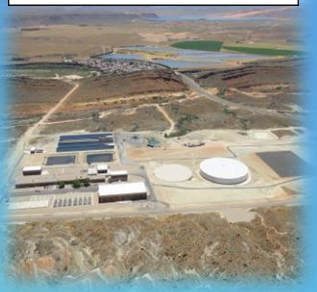
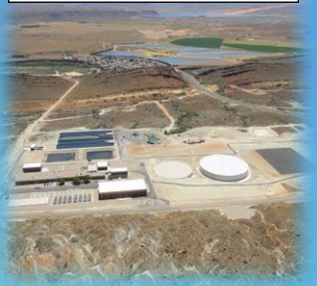
WASHINGTON COUNTY
Water for Today and Tomorrow
Conservation Every Day℠
WATER CONSERVANCY DISTRICT



Meeting Four

24 January 2013



Meeting called to order

Dr. John Brailsford

Meeting Four Agenda

24 January 2013

Washington County Water Conservancy District Office - 4:00-6:00 pm

1. Welcome: Dr. John Brailsford, Facilitator
2. Address questions and comments/conservation definitions: Dr. John Brailsford, Facilitator
3. State requirements for water supply: J. Paul Wright, P.E., Department of Environmental Quality, Southwest District Engineer
4. Washington County Water Conservation: Julie Breckenridge, District Water Conservation Manager
5. City of St. George Water Reuse Facility: René Fleming, St. George City Water and Energy Conservation Coordinator
6. Balance in Water Management: Dennis J. Strong, Director, Utah Division of Water Resources
7. Meeting Wrap-Up
8. Public Comment
9. Adjourn

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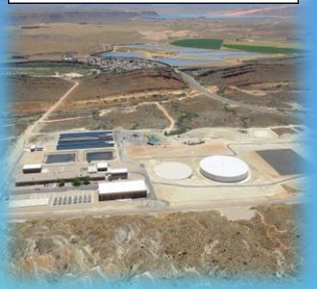


Welcome

Dr. John Brailsford

Address Questions and Comments

10/25/2012

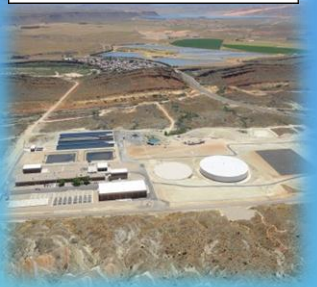
Water Conservation Definitions

Thoughtful Planning

- Future supply
- Price
- Reliability
- Quality

Responsible Management

- Use water WISELY
- Use water EFFICIENTLY
- Use water EFFECTIVELY
- Use LESS water
- Control water WASTE



Drinking Water Sizing Requirements

Utah Department of Environmental Quality

J. Paul Wright, P.E.

Minimum Sizing Requirements

Made up of two Components

R309-510-7 Source Capacity

R309-510-8 Storage Volume

Minimum Sizing Requirements

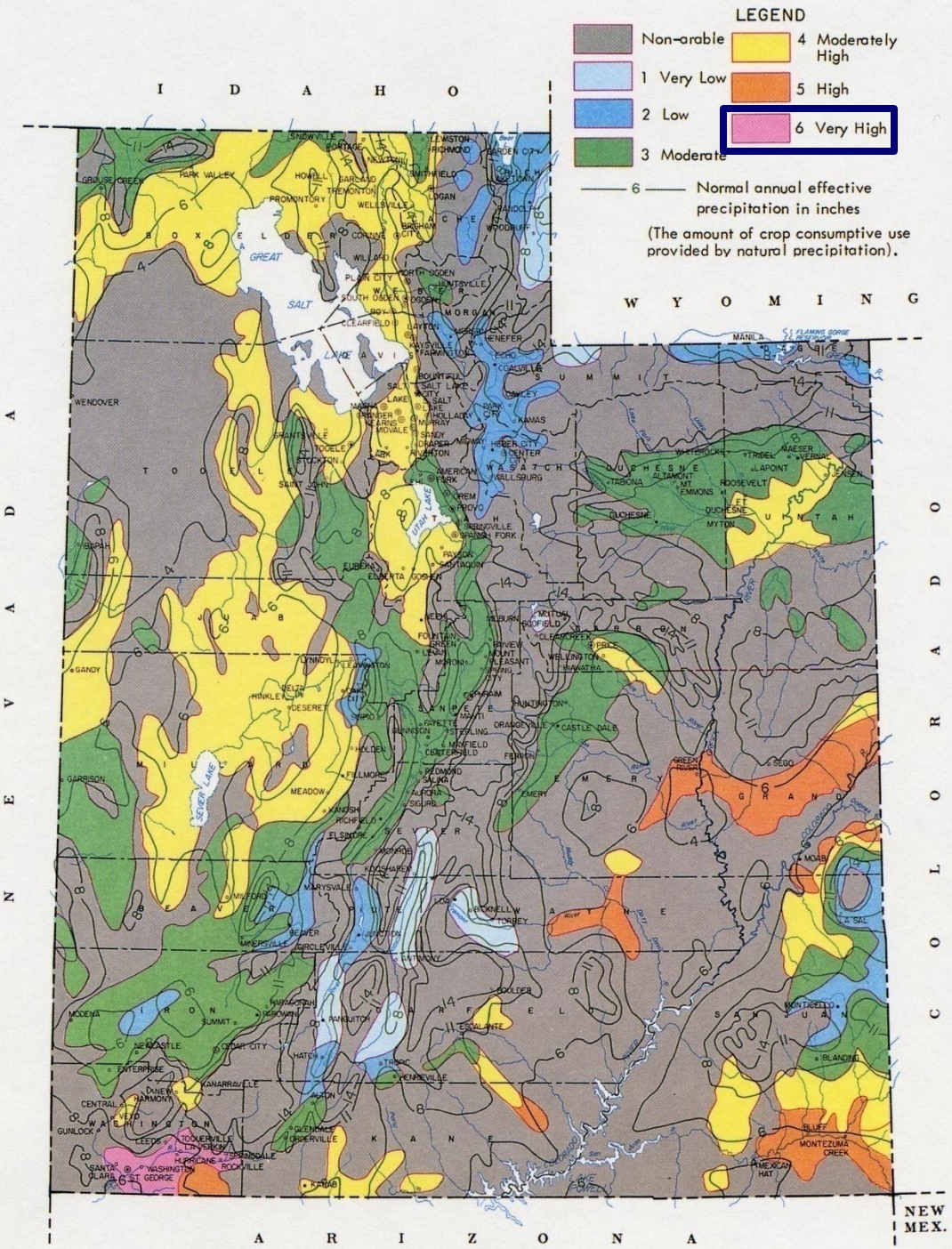
Source Capacity

Indoor Use Demand

Table 510-1 Source Demand for Indoor Use		
Type of Connection	Peak Day Demand	Average Yearly Demand
Year Round Use		
Residential	800 gpd/conn	146,000 gal./conn
ERC	800 gpd/ERC	146,000 gal./ERC
Seasonal / Non-Residential Use		
Modern Recreation Camp	60 gpd/person	(see note 1)
Semi-Developed Camp a. With pit privies b. With flush toilets	 5 gpd/person 20 gpd/person	 (See note1) (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)

Outdoor 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 Water Use Zones

*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

*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

Minimum Sizing Requirements

Storage Volume

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 b. with Flush Toilets	 2.5 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

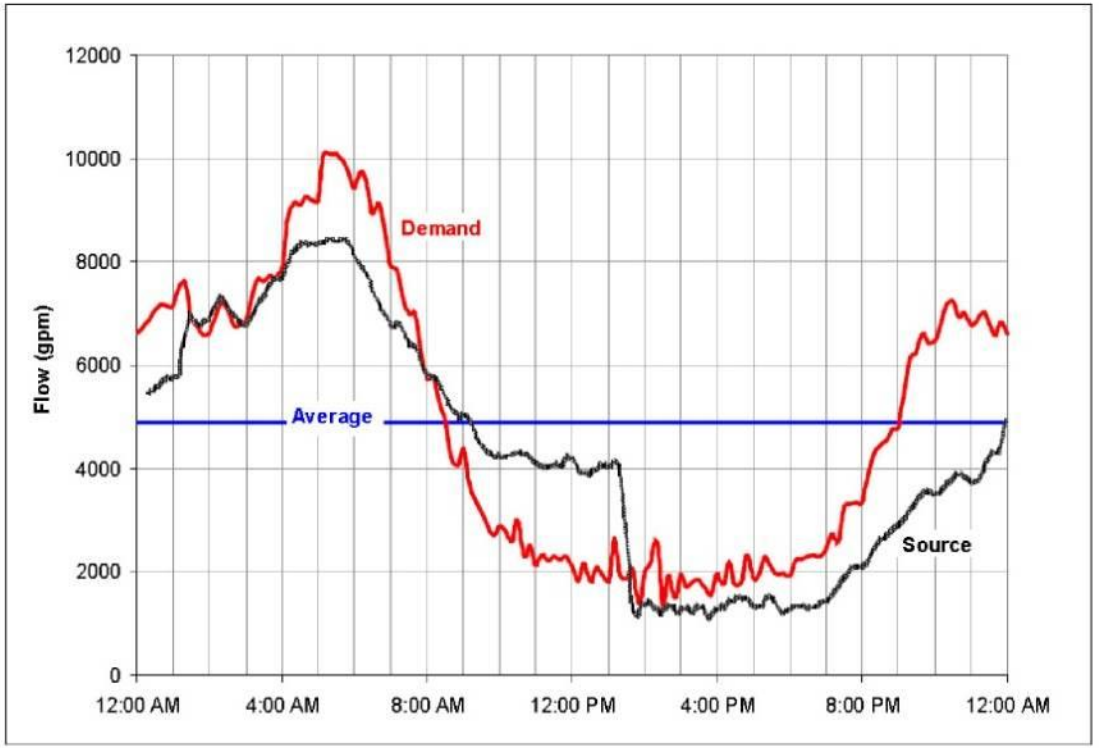
Storage for Outdoor Use

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

Minimum Storage Sizing

The purpose of storage is to attenuate the peak water use requirements, therefore, we size storage based on average daily use

Storage Sizing – Diurnal Flow



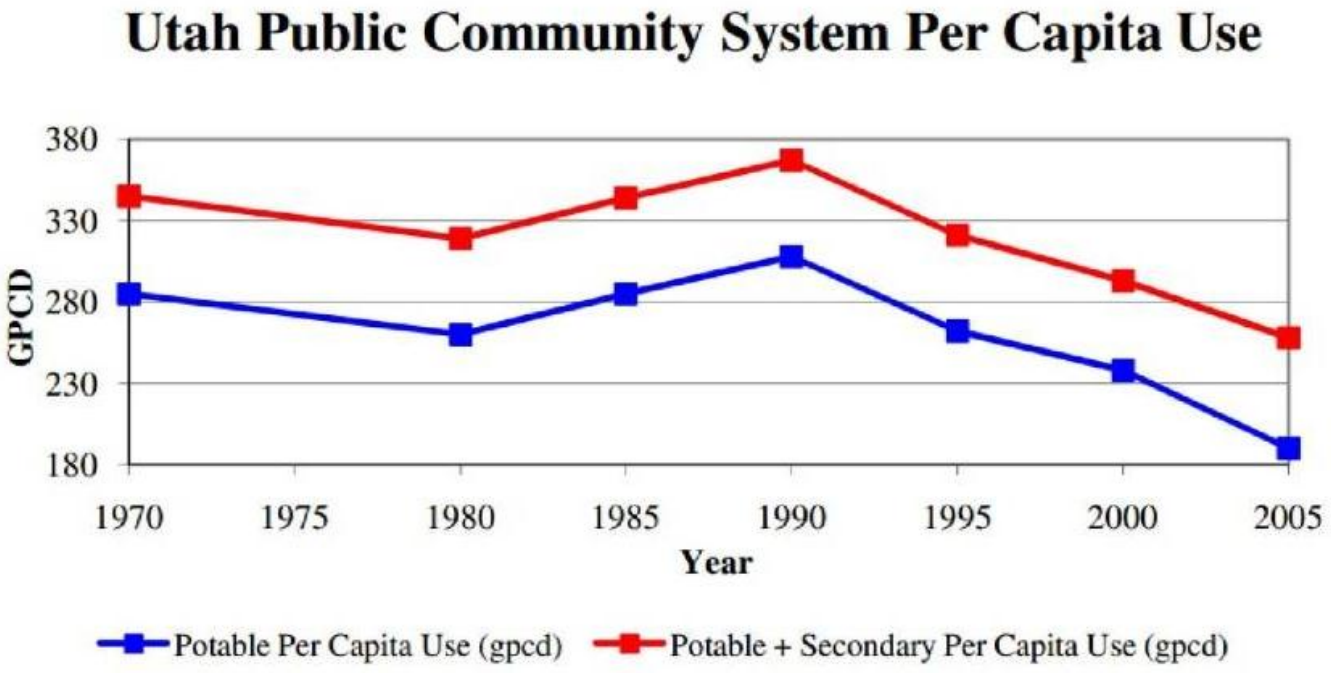
*R309-510-8 Minimum **Storage** Sizing*

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

Peak Use controls sizing of facilities

Water Conservation in the State



Utah public community systems per capita water use

Source: DWRe *Municipal and Industrial Water Supply and Use Studies Summary*, 2005. Division of Water Rights, Utah Water Use Data Reports, 1980 – 2000.

Water Conservation in the State

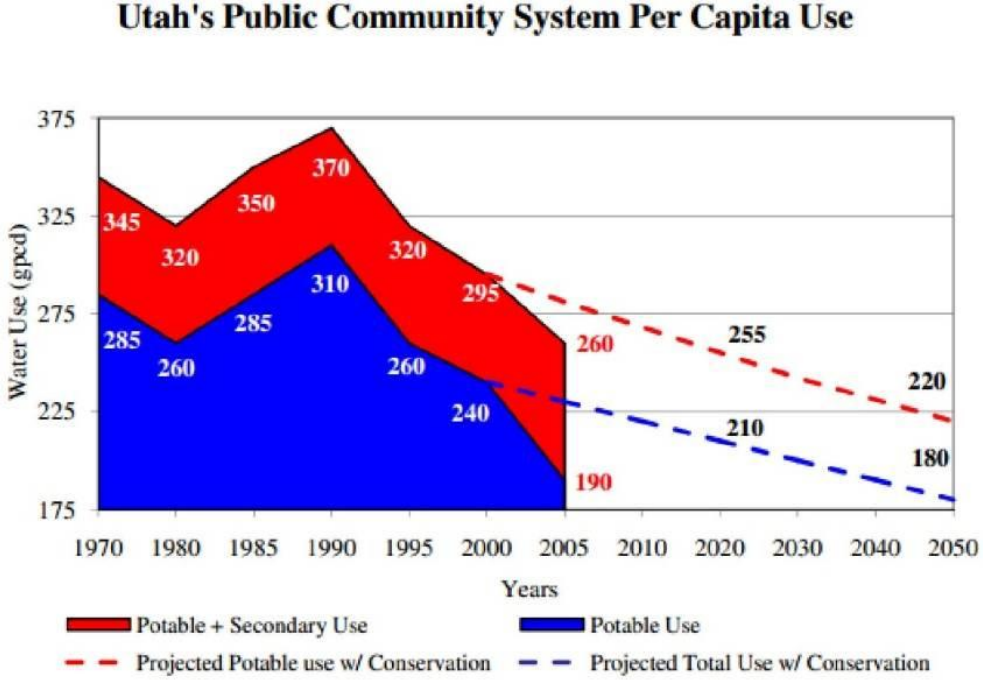


Figure 11 Utah's GPCD since 1970 with the projected goals for future GPCD
Source: DWRe *Municipal and Industrial Water Supply and Use Studies Summary*, 2005

HANSEN ALLEN & LUCE inc

Average Water Use

AVERAGE DAY DEMAND PER ERC (gpd)

	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

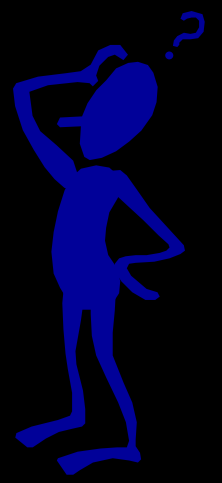
Peak Day Water Use

PEAK DAY DEMAND PER ERC (gpd)

	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

Questions?

Utah Department of
Environmental Quality
Southwest District Engineer
J. Paul Wright, P.E.
pwright@utah.gov
Tel: (435) 986-2590



Washington County Water Conservation

Julie Breckenridge

Water Conservation Plan

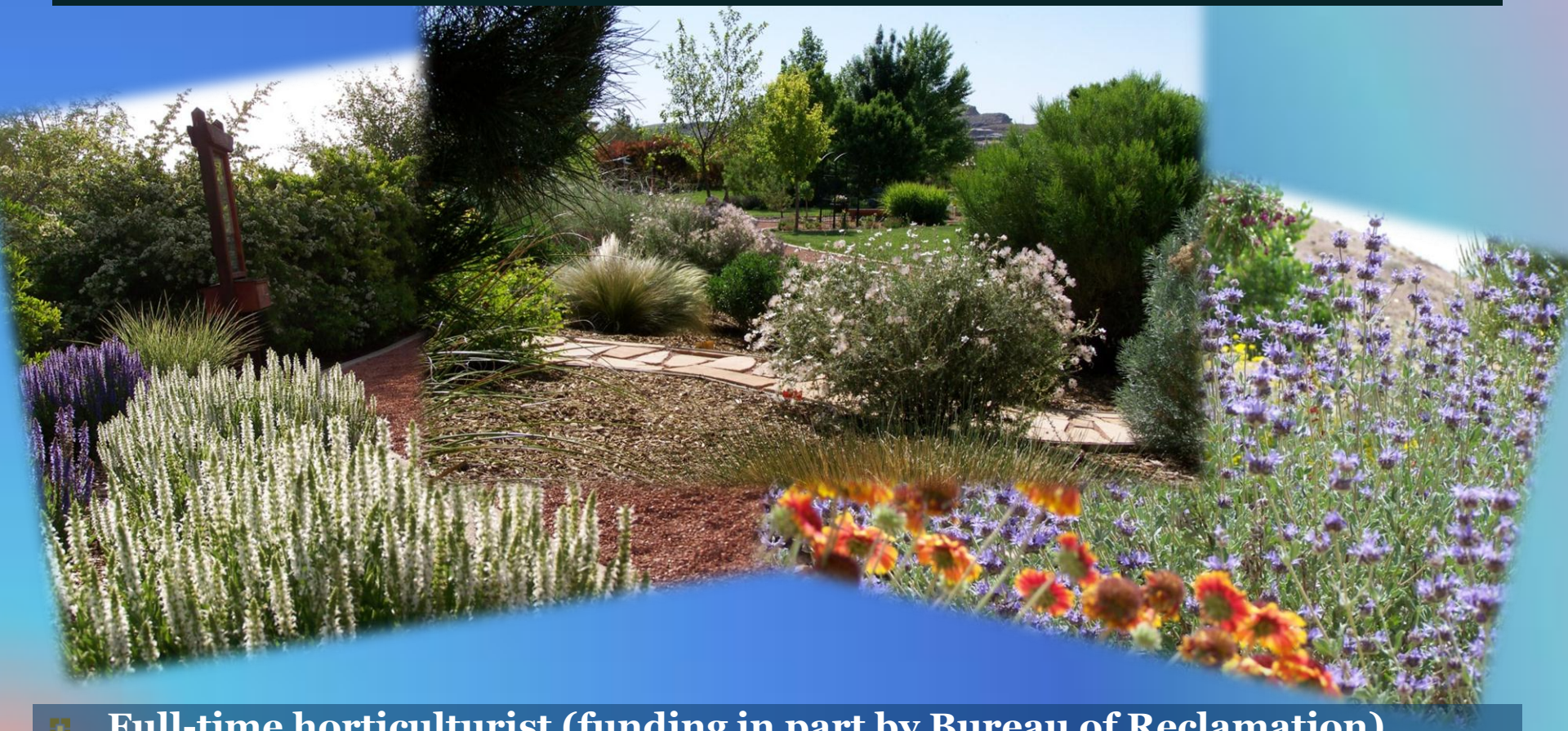
- Adopted in 1996
- 1998 HB71 requires culinary water systems
- Updates required every 5 years
- 2 updates (another due in 2015)

Ongoing Programs

Annual Water Fair 2012

- 1,800 - 4th Grade Students
- 69 classes, 21 schools (1 charter, 1 private)

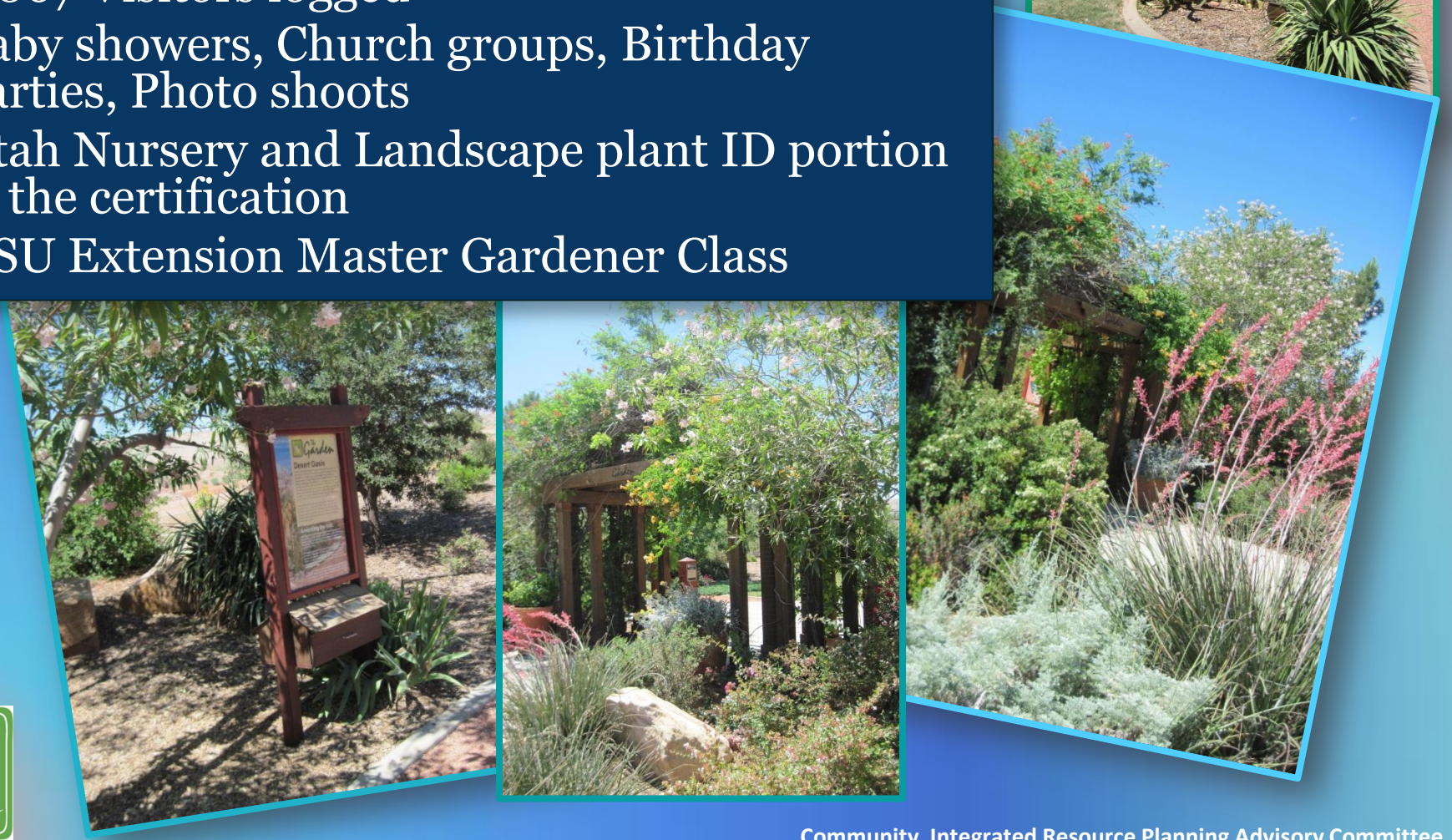
Water-wise Demonstration Garden



- Full-time horticulturist (funding in part by Bureau of Reclamation)

The Garden

- 15 Workshops
- 2,067 Visitors logged
- Baby showers, Church groups, Birthday Parties, Photo shoots
- Utah Nursery and Landscape plant ID portion of the certification
- USU Extension Master Gardener Class



The Garden

2012 - 15 Weddings

The Garden Fair

waterwise

Community Integrated Resource Planning Advisory Committee

The Garden

FALL FESTIVAL

Puking Pumpkins

waterwise

Community Integrated Resource Planning Advisory Committee

The Garden

Junior Ranger Scavenger Hunt

10 Agency Event

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

WCSW
WASHINGTON COUNTY SOLID WASTE

NATIONAL PARK SERVICE

WASHINGTON COUNTY
WATER CONSERVANCY DISTRICT

City of St. George
LEISURE SERVICES DEPARTMENT

Girl Scouts
Where Girls Grow Strong

Dixie / Arizona Strip Interpretive Association
D/A.S.I.A.

FOREST SERVICE
US
DEPARTMENT OF AGRICULTURE

JUNIOR RANGER
EXPLORE • LEARN • PROTECT

waterwise

Community Integrated Resource Planning Advisory Committee

Water Week

Garden Fair

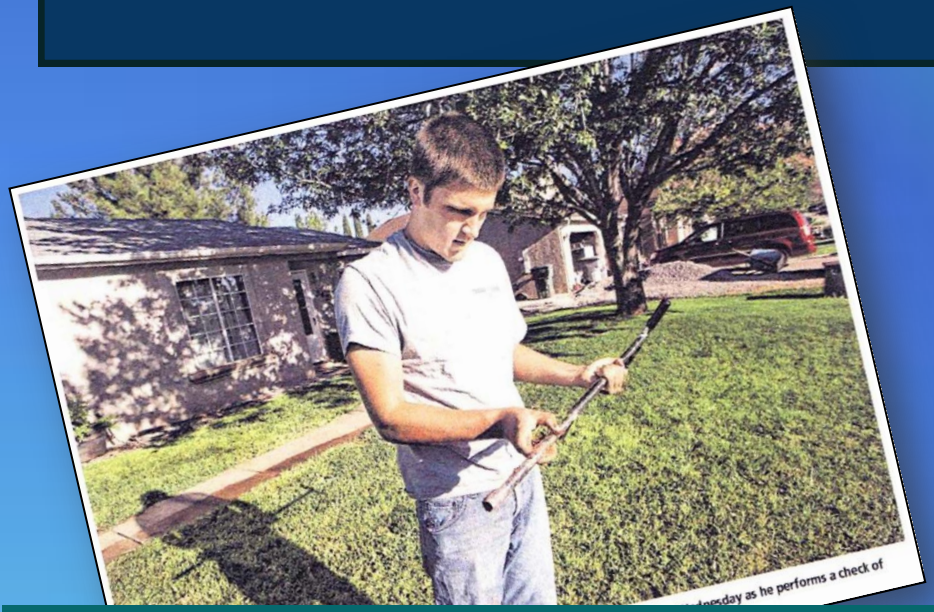
Water Walk

Facility Tours

waterwise

Community Integrated Resource Planning Advisory Committee

Water Checks/Brackish Water Study



194 water checks in 2012

EPA WaterSense Fix-a-leak Week

Fix a Leak Week

Every Drop Counts!

Did you know that an American home can waste, on average, more than 10,000 gallons of water every year due to running toilets, dripping faucets and other household leaks? Nationwide, more than one trillion gallons of water leak from U.S. homes annually.

That's why *WaterSense* reminds Americans to check plumbing fixtures and irrigation systems each year during Fix a Leak Week. Join in this conservation effort and fix your leaks during the week of March 11, 2012.

Take the pledge "I'm for Water" at www.epa.gov/watersense/pledge and then stop by Washington County Water Conservancy District for a free home water audit kit.

- **Promoted through *Water Line***
- **News release**
- **Distributed Home Audit Kits**

Community Garden At Tonaquint

35 plots used + 6 “public”

Tonaquint waterwise Community Garden

Community Garden At Tonaquint

Donated 350 pounds of produce to the Soup Kitchen

Tonaquint waterwise Community Garden

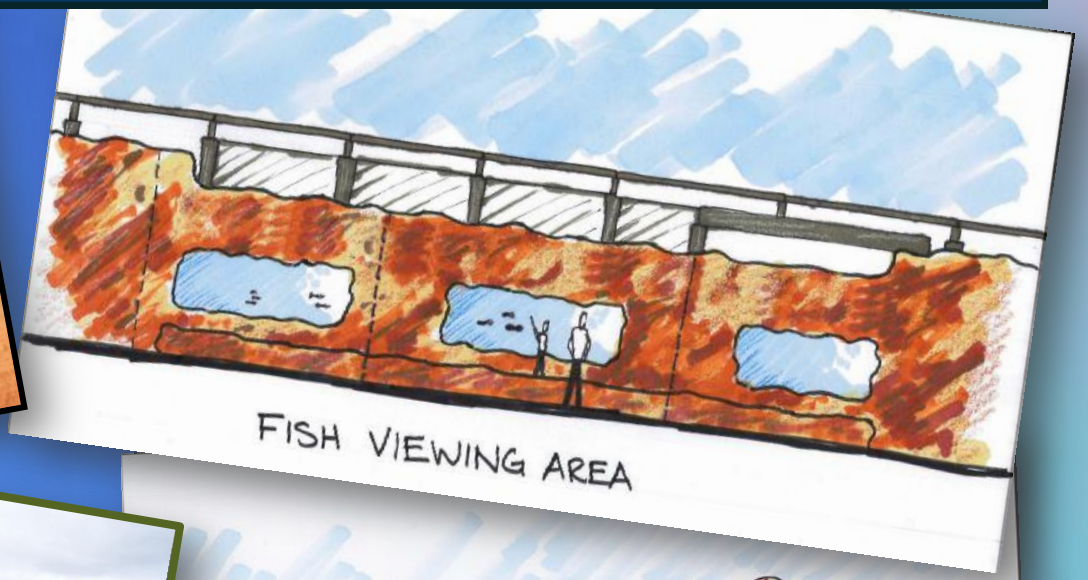
More ongoing programs

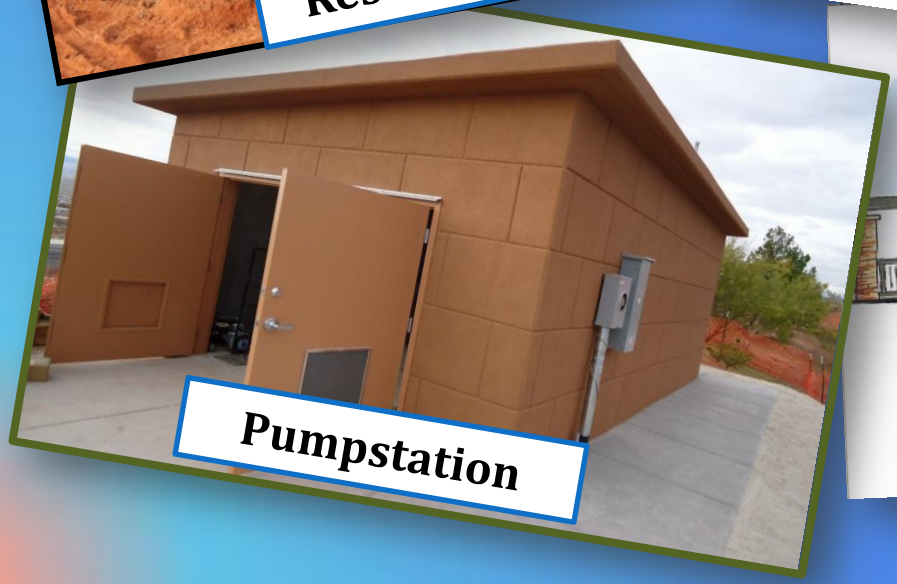
- Governor's Water Conservation Team member
- Local media campaign
- EPA WaterSense Partner/Fix-a-leak Week

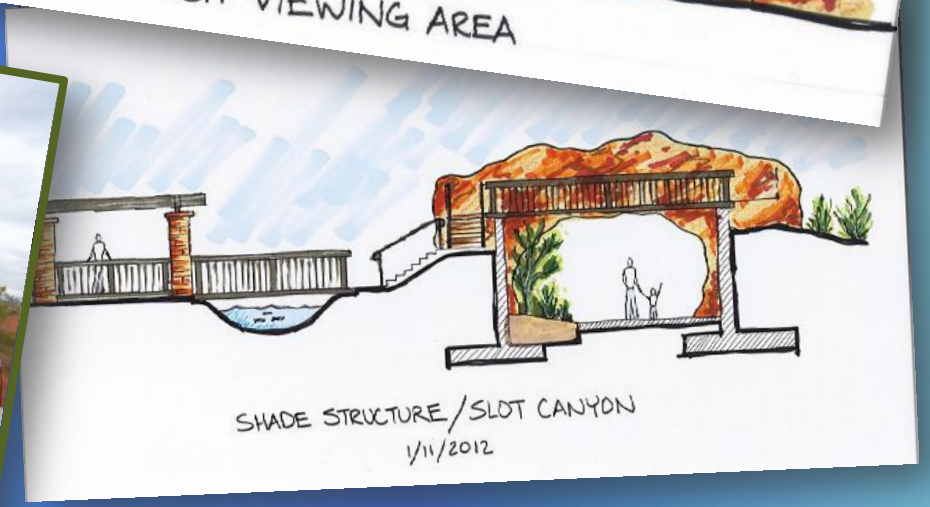
Red Hills Desert Garden

Coming Fall 2013 -- multi-agency cooperation project

Red Hills Desert Garden







Red Hills Desert Garden

Coming Spring 2013

Community Integrated Resource Planning Advisory Committee

Grant Programs

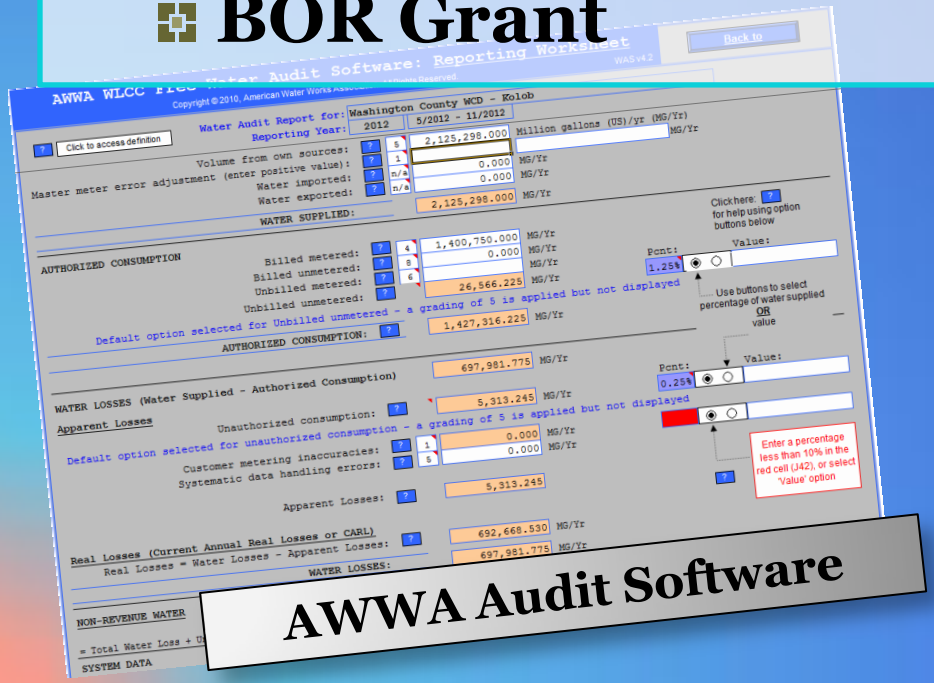
2011-2012

- WaterSense Toilet Rebate
  - 453 Number of Accounts (936 toilets)
    - 4 Motels
    - 1 Apartment Building
  - Bureau of Reclamation (BOR) Grant

2011-2012

- **Audit and Loss Control Program**
  - **Best Management Practices**
  - **BOR Grant**

Water Audit & Loss Control Manual



AWWA Audit Software

Equipment

2012-2013

Water Smart Irrigation Upgrades

Multi-family High-efficiency Washer Rebate

2013-2014

- **Water Audits and Retrofits for Motels/Hotels**

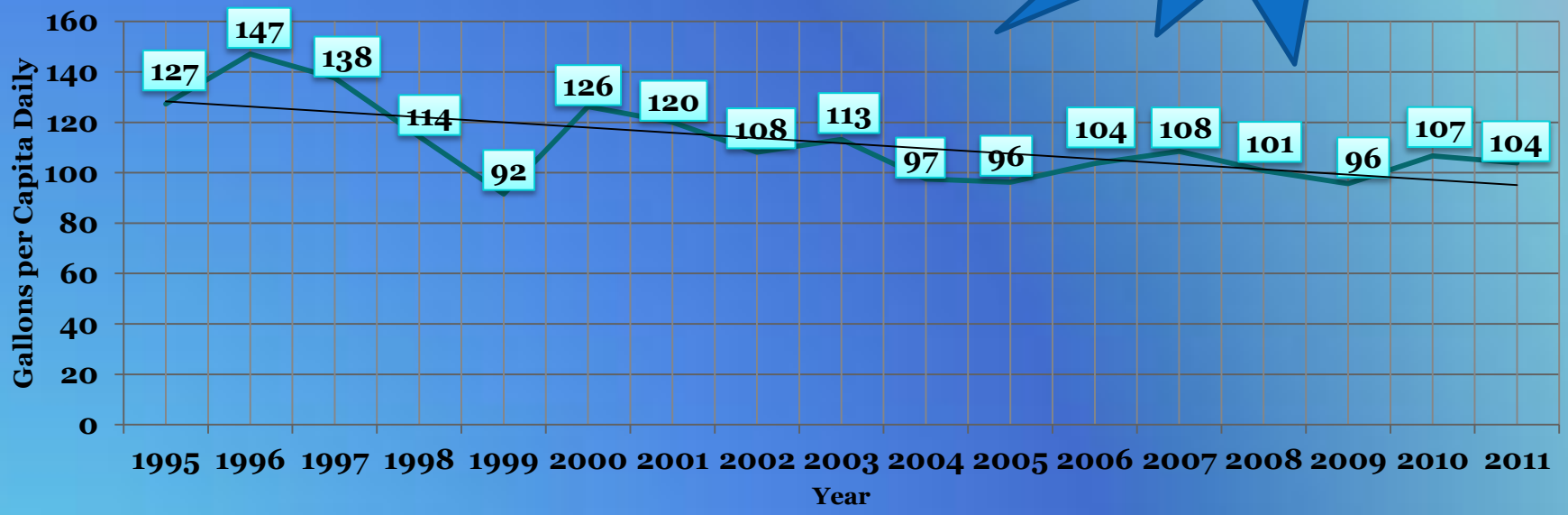
- **Re-offer WaterSense High-efficiency Toilet Rebate Program**

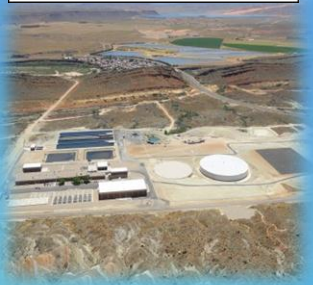
Future Water Conservation Programs

Measure Name	Implement Year
20-Gallon Challenge	2014
Award Programs for Water Savings by Businesses	2014
New Home Award Program Patterned after (WaterSense)	2014
Regulate Water Softeners	2015
New Development Requirement - Hot Water on Demand Systems	2015
School Building Retrofit	2015
New Development - Prohibits water wasting features	2015

Progress

18.2% water use reduction





--SHORT BREAK--

Reuse in St. George

René Fleming

Conservation Coordinator

January 24, 2013

What is reuse water?

Where does it come from?

Indoor water use in the cities of

- St. George
- Washington
  - Ivins
- Santa Clara

Water Right versus Discharge Obligation

- All water treated at the WWTP is associated with a water right
- It can be consumed more than once
- Obligated to maintain a 3 cfs flow in the Virgin River

Discharge to the Virgin River

- The Virgin River is a tributary of the Colorado River
- Flows to Lake Mead
- Improves quality of the river water
- Protects native and endangered species

Treated to reuse standards

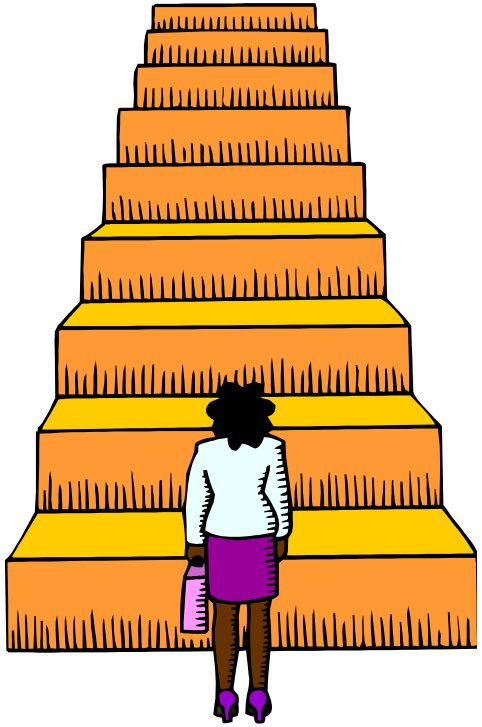
- Has to meet standards for minimal contact
- Augments other irrigation quality water

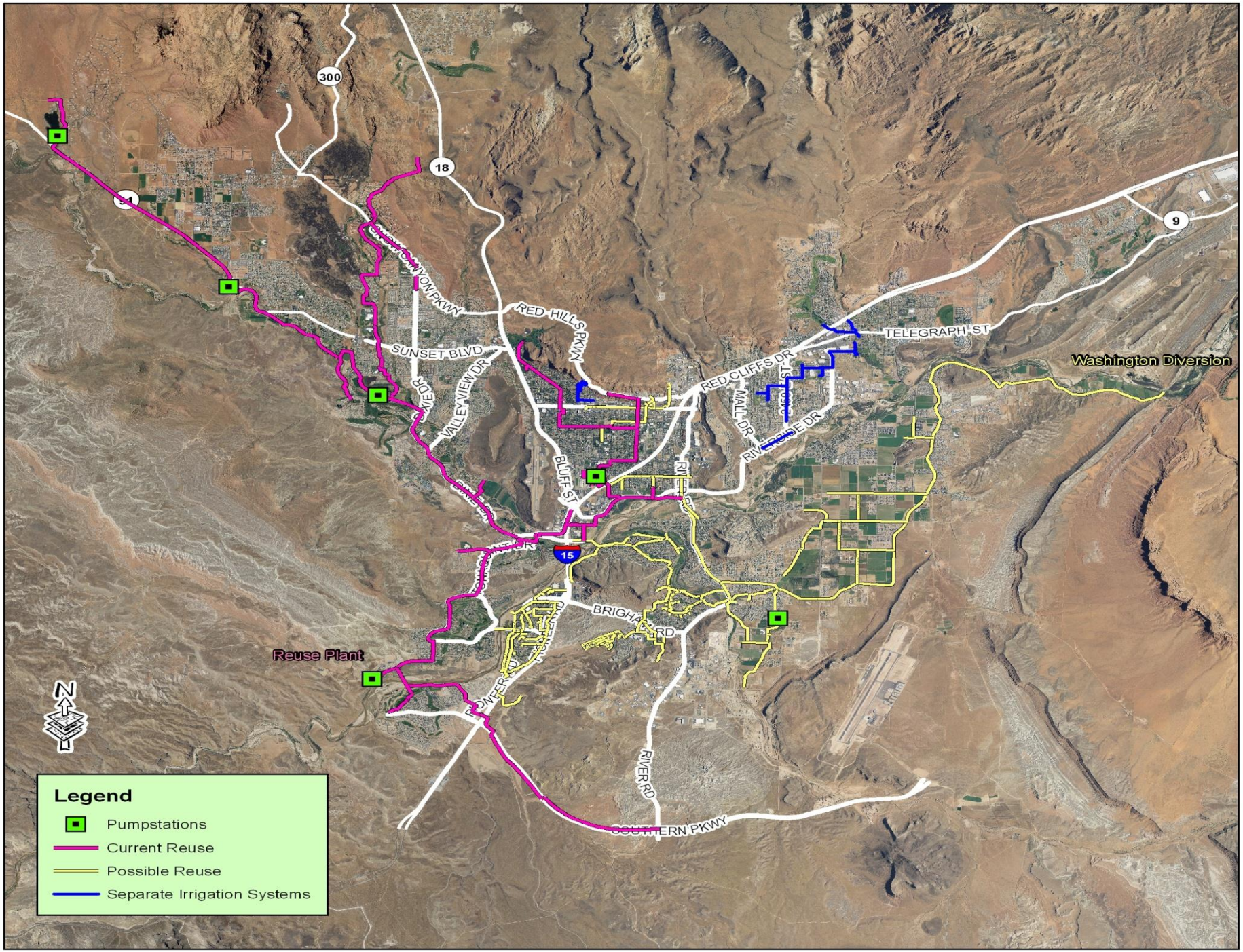
How much reuse water is available

- 7 MGD capacity
- Produced as it is available from the WWTP
- Production costs
  - Energy
  - Chlorine

Challenges

- Limited storage capacity
- Inconsistent flows
- TDS
- Cost to expand reuse plant
- Additional regulations




300
18
9
15
SUNSET BLVD
RED HILLS PKWY
TELEGRAPH ST
RED CLIFFS DR
MALL DR
VALLEY VIEW DR
BLUFFS ST
RIVER RD
SOUTHERN PKWY
Washington Diversion
Reuse Plant
N
Legend
Pumpstations
Current Reuse
Possible Reuse
Separate Irrigation Systems

Where reuse water is used

What should not go down the drain

- Paints
- Pills
- Chemicals
- Egg shells – abrasive to pumps
- Anything that can safely go in the trash

Take Back Medication Disposal

Lock Boxes

City of St. George Police Department Lobby
200 East 265 North
St. George UT 84770

Washington County Sheriff's Office
750 South 5300 West
Hurricane UT 84737

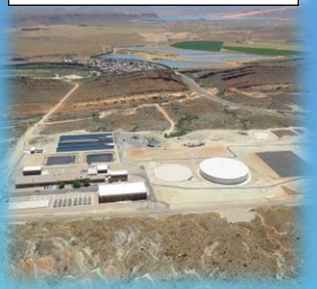
Questions?

Rene Fleming

rene.fleming@sgcity.org

435-627-4848

www.sgcity.org

2013 CIRPAC Meeting Schedule
-- Monthly except when notified --

2013 Thursday, January 24	4:00 – 6:00 pm
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