peak demand on sources and increase their annual capacity.	2013-14	Future State Funding or Other	Unknown
56	Study other possible major surface water storage projects to reduce the peak capacity of the Lost Canyon system and increase its annual capacity.	Future Study.	Will save more energy and water resource assets.	2013	Future State Funding or Other	Unknown
57	Study where hydro-electric energy recovery may be implemented at large pressure reduction locations, i.e. Promontory to Atkinson drop and ASR or other storage locations.	Future Study.	Will save more energy and water resource assets.	2014	Future State Funding or Other	Unknown
58	Investigate the possibility of incorporating wind and/or solar energy systems at the Treatment Plant or other facilities.	Future Study.	Will save more energy and water resource assets.	2014	Future State Funding or Other	Unknown
59	With mature GIS data – computer model the distribution system to find areas or facilities that may be inefficient or undersized, decreasing possible water losses and pumping demands.	Future Study.	Will save more energy and water resource assets.	2012	Energy and Resource Budget	Unknown
60	Study and find a method to reduce energy losses in the Silver Springs Booster Pump Station where water is imported from the white pine tank zone and re-pumped to mid mountain tank.	This may be best implemented through the installation of a small head, high flow pump to by-pass the silver springs tank re-pump cycle.	Will save more energy and water resource assets.	2012	Energy and Resource Budget	Unknown
61	Study water sources and pumping facilities to find the actual energy and power costs per acre foot or MG. The District can then develop a strategy to pump water from more efficient pumping systems and also shut down or mothball facilities that are inefficient or redundant.	Implemented.	This study allowed us to re-focus on the water resources that are more efficient and less costly to operate, saving a significant amount of energy and maintenance resources.	2011	Energy and Resource Budget	10,000
OBJECTIVE I – Office Facility Efficiency and Conservation Strategies:						
62	Implement Energy management strategies in our offices – i.e. programing thermostats effectively and using low energy lighting, motion controlled light switches, etc.	Implemented.	Saves energy and fuel resources.	2005+	Internal Operational Funds	500
63	Install a backup generator for the administrative offices.	Future Project	Protects the administrative servers and SCADA system form power losses, enabling them to protect the system in the event of a long term power failure.	2013	Internal Operational Funds	Unknown

#	ENVIRONMENTAL STRATEGIES	IMPLEMENTATION PROCESSES	ENVIRONMENTAL RESULTS	DATE of Implementation	Funding Source(s)	Current Annual Savings Estimate
OBJECTIVE J – Multi Jurisdictional Cooperation Strategies:						
64	Work with the County on the study and installation of a natural gas fueling facility in the basin for County and Multi-District vehicles and equipment.	Future study and possible implementation.	Reduces energy dependence on petroleum and reduces carbon foot print of vehicles.	2013	Internal Operational Funds	Unknown
65	Working with the County, Park City and SBWRD, cooperate and make usable a comprehensive Basin wide GIS system, showing all assets in their completed state.	Implementation has started in 2006. Provides a foundation to system modeling used in other strategies in this plan.	This will make accessible a GIS system to aid operations in locating multi jurisdictional equipment and resources efficiently.	2006+	Energy and Resource Budget	Unknown
66	Develop a regional plan and strategy for the reliable service of future regionalized water sources by Weber Basin Water Conservancy District (WBWCD) to serve the Basin 10 years and beyond. Key Players and partners with WBWCD include: Mountain Regional, Park City, Summit Water, Summit County, Snyderville Basin Water Reclamation District.	Agreement starting the process signed in Nov. 2011, along with the SWDC settlement.	Provides for a long term 10+ year water source regionalization project in the Snyderville Basin utilizing Weber Basin as the wholesaler of all new source. Regionalization provides multiple environmental and economic benefits.	2012+	WBWCD	Unknown
OBJECTIVE K – Staff and Public Resource and Transportation Management Strategies:						
67	Create a small satellite office in Summit Park, with SCADA access to more efficiently position operation staff across the District.	Implementation in 2012 after SCADA upgrade allows for District sub-net data connection to Summit Park.	Reduces a significant travel time as well as fuel costs due to a large geographical service area. Savings mainly in gas and diesel.	2012	Internal Operational Funds	5,000
68	Train operators regularly in the efficient and proper diagnostic procedures used to determine system water losses.	Implemented in 2005 with the purchase and training on FCS leak location equipment.	Significant savings in water loss in aging water infrastructure.	2005	Internal Operational Funds	Unknown
69	Reduce paper output by providing work orders, system maps, O&M manuals, and system photos digitally to remotely accessible computers and mobile devices (iPads, etc.).	In the development and implementation phase.	Provided with the mobile accessible asset management system (above). Saves travel to and from office for work orders etc.	2012	Energy and Resource Budget	2,000
70	Reduce fuel usage by operations staff through the proper implementation and use of a field accessible customer service order, asset management system, and inventory control system. This will significantly reduce the need to return to the office frequently to gather work orders, directives, etc.	In the development and implementation phase.	Saves travel to and from office for work orders etc. (Savings in fuel usage)	2012	Energy and Resource Budget	5,000
71	Optimize and centralize spare parts and other inventory in key locations to reduce energy and time related travel needed for the proper operation and maintenance of District assets and services.	In the development and implementation phase. To be implemented with the Asset Management System (above).	Saves travel to and from district locations for repair equipment etc. (Savings in fuel usage)	2012	Internal Operational Funds	2,000
72	Procure more energy efficient vehicles and equipment in District operations.	Implementation has started.	Some staff can function with O&M duties with vehicles that get much better gas mileage than the typical utility truck model.	2011	Internal Operational Funds	4,000
73	Make the District WEB Page more public friendly, usable, and efficient.	Implementation has started.	By putting more publicly accessible documents and service forms on the WEB site, a significant reduction in the need for the public and staff to visit the main office will be realized.	2011	Internal Operational Funds	Unknown
74	Ensure that all operations and management staff have reliable access to SCADA, security systems, and server data and resources to minimize the amount of travel need to check systems in person. Encourage telecommuting where practical.	Currently implemented. Access will expand in 2012 with the expansion of the new SCADA system.	Saves travel and allows remote troubleshooting in the event of a water system alarm.	2004+	Energy and Resource Budget	3,000

#	ENVIRONMENTAL STRATEGIES	IMPLEMENTATION PROCESSES	ENVIRONMENTAL RESULTS	DATE of Implementation	Funding Source(s)	Current Annual Savings Estimate
OBJECTIVE L – Recycling Strategies						
75	Recycle paper and other appropriate office items. Provide accessible bins for such purposes.	Fully Implemented	Saves resources and reduces the carbon footprint associated with the manufacture and distribution of such resource.	2011	Internal Operational Funds	Unknown
76	Recycle used metal scrap, copper, brass, and bronze, from old water facilities, equipment, and meters.	Fully Implemented	Saves resources and reduces the carbon footprint associated with the manufacture and distribution of such resource.	2002	Internal Operational Funds	Unknown
77	Re-use older electrical and water distribution equipment where feasible.	Fully Implemented	Saves resources and reduces the carbon footprint associated with the manufacture and distribution of such resource.	2009	Internal Operational Funds	Unknown
78	Recycle all SCADA and UPS system batteries.	Fully Implemented	Saves resources and reduces the carbon footprint associated with the manufacture and distribution of such resource.	2011	Internal Operational Funds	Unknown

TOTAL: 474,500