Reclaimed Water Overview

- What is Reclaimed Water-R/W and where does it come from?
- What is it primarily used for?
- How is it distributed?
- What are it's Advantages?
- What are the costs associated with R/W?
- How does R/W contribute to Conservation efforts?
- What types of Federal State and local funding are available?
- How does the State control and account for R/W expenditures, Capital investments and Operations/Maintenance?

What is Reclaimed Water-R/W and where does it come from?

- It is a process that comes from taking the existing "Grey Water" that currently is disposed of into our rivers, or spread out among Farmer's fields and adding a few more steps to it.
- R/W is mainly the result of removing "Phosphorus" and adding "Chlorine" into the "Grey Water" over a period of time, until it meets the "discharge requirements" for the State of Montana.

What is it primarily used for?

- Irrigation for: Golf courses, Farming, Homes, Apartments, Commercial & Industrial buildings, Highways and Public Parks…
- Urban and Industrial uses: Public Facilities, landscape, water fountains, Truck/Car wash sites, Boiler make-up water for heat at universities, hospitals…
- Dust control for construction sites, highway road projects, trails, rodeos…

How is it distributed?

- Once the R/W is ready for usage first it is pumped from the Sewage Treatment plant out to the main transmission pipeline made of a 24" or 42" ductile iron or CMLC pipeline that will then carry it down major streets with branches going out to businesses and homes.
- R/W flows will be controlled and overseen by Treatment Plant Operations.

What are it's advantages?

- For every gallon of R/W used you save a gallon of Drinking water-(potable water).
- In doing so the water stays untouched where it is "Conserved" for future human consumption.
- Consumers will use more R/W because they will be paying less for it than the more expensive drinking water to irrigate their lawns etc.

What are the costs associated with R/W?

- Initial Capital Costs are associated with upgrading the existing infrastructure at the Sewage Treatment plants to make the R/W and added staff.
- Also additional pumps may be needed to run the R/W down the road to where it will be used, along with the pipelines and hook-ups.

How does R/W contribute to Conservation efforts?

- Every gallon of "Grey Water" that is NOT dumped into our Ecosystems keeps our natural water resources that much more cleaner than before.
- It also keeps our ground water levels constant and aquifers charged.
- Using R/W preserves our most precious commodity- and helps us maintain potable water levels to keep up with the increasing population growths and drought years.

What types of Federal, State and local funding are available?

- The "American Reinvestment Recovery Act"- ARRA is one along with other Conservation Grants and loans available from the Feds.
- State and local grants, loans come from the "Mt. Dept of New Economic Conservation and Preservation Development Projects" and in Missoula they have "Redevelopment Loans" and assistance for such projects, (*especially when there is a way to generate additional revenue for the city*).

How does the State control and account for R/W expenditures, Capital investments and Operations and Maintenance?

- Establishment of a new "Construction Management Dept." would be the "eyes and ears" for the State of Montana or WPIC.
- Additionally, the current Sewage treatment plant's "Operations and Maintenance" staff would be upgraded to account for the extra work associated with the new R/W infrastructure.
- A certain amount of the "New Revenue" would contribute to these costs.

Construction Management

- Continually verifies costs and expenditures, making sure that every "I" is dotted and "T" is crossed.
- Makes sure that time is of the essence in Construction performance along with maintaining quality of work.
- Addresses issues covered/not covered in the Specifications and Drawings and creates solutions working with the Consultants, Engineers and Contractors.

Return on Investment

- "NEW REVENUE" is generated by the Capital Improvements which make the R/W.
- The usage of R/W is cheaper than drinking water consumption for the consumer who will be using more R/W by volume for irrigation, planting and washing their cars, this translates into New Revenue for the City.
- Additional Plant nutrients are in every gallon of R/W its like having "Miracle Grow" every time you water the plants.
- Private Sector foots the bill: "New Construction Development" perpetuates R/W usage into the future WITHOUT ANYMORE PUBLIC MONEY!

Summary-Conclusion

- The Key to the successful implementation of this R/W system is to begin early before the dire need arises for water and also while the "Initial Capital Improvements" are cost effective to do so.
- If CA did not begin the R/W proposals we are talking about here today back in 2000 and earlier, can you imagine how much worse their situation would be?
- Also "Solar Panels" can help supplement the costs of power to control, monitor and operate the transmission of R/W pump stations, sewer treatment plants themselves and other appurtenances.

Organizational Chart

- Attached is a rough draft of what the Hierarchy structure would look like using the City of Missoula, Mt. as an example - highlighted in "Magenta" which incidentally is the official color of R/W signage, labeling, pipe, Air-Vacs, Valves and their covers.

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Questions?

Department Manager			Department Level Supervisors			Location Level Supervisors		
Name	Title	Locations	Name	Title	Locations	Name	Title	Locations
WPIC/State of Montana	Managing Director of New Economic-Conservation and Preservation Development Projects	All Sub-Project Directors and Locations	John Alcala	Deputy Manager of Current Montana Infrastructure Potable/Reclaimed Water, Solar, Bio-Gas, Wind Projects	All Sub-Locations	Don Verrue of Missoula, MT	Manager of Operations Supervisor	City of Missoula
						Kevin Slovarp of Missoula, MT	Head Engineer	City of Missoula
						Starr Sullivan of Missoula, MT	Operations Plant Manager	Missoula Treatment Plant
			Gaspar Garza	Deputy Manager of Operations	All Sub-Locations	Chander Letulle	Operations Supervisor	RP-1
								Philadelphia LS
								Montclair LS
								Upland Hills WRF
						Gregg Bingham	Operations Supervisor	RP-4
			Jeff Ziegenbein	Deputy Manager of Operations & Organics	All Sub-Locations	Jeff King	Compost Facility Supervisor	IERCF
						Greg Barron	Compost Facility Supervisor	IERCF
			Andy Campbell	Groundwater Recharge Coordinator	All Sub-Locations	Barry Kehl	Groundwater Recharge Maintenance Superintendent	GWR
			Jeff Noelte	Senior Engineer	All Sub-Locations	Technical Services - CIP design review and startup, R&D, etc.		
			Dennis DeCoite	Process Control Coordinator	All Sub-Locations	Technical Services - Performance Mnmgt (UPC/KPI), Training, O&M/SOP development, etc.		