

## CITIZENS FOR DIXIE'S FUTURE

February 11, 2011

Ron Thompson, General Manager  
Washington County Water Conservancy District  
533 E. Waterworks Drive  
St. George, UT 84770

RE: Comments on Washington County Water Management and Conservation Plan

Dear Ron Thompson,

Citizens for Dixie's Future (CDF) appreciates the opportunity to comment on the proposed revision of the 1996 Washington County Water Management and Conservation Plan (Plan). CDF supports efficient use of land and water, and conservation of natural resources for the long-term sustainability of the county. We feel that several areas in the Plan need further revision. Our comments focus on the issues of identifying accurate growth rates and water use data, enforcement of water conservation ordinances, water conservation education, and adopting shorter term water conservation goals .

CDF believes that the growth rates used in the plan may be overstated. As an additional resource to the Plan, CDF suggests the Washington County Water Conservancy District (District) wait to finalize the Plan until the MWH environmental study plans for the Lake Powell Pipeline are complete in March. The high population growth rates of 5.59%-5.10% over the next 20 years are not consistent with recent data released at the Economic Summit. The current rates released at the Summit were far lower, at 2.50%. In 2009, the actual growth rate was only 1%. CDF is hopeful that the MWH study will provide more accurate numbers to calculate water needed for future growth.

We recognize the District has a leadership role to advocate for water conservation and offers an array of water conservation tools. However, real implementation and enforcement of water conservation measures has been limited. Ordinances such as the District's Model Landscape Ordinance have not been adopted by any city or the District. For example, in the update of the City of St. George Landscape Standards last year, CDF recommended that the City include parts of your Model Landscape Ordinance, but, they were not willing to do so. Without enforcement, the ordinances just tend to sit on a shelf. Ordinances can offer one of the highest benefit-cost ratios of any water conservation measures. So, CDF would recommend when opportunities arise to renew or update water contracts with the District, the District should develop new approaches to regulate cities by requiring specific water conservation measures and implementing enforcement of these measures. For example, require them adopt your water conservation Landscape Ordinance that requires xeriscaping. CDF fully supports this ordinance, homeowners waste significant amounts of water and time laboring to keep grass and plants green in our

desert climate. Recommending native and desert plants would benefit everyone with less cost and effort, and the plants are more likely to survive.

### Limiting the Use of Grass

In accordance with the water efficient Landscape Ordinance, CDF encourages the District to better educate the public on the drawbacks of planting grass in this desert environment. According to your information, outdoor watering compromises over 60% of the county's current water use. For example, traditional lawns like Kentucky Bluegrass require 25"-35" of water annually. The Southern Arizona Water Resources Association estimates that 3000 square feet of lawn uses between 9,000 and 15,000 gallons of water per month, whereas the same area planted with groundcover plants, shrubs, trees and native plants requires only 800 to 1,300 gallons. This is a significant difference that would make great impacts on the overall water use in the County. The District should promote water efficient landscaping and recommend the public, municipalities, and businesses limit their use of grass.

### Education

Education is often the best way to achieve change. The District could take advantage of another educational opportunity by informing the public of the expense of peak water use and how to limit peaks in the summer. This education could curb the expensive need to build larger than necessary infrastructure to just service summer's peak water demand. The District could use a slogan such as, "Beat the Peak" to educate the public on the problem of peak water usage. Any reduction in peak demand, including overwatering landscapes in the summer, will save money. If a water system adequately meets average day demand, but intense lawn watering in the summer causes "needle peaks" that stretch the system's capacity, the community will have to pay for the system to expand to cover those few peak days. If needle peaks are reduced through drought tolerant landscaping, public education and conservation, capital costs associated with new facilities such as the Lake Powell Pipeline can be reduced, postponed, or avoided. The District does mention reducing summer peak use in section D. Model Landscape Ordinance. In the Purpose and Need section, it includes:

#### Section 1: Purpose and Intent

- A. To protect and enhance the community environment, economic, recreational and aesthetic resources by promoting *efficient use of water in the community's landscapes*.
- B. To establish a structure for the design, installation, and maintenance of *water efficient landscapes* throughout the county.
- C. To reduce irrigation water waste by establishing *efficient landscape*.
- D. To *reduce peak summer usage and delay the need for new capital facilities*.

However, CDF feels that the adoption of this ordinance has fallen short.

## Water Conservation

CDF believes that more aggressive water conservation measures should be implemented before considering development of additional water infrastructure. While water officials agree that water conservation is the most readily available, least expensive and environmentally-sound source of water, the Lake Powell Pipeline project is consistently prioritized ahead of realistic and achievable conservation efforts. This suggests that there is a lack of commitment to maximizing water efficiency.

The Utah Division of Water Rights states the benefits of conservation clearly and succinctly:

*“Besides the obvious advantage of decreasing water demand and allowing existing water supplies to last longer, water conservation has a variety of important benefits. Water conservation can: delay expensive capital investments to upgrade or expand existing water facilities; reduce sewage flows, delaying the need for more wastewater treatment facilities; conserve energy as less water needs to be treated, pumped and distributed to the consumer; and reduce stream diversions, enhancing water quality, environmental and recreational functions.”* (DWR 2001. Utah State Water Plan: Utah’s Water Resources, Planning for the Future)

## Water Conservation Goals

CDF is concerned that the State of Utah’s 25% water conservation goal, as stated in the Plan, is not adequate. According to Western Resource Advocates, many utilities throughout the West expect to reduce per capita water use by 1% per year. This represents a good estimate of what is achievable for Washington County as well, especially considering water use has been reduced by 3% to 4% per year over the past decade. CDF suggests estimating water use reduction at 1% per year for the first 25 years and 0.5% per year for the following 30 years. This results in a 40% total reduction of water use over the 55 year period of 2005 through 2060. This is an achievable goal that far surpasses the 25% that the State of Utah has estimated. In 1993, the Utah Board of Water Resources water plan also determined that 1% water conservation per year was achievable.

The 25% goal by 2050 doesn’t compare with what other Utah counties are already doing. While it is understood Southern Utah is hotter and dryer than the cities evaluated in the Salt Lake area. Numerous water providers throughout the state have also adopted the states goal of 25% by 2050, yet many have nearly attained those savings today. They include:

- The Jordan Valley Water Conservancy District provides water to the cities of West Jordan, South Jordan, Sandy, Midvale, Riverton and South Salt Lake as well as numerous irrigation districts. They committed to reduce use by 25% from 2000 levels by 2025.<sup>1</sup> As of 2004, the Jordan Valley Water Conservancy District already had seen a 20% reduction, lowering their per capita water use from 250 to 207 gpcd in only four years.<sup>2</sup>
- “Data compiled by the Division of Water Resources indicate daily per capita water consumption in Salt Lake City dropped from 250 gallons to 208 gallons, a decrease of

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<sup>1</sup> Jordan Valley Water Conservancy District, *2004-2005 Summary of Operations*, p. 49.

<sup>2</sup> *Id.*

17%. Similarly, daily per capita water consumptions in the Logan area dropped from 248 gallons in 1998 to 200 gallons in 2003, a decrease of 19%. The Ogden-Clearfield area is also experiencing a drop in water use, with daily per capita consumption dropping from 189 gallons to 153 gallons from 2001 to 2003.”<sup>3</sup>

- Salt Lake City’s LEED Program aims for Sustainable Urban Growth. As an exemplar western city poised on the edge of a desert, Salt Lake City can lead the way in sustainable urban growth by utilizing water resources wisely, both indoors and outdoors, to promote a healthy, sustainable ecosystem and economy. Salt Lake City has established ambitious water efficiency and pollution prevention goals including: Reduce per capita water use from 2000 yr levels (232 gpcd) by 25% by the year 2010 (188 gpcd) while reducing energy demands and pollution and, concurrently, promoting biodiversity. In this way, Salt Lake City hopes to reduce the need for additional water supplies to accommodate growth in the region.<sup>4</sup>
- The Utah State Intuitional Trust Lands (SITLA) is one of the largest developers of mixed use communities in the County. Coral Canyon and Sienna Hills residential communities, both of which use much less water than the county average, were developed by SITLA. These communities could be used to demonstrate achievable water conservation savings. Sienna Hills development has smaller lots, mandates open spaces, natural vegetation, limits the amount of lawns, requires drought tolerant plants, and limits the amount of land that can be landscaped. These measures should be used as a benchmark for local developers. In addition, SITLA will develop 10,000 acres called the south block which is state land south of St. George. Data from a smart growth initiative for the south block was considered in the *Southern Corridor Highway EIS* (p. 6-1).<sup>5</sup> Consequently, the County’s water demand per home will be greatly reduced in the future.

The aforementioned water conservation standards are becoming easier to achieve with the decrease in lot sizes. In Washington County, the median lot sizes have decreased from 10,000 square feet in 1990 to about 8,500 square feet in 2005.<sup>6</sup> In St George the average is seven homes per acre.<sup>7</sup> The smaller lots use less water; the trend toward smaller lot sizes should also be considered in the analysis of future water demand.

CDF believes that the public supports stricter conservation and enforcement measures in Washington County. Recent polls that show this support include the following:

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<sup>3</sup> University of Utah, “Water Use and Residential Rate Structures in the Intermountain West .” *Utah Economic and Business Review* (March/April 2005).

<sup>4</sup> “Salt Lake City LEED Program Aims for Sustainable Urban Growth.” *Water Wiser Newsletter* (Oct. 2004). Available at: <http://www.awwa.org/waterwiser/watch/index.cfm?ArticleID=365&navItemNumber=3348>.

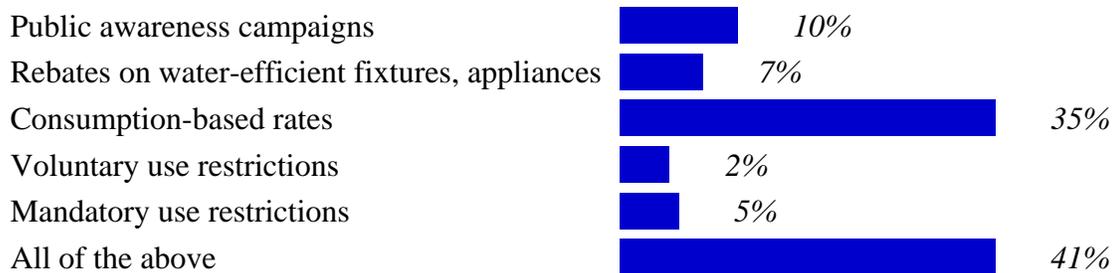
<sup>5</sup> Utah Dept. of Transportation, *Southern Corridor Highway Environmental Impact Statement* (Oct. 2005). (p.6-1) Available at <http://www.udot.utah.gov/sc/>.

<sup>6</sup> Washington County, *2035 Housing Study* (2007), p. IV -2. [www.visiondixie.org](http://www.visiondixie.org)

<sup>7</sup> UDOT, *Southern Corridor EIS, supra*, Chapter 6.

- The District hired VanGuard Media in 2008 to do a survey to gage public opinion on the Lake Powell Pipeline and found high favorability for water conservation and a preference for tiered pricing.
- Vision Dixie principals are being adopted by all the communities in the county. The District should also adopt the Principals. Principal 2 is to conserve water which was a high priority in Vision Dixie public polling survey results. The Vision Dixie Principal states *“we all need to take actions to use less water. Water conservation can have a positive impact on economic development. There are many businesses and individuals that will be attracted to this area because we are managing our resources wisely”*<sup>8</sup>.
- “Conservation pricing is an important component of any effective demand management program and should be utilized in any community that is seeking new sources of water. In fact, in a recent poll by the American Water Works Association, responders stated that conservation oriented rates, or consumption-based rates, were the best individual mechanism to get customers to use less water.”<sup>9</sup>

**Results of AWWA Quick Poll**<sup>10</sup>



The municipalities that have the most effective conservation oriented rates, i.e. structures that clearly communicate the more you use the more it will cost per unit, are the communities who provide an initial block of water at a low and affordable rate, but increase rates noticeably from one block to the next.

<sup>8</sup> Vision Dixie, *2035 Land Use & Transportation Vision* (2007), p.14, 25 at [www.visiondixie.org](http://www.visiondixie.org).

<sup>9</sup> American Water Works Association, “Results of Survey: What’s the best way to get customers to use less water” Available at <http://www.awwa.org/QuickPollResults.cfm?itemnumber=1663>.

<sup>10</sup> *Id.*

## Vision Dixie Principals

The District participated in and supported the Vision Dixie Principals. One of those principals is to conserve water. The Vision Dixie Report reads, “*we all need to take actions to use less water. Water conservation is important today and will be critical in the future to keep living costs low, enable economic growth, and keep water in streams and rivers for people and wildlife. Employing conservation measure such as xeriscaping can help reduce water usage.*” The Vision Dixie Principals also state, “*Direct Growth Inward*”. CDF suggests the District’s regional pipeline should not encourage sprawl developments by providing water to remote areas. Over the long term, sprawl development costs everyone more money in power for pumping, infrastructure and transportation costs.

The Plan should include the discussion on piping low grade irrigation water for outside landscaping use and save the culinary water for inside home use. We support St. George City considering the requirement that new residential developments lay pipes to use untreated water for landscaping. It does not make economic sense to water landscapes with expensive, treated, culinary water. However, CDF does not support the escape clause that allows developers to bypass this requirement if a facility isn’t brought online within five years. Given the state of today’s economy it’s not likely that much of anything will happen within a five year window of the development. This loop hole should be eliminated given current realities. It is anticipated that passage of this ordinance will be delayed due to resistance from local builders. The District should take advantage of this delay and advocate for dual use systems. The City of Hurricane and Ivins already have these dual systems. The City of St. George is investigating using 15,000 Acre Feet a year of Virgin River agricultural water rights to be treated for secondary use. Implementing this secondary water system could approximately double the capacity of the current culinary water system. Adopting projects that save culinary water are feasible and necessary improvements to the proposed plan.

## Over Estimating Water Demand

In 2008, Albuquerque used only 100,000 acre feet for 540,000 people with 167 gals per person per day and used a water Level of Service of .25 acre foot per home to estimate water demand. In general, Las Vegas and Colorado estimate 2 homes per acre foot of water for water demand forecasting. But, in 2006, Washington County used a much higher estimate of 45,000 acre feet to service only 111,000 people at 340 gals per person per day and used .89 acre foot for water Level of Service per home. This overstated water forecasting demand grossly over estimates the need for water from the Lake Powell Pipeline. The policy needs to be changed to the actual water used in Washington County homes which is significantly less. Reduction of the State of Utah’s Level of Service policy of .89 AF to .45 AF per home for inside and outside water use would cut water demand for the Lake Powell Pipeline in half. The District mentions .89 ac ft per is a requirement for forecasting water demand. However, in our research CDF has found this to be incorrect.

	Water Use	People Served	Gals Per Person	Level of Service (per home)
Albuquerque <sup>1</sup>	100,000 ac ft 2008	540,000	167 gals	.25 ac ft
Washington county <sup>2</sup>	45,000 ac ft 2005	111,000	340 gals	.89 ac ft

1. Data taken from the town’s website
2. Data taken from the District’s 2006 Capital Facilities Plan

The Utah Division of Drinking Water (Division) has an 800 gallons per person per day (gpcd) requirement per residential unit for just indoor use. This high rate is allocated for peak use and drought. This allocation has pitfalls because it doesn’t allow for the long term benefits of water conservation to reduce water demand forecasting. Based on these assumptions, communities have to build excess (redundant) water supply simply to facilitate cutbacks during drought. This is highly uneconomical and misleading to ratepayers. The Division indicates that the 800 gpd is an *estimate*, “in the absence of firm water use data.” R309-510-4; R309-510-7(2). Therefore, if available water data supports a reduced water use rate for indoor use, this “actual level of service” could be reduced and the amount of water required for future growth would be significantly lower.

The state rule on drinking water systems, R309-510-6 (Water Conservation), provides as follows:

“This rule is based upon typical current water consumption patterns in the State of Utah. They may be excessive in certain settings where legally enforceable water conservation measures exist. In these cases the requirements made in this section may be reduced on a case-by-case basis by the Executive Secretary.

Drinking water systems are encouraged to use the water resources of the state wisely. Conservation measures such as low flow toilets and low water demand landscaping (xeriscaping) may significantly reduce the demands on water systems.”<sup>11</sup>

Consistent with this rule, the District should verify that .89 AF of water is indeed “typical water consumption,” and provide detailed information on how this estimate was derived. CDF has found an average home uses about 10,000 gallons per month for both inside and outside watering, or approximately .45 Acre Feet per year. Actual retail water sales should be collected to accurately assess the need for future water demand.

### Private Water Rights

A discussion of the existing private rights should also be in your Plan. A thorough study of all water supplies must include all private water rights as part of the analysis of the need for water and the Lake Powell Pipeline. The District and State predict no private underground or surface water rights will convert to culinary use by 2060. CDF believes at least some of these rights would be available for future

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<sup>11</sup> R309-510-6, available at [http://www.drinkingwater.utah.gov/documents/rules\\_ddw\\_version/R309-510\\_3-8-06.htm](http://www.drinkingwater.utah.gov/documents/rules_ddw_version/R309-510_3-8-06.htm)

water supply and should be not ignored. In addition, the District only estimates it could develop about 110,000 acre feet annually by the 2060. However, in our research there are water rights that could be converted to culinary use in the future that the District is unwilling to count as possible future water supply. The Division of Water Rights stated "there are 332,760 acre feet of approved water rights in the Navajo/Kayenta and upper Ash Creek aquifers."<sup>12</sup> The community water supply systems coming from Navajo Sandstone wells and springs were only 41,470 <sup>13</sup> acre-feet (AF) which represent a small percentage of that. In addition, in Washington County, there are 969,488 <sup>14</sup>AF of surface water rights, with only 40,198 AF of surface water supplies in public community systems. If this is the case, the State over allocated water rights in our region. If so, the District should disclose this problem to the public so that they are informed that their private water rights are not valid and therefore, their property value is much lower.

### Specific Comments on the Plan include:

1. Page 2, The Plan states, "This recent revision of the Plan has implemented the recommendation from an evaluation completed in 2010 by Maddaus Water Management." However, the Plan still contains old population estimates. Using old data in the Plan doesn't give the public a realistic view of future water demand.
2. Page 5, Region Water Supply Agreement. While you infer the RWSA agreement imposes stipulations in a Landscape Ordinance, CDF found none of the larger cities have an ordinance of this type that imposes water efficient standards. This is an opportunity for the District to require the cities and towns to adopt the District's Model Landscape Ordinance when they renew or revise contracts to purchase water.
3. Page 6, Table 1. The table should be listed as the District's Water Supply. Because, available water in cities and towns and private water rights are not included.
4. Page 15, Table 2. Population Projections should be deleted. CDF is concerned the District is using outdated information to base their decisions on the need for the Lake Powell Pipeline. At this year's Economic Summit it was estimated the future annual growth rate would be around 2.50%. The District use of high multiples of over 5% for the next 20 years distorts the real picture of future water demand. In 2009, Washington County had a growth rate of only 1%.
5. Page 16. In Table 3, adding 52.3 (gpcd) for future secondary water use conflicts with earlier UDWR water use reports that reveal secondary use has not increased although population growth has doubled. The 2005 level of secondary water use of 7,445.5<sup>15</sup> acre feet in the Water Needs Assessment has actually gone down over the years. This information indicates secondary water does not increase with population growth. Thus, it is not justified to add 52 gpcd of secondary

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<sup>12</sup> Washington County Water Conservancy District (WCWCD), *Petition for classification of the Navajo/Kayenta and Upper Ash creek aquifers (July 2005)*.

<sup>13</sup> Division of Water Resources, *Municipal and Industrial Water Supply and Uses in the Kanab Creek/Virgin River Basin (2008)*. p. 38, Table 13

<sup>14</sup> Washington County Water Conservancy District, *Virgin River Management Plan 1999*

<sup>15</sup> UDWR 2008 report, p. 42, Table 17.

use (per day) for 50 years. Doing so distorts the future need for water.<sup>16</sup> Secondary use is also seasonal, and not used 365 days a year. The District diverts Hurricane, La Verkin and St. George Canal Company irrigation water to its reservoirs in the winter and secondary water is turned off in the winter.

6. Page 29. W4. CDF is encouraged by this program to require new developments to include xeriscaping. This program should be linked to a larger vision that would require the cities to adopt the same program in any revision of their contracts approved by the District.
7. Page 30. W21. CDF is not sure why the District should wait to 2030 to start to provide annual awards for green building. We recommend it starts now.
8. Page 31. W32. CDF encourages the District not to wait until 2020 to provide a rebate to install artificial grass in sports fields. We recommend it starts now.
9. Page 31. W36. CDF is not sure why the District is waiting until 2025 to prohibit waste of water in new project designs. We recommend it starts now.

The District has already identified many effective water conservation practices in the Plan. We applaud the District's Future Water Conservation Programs in Chapter 4. In addition to these programs, the District could also improve its water efficiency by making some of these recommendations requirements when cities buy water from the District and implementing the following recommendations.

#### **Recommendations:**

- Include amount of gallons of water used on home and commercial utility bills. This will prevent over watering by giving homeowners some idea on how much water they are actually using.
- Adopt the Vision Dixie Principals
- Adopt a water conservation goal of 1% a year.
- The District should lead the way of standardizing the way cities and towns account for their water use. Everyone does it differently. When the District sells a city water, they should agree to a standard way of accounting for water use. Currently, the problem lies with how to account for unmetered water. Most cities just add their irrigation shares to total water use which distorts actual water use.
- Require cities use a block rate schedule that sends a price signal to conserve water. The more water you use the higher price you pay. A plan similar to Hurricane City would be appropriate. Use pricing to reduce water demand which is more cost-effective than implementing a non-price conservation program.
- Prohibit Home Owners Associations covenants, conditions and restrictions (CC&Rs) from requiring grass and water-intensive landscaping or prohibiting water-wise landscaping.
- Limit the planting of grass and recommend water-wise turf-grass alternatives.

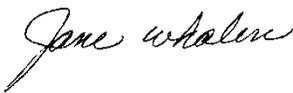
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<sup>16</sup> See Lake Powell Pipeline Study, Water Needs Assessment, Phase 1 Report, Final Draft (Aug. 2008) (WNA), p. 3-12, Table 3-10, available at <http://www.water.utah.gov/lakepowellpipeline/projectupdates/default.asp>

- Encourage landscape design to take advantage of storm water runoff off buildings.
- Educate the public and businesses about the new legislation that allows residents to collect rainwater for outside watering of landscapes.
- Require developers, homeowners and commercial businesses to use certified WaterSense products such as: Landscape irrigation services, weather-or sensor-based irrigation control technologies, faucets, toilets and showerheads.
- Emphasize the importance of using xeriscape and native plants.
- Update city building codes with plumbing and appliance standards as a requirement to renew water contracts with cities.
- Invest in water infrastructure efficiency.
- Implement smarter land use planning by incorporating Vision Dixie principles. Vision Dixie principles could reduce water demand. The way that we use land (the types of use and the level of intensity) relates directly to water use, water supply, and water quality. By better understanding land use changes, we will use less water and could plan to accommodate future changes more successfully.

In conclusion, CDF understands the great challenges of providing water to everyone. We appreciate all the progressive water conservation programs you have identified in the Plan. It is crucial that the District gains cooperation from the cities in their water conservation efforts. CDF hopes the District will take these suggestions into consideration when finalizing the Plan. Any future modifications to Plan should recognize the natural beauty of southern Utah and seek to preserve and enhance native conditions to the maximum extent practicable. Efficient use of our limited water resources is imperative for the future sustainability of county.

Sincerely,



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