Date: 24 January 2013

MEETING SUMMARY OF MEETING THREE

NOTES:

The following pages contain a summary of the presentation and discussions from the WCWCD Community Integrated Resource Planning Advisory Committee Meeting of 24 January 2013.

These pages, together with the presentation slides, constitute the meeting record.

533 E Waterworks Drive
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Committee Members in Attendance

—Barry Barnum, City of St. George
—Larry Blake, Rancher
—Lee Bracken, City of Enterprise
—Dave Clark, Banker
—Paul Clove, Businessman
—Tracy Ence, Development
—Murray Gubler, Chamber of Commerce
—Mary Jo Hafen, City of Santa Clara
—Craig Hammer, Education
—Chris Hart, City of Ivins
—Scott Hirschi, Economic Development
—David Isom, Health Care
—Floyd Jackson, Contractor
—Dick Kohler, Architect
—Natalie Larson, Realtor
—Lynn Olds, Toquerville Citizen
—Brad Seegmiller, Southern Utah Title Company
—Lawrence Snow, Shivwits Band of Paiute
—Darin Thomas, City of Hurricane
—John Wadsworth, Farmer
—Christi Wedig, Citizens for Dixie's Future
—Travis Wilkinson, Small Business
—Karl Wilson, City of LaVerkin

Committee Members Absent or Excused

—Kip Bowler, Banker/Rancher
—James Eardley, Washington County
—Clair Hall, Community
—Mike Heaton, City of Washington
—Carol Sapp, Southern Utah Home Builders Association
—Don Stratton, Vision Dixie

District/Committee Staff Members in Attendance

—Ed Bowler, Board Chairman
—Ronald Thompson, General Manger
—Barbara Hjelle, Associate General Manager/Counsel
—Corey Cram, Associate General Manager
—Roberta McMullin, Executive Administrator
—Julie Breckenridge, Water Conservation Manager
—Doug Wilson, New Project Development & Information Systems Manager
—Ann Jensen, Publications and Outreach
—Tina Esplin, Legal Secretary
—Brie Thompson, Chemical Engineer
—Judie Brailsford, Public Outreach
—Dr. John Brailsford, Facilitator

Other Attendees

—Paul Wright
—Matt Millis
—René Fleming
—Waid Reynolds
—Cheri Reynolds
—Lisa Rutherford
—Paul Van Dam
—Ashley Gilreath

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MEETING SUMMARY con't

NOTES:

Agenda

1. Welcome and Introductions

John Brailsford welcomed everyone and called the meeting to order. He introduced Craig Hammer, who has replaced Max Rose as education representative on the committee, and thanked him for his willingness to serve.

2. Address questions/comments/conservation definitions

John said the questions and comments received have been mainly classified into three categories: financing of water related projects and peer review for studies related to water, which are going to be addressed at future meetings, and water conservation which will be addressed today.

3. State requirements for water supply

John introduced Paul Wright, Southwest District Engineer for the Utah Department of Environmental Quality, who serves the citizens of Washington, Kane, Iron, Garfield and Beaver counties. Paul said he deals with all divisions within the Department of Environmental Quality, which includes not just drinking water, but hazardous waste, water quality and radiation or air quality. He does all plan reviews for drinking water systems and works closely with the people in the water industry here. He was asked to talk about drinking water sizing requirements and how it relates to water systems in general and conservation. He stated sizing requirements in the rules for the Division of Drinking Water are made up of two components, source capacity and storage volume. Source capacity is the drinking water sources which include wells, springs and water treatment plants. In drinking water rules we have tables that tell us what we are supposed to use for source size. This includes indoor and outdoor water demands.

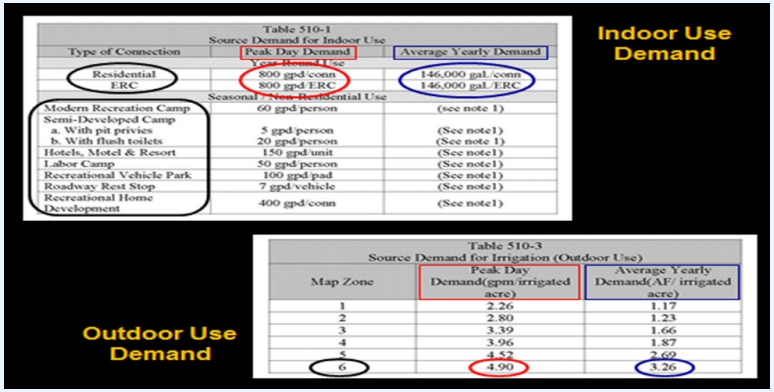

Table 510-1
Source Demand for Indoor Use

Type of Connection	Peak Day Demand	Average Yearly Demand
Year-Round Use		
Residential ERC	800 gpd/conn 800 gpd/ERC	146,000 gal./conn 146,000 gal./ERC
Seasonal Non-Residential Use		
Modern Recreation Camp	60 gpd/person	(see note 1)
Semi-Developed Camp		
a. With pit privies	5 gpd/person	(See note1)
b. With flush toilets	20 gpd/person	(See note 1)
Hotels, Motel & Resort	150 gpd/unit	(See note1)
Labor Camp	50 gpd/person	(See note1)
Recreational Vehicle Park	100 gpd/pad	(See note1)
Roadway Rest Stop	7 gpd/vehicle	(See note1)
Recreational Home Development	400 gpd/conn	(See note1)

Indoor Use Demand

Table 510-3
Source Demand for Irrigation (Outdoor Use)

Map Zone	Peak Day Demand(gpm/irrigated acre)	Average Yearly Demand(AF/ irrigated acre)
1	2.26	1.17
2	2.80	1.23
3	3.39	1.66
4	3.96	1.87
5	4.52	2.69
6	4.90	3.26

Outdoor Use Demand

The equivalent residential connection (ERC) for indoor water demand equates to about 400 gallons per day per connection. This system requirement includes, not just public drinking water systems, but facilities that serve water to 25 or more people for 60 days or more per year.

There are also source sizing requirements for peak day demand and average yearly demand.

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NOTES:

MEETING SUMMARY con't

R309-510-7 Minimum Source Sizing

Peak Day (Flow Capacity)

- **Indoor Water Use** *(Residential Connection or ERC)*
  Peak Day Demand = 800 gpd
- **Outdoor Water Use** *(assuming in Zone 6)*
  Peak Day Demand = 4.90 gpm/irrigated acre

R309-510-7 Minimum Source Sizing

Average Yearly Demand (Water Rights)

- **Indoor Water Use** *(Residential Connection or ERC)*
  Avg. Yearly Demand = 146,000 gallon/year
- **Outdoor Water Use** *(assuming in Zone 6)*
  Avg. Yearly Demand = 3.26 AF/irrigated acre

The average yearly demand is really the water rights the water system needs to have to be able to serve the community. The other component of source capacity is a peak day or flow capacity component. Flow capacity is determined by well pump volume, the flow of a spring or the processing capacity of a treatment plant.

Storage volume is determined by systems ERCs and irrigated acres and zones water requirements. Water tank(s) are designed into the system to satisfy this storage requirement. See Storage Volume Table below.

Storage for Indoor Use

Table 510-4
Storage Volume for Indoor Use

Type	Volume Required(gallons)
Community Systems	
Residential; per single resident service connection	400
Non-Residential; per Equivalent Residential Connection (ERC)	400
Non-Community Systems	
Modern Recreation Camp; per person	30
Semi-Developed Camp; per person	
a. with Pit Privies	2.5
b. with Flush Toilets	10
Hotel, Motel, & Resorts; per unit	75
Labor Camp; per unit	25
Recreational Vehicle Park; per pad	50
Roadway Rest Stop; per vehicle	3.5
Recreational Home Development; per connection	400

Storage for Outdoor Use

Table 510-5
Storage Volume for Outdoor Use

Map Zone	Volume Required (gallons/irrigated acre)
1	1,782
2	1,873
3	2,528
4	2,848
5	4,081
6	4,964

The purpose of storage is to attenuate the peak water use requirements so we size storage based on average peak day use because demand goes up in the morning as people wake up and take showers, drops off in the middle of the day and goes up again in the evening, so storage takes care of that. When determining minimum storage requirements, not only is indoor and outdoor demand considered but also fire suppression, emergency storage and pipeline capacity is specified to handle peak uses.

R309-510-8 Minimum Storage Sizing

Indoor + Outdoor + Fire + Emergency

- **Indoor & Outdoor Storage Volume**
  - Indoor Use = 400 gal/ERC (average day demand)
  - Outdoor Use = 4,964 gal/irrigated acre (in Zone 6)
- **Fire Suppression Storage Volume**
  - Local fire marshal requirements of flow and duration
  - Default 120,000 gal (= 1,000 gpm x 120 min) if no better data
- **Emergency Storage Volume**
  - System determines need & volume

Water managers are required to meet the demand and storage specification when planning for new projects. The state does allow water managers who have several years of accurate daily records to challenge the state's code and ask the supply and/or storage capacity requirement be reduced.

Paul showed a chart tracking the reduction of gallons per capita daily (GPCD) water use throughout the state. The chart came from a study completed for the Division of Water Resources by consultant Hansen Allen & Luce on the Utah's GPCD since 1970 showing that water use has declined significantly throughout the state and it is projected further reduction will be made through conservation in the future.

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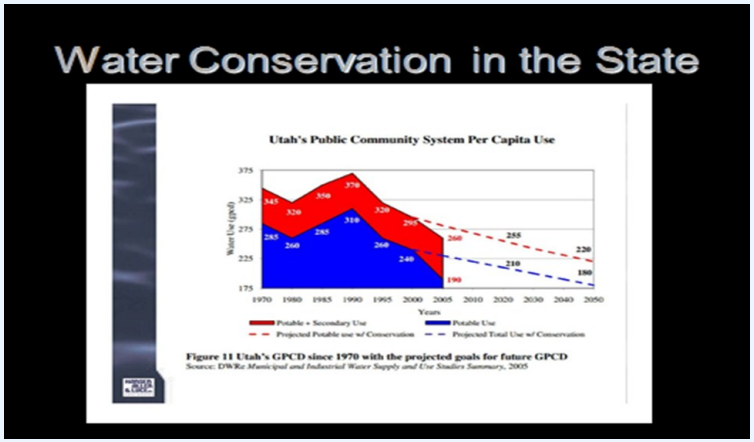
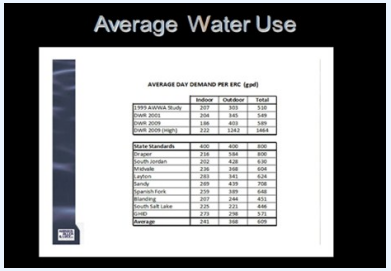
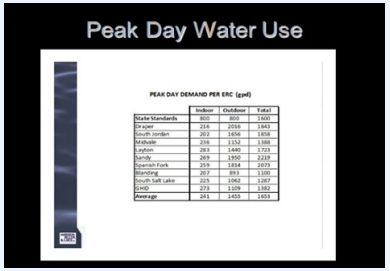


The Division of Drinking Water consultant also looked at average water use and peak day demand for nine communities:



	Indoor	Outdoor	Total
1999 AWWA Study	207	303	510
DWR 2001	204	345	549
DWR 2009	186	403	589
DWR 2009 (high)	222	1242	1464
State Standards	400	400	800
Draper	216	584	800
South Jordan	202	428	630
Midvale	236	368	604
Layton	283	341	624
Sandy	269	439	708
Spanish Fork	259	389	648
Blanding	207	244	451
South Salt Lake	225	221	446
GHID	273	298	571
Average	241	368	609



	Indoor	Outdoor	Total
State Standards	800	800	1600
Draper	216	2016	1843
South Jordan	202	1656	1858
Midvale	236	1152	1388
Layton	283	1440	1723
Sandy	269	1950	2219
Spanish Fork	259	1814	2073
Blanding	207	893	1100
South Salt Lake	225	1062	1287
GHID	273	1109	1382
Average	241	1455	1653

Paul said the indoor use is significantly lower than the state standards and is pretty constant throughout the year, but outdoor use has varying numbers because each system is unique. Some have secondary systems, some don't, some are metered, some aren't and some have their own private wells just to name a few of the variables. It is very hard to compare communities to each other because each is different. Regardless, the state's standards for sizing, storage and water demand work very well.

Christy Wedig said she keeps hearing there is not the data to compare and that everyone has a different formula in measuring. She asked if there wouldn't be a benefit in capacity building and saving money on infrastructure and taxes to work towards standardization.

Ron said the state is working on coming up with a set of standardized measurements for everyone to use the same way. Julie said there is a difference in what the state requires for new systems and a standardization of measuring water use in GPCD. Barry said the questions are easy, but the answers are difficult. Even adding a secondary system in developments cost as much money as putting in the culinary water system because essentially there are two duplicate systems. One is for culinary water and one is for non-potable water. To have a secondary system, it is going to double the development costs for water so we are going to pay one way or another.

Ron said water out of the tap is tested and treated and built so people don't get sick, but it is not tested at all in secondary systems. We can utilize both qualities of water, but we still have to have fire flows, not just for the house, but for brush fires and for maintaining public safety.

– COMMITTEE BREAK –

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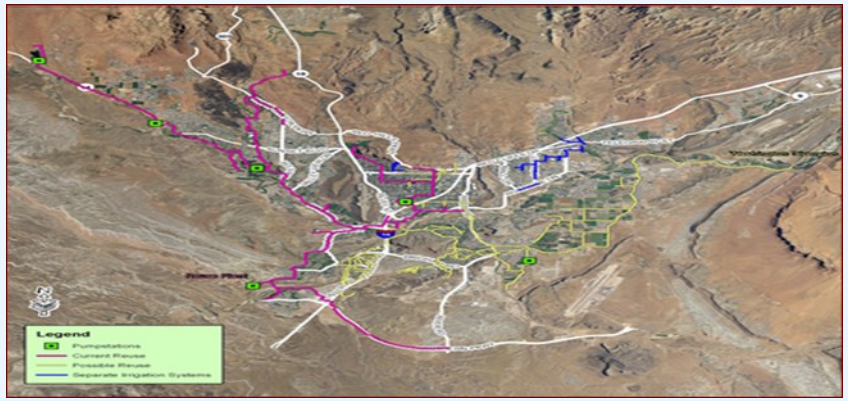
NOTES:

4. City of St. George Water Reuse Facility

John introduced René Fleming, St. George City Conservation Coordinator. René defined reuse water as treated water from all indoor water use. St. George City's regional wastewater treatment plant collects the water from the communities of Ivins, Santa Clara, Washington and St. George. It has a water right that allows its use a second time, with the obligation to maintain at least a 3 cfs flow into the Virgin River. The Virgin River is a tributary of the Colorado River that flows into Lake Mead so everything put down the drain, including toilets, becomes drinking water for Las Vegas. We need to remember that we are also downstream. The reuse water discharged into the Virgin River improves the quality of its water and protects the native and endangered species. The sewer water goes through a cleaning process which makes it clean. For reuse water, another process is added. This process brings it to a higher reuse standard because it has to meet a standard for minimal human contact when used for irrigation. This reuse water is stored in St. George's urban fishing ponds. It is combined with irrigation water and used for irrigation on golf courses, schools and parks. René talked about the cost of processing the water. Because it is treated wastewater, it is assumed that there isn't much of a cost, but the cost is significant. First it is treated for culinary water use, then it is treated through the wastewater treatment plant and then it receives another process through the reuse plant. The total cost is about $2.95 per $1,000 gallons. This calculates to about $960 an acre foot for that water to go into our irrigation system. Costs that aren't included in this price are pumping costs, energy costs and chemical costs. The wastewater treatment plant treats about 9 MGD, but because of plant limitations only 7 MGD is used for reuse because of limited storage and because the flow to the plant fluctuates creating peaks when the water is received. It peaks in the morning, slows down and peaks again in the evening. Because the flow fluctuates, the plant is not able to process the water through the reuse treatment plant. Another challenge in the wastewater process is the total dissolved solids (TDS) are pretty high due to high water softener use by residents. The water has to be sampled, and there are additional regulations the city has to deal with. All these factors make the reuse water harder to manage.



Reuse water when treated is almost to drinking water standards which makes it pretty safe. Even with that, René assured the committee that the splash pads and water kids play in is culinary water because of increased human contact.

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NOTES:

5. Washington County Water Conservation

Julie Breckenridge, Water Conservation Manager, explained the programs that the Water District has done, is currently doing and plans for future programs:

- Adopted the first Water Conservation Plan in Utah in 1996 which is updated every five years.
- Annual Water Fair at Dixie State College of approximately 1,800 fourth grade students – 21 schools (1 charter and 1 private) participating in 69 classes.
- Water-wise Demonstration Garden demonstrating green, lush water-efficient landscapes and provides monthly water-wise workshops and a horticulturist available onsite to provide tours and answer landscape questions and concerns. The Garden is also used by USU extension with their master gardening program and Utah Nursery and Landscape for teaching, training and certifications, and is also used for weddings, parties, photo shoots, bird watching, etc.
- The Garden Fair is a family oriented event that offers booths about community opportunities, water-efficient resources and sustainable products.
- The Fall Festival is a community event to increase interest and motivation for people to see the educational resources available at The Garden.
- The Junior Ranger Scavenger Hunt is a ten-agency event to educate young people on preservation of our natural resources such as native fish, recycling, birds, animals, etc.
- Water Week is part of the state-designated Water Awareness Week. The Water District partners with St. George and hosts tours of the water treatment plant and the wastewater plant and water walk to bring awareness of water issues.
- Water checks are offered free and are done by an intern running a series of tests on people's sprinkler systems, providing suggestions on what can be done to improve each system.
- Brackish Water Study involves finding plants that tolerate the high salt content water which is diverted below Pah Tempe springs and developing best management practices for using this water on landscape with high salt content.
- EPA Water Sense Partner is a campaign where people are encouraged to save water by promoting Fix a Leak Week and offering free home audit kits.
- Community Garden at Tonaquint provides education in planning a sustainable landscape which educates the public. There are 42 plots, 6 are senior friendly and 6 are public plots that donate produce to the soup kitchen.
- Governor's Water Conservation Team member
- Local media campaign
- Red Hills Desert Garden is a multi-agency project with St. George City, the Virgin River Program and the Red Cliffs Desert Reserve working to create a public education facility highlighting native plants, native fish and the desert tortoise and its habitat.
- Grant Programs to help offset some of the cost of running conservation programs and have received help to build the demonstration garden, staff a horticulturist for the project, rebates on changing existing sprinkler system controllers with smart controllers, WaterSense toilet rebates, audit and loss control equipment to help in leak detection and determine water loss, water smart irrigation upgrades, multi-family high-efficiency washer rebates, and water audits and retrofits for motels/hotels.
- Future water conservation programs
- There has been an 18.2% water use reduction.

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NOTES:

6. Meeting Wrap-Up

The meeting was concluded by John thanking the CIRPAC members, the presenters and those in attendance for their participation.

7. Public Comments

John read the questions into record and they will be addressed at future meetings as posted on the agenda:

- What are incentives for water users to use reuse water vs. culinary water?
- 47% of water is used for CII (commercial) use. What is being done to conserve in that area?
- Other cities have a .25 af per unit and ours is .89 af. Why is there such a discrepancy?
- Natural gas prices are projected to rise. What natural gas costs will be used to compute Lake Powell pipeline costs?

2013 CIRPAC Meeting Schedule:

2013 Thursday, February 28	4:00 – 6:00 pm
2013 Thursday, March 28	4:00 – 6:00 pm
2013 Thursday, April 25	4:00 – 6:00 pm
2013 Thursday, May 23	4:00 – 6:00 pm

Adjourn

The meeting was adjourned at 6:00 p.m.

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