



STEVE ADLER FOR AUSTIN MAYOR

WATER RESOURCES FOR THE FUTURE

September 22, 2014

“The protection and sustainability of clean water is crucial to our future. Simply put, without water we do not survive. Acquiring new water supplies would be very expensive so we must do all we can to protect the water we already have. We must avoid spending a billion dollars on a large capital expense to buy water supply in Lee and Bastrop Counties (and an associated conveyance system to bring the water here). The current Council has made bad capital choices in the past that have led to unnecessary increases in our utility bills, such as the \$2.2 billion “wood burning” biomass energy plant contract and Water Treatment Plant 4, both of which provide capacity we do not need. We must think long term and in new ways, and we must do that now.” --Steve Adler

As Mayor, I will support the following programs and policies:

- **Advance Aggressive and Innovative Methods of Water Conservation**
- **Dramatically Increase Water Reuse Programs and Clarify Reuse Ordinances**
- **Adopt New Decentralized Models in Water Management**
- **Plan Pro-Actively to Evolve Our Water Utility’s Business Model Adapting to Future Conditions**

I have been advocating these policies since the January, 2014, beginning of my campaign. I was pleased to see that many of these ideas were similarly recommended in the Water Resource Planning Task Force report in July. As Mayor I will work vigorously to see they are implemented through the following actions:

I will:

1. **Build** upon the recent Task Force report to develop and implement a comprehensive and integrated water resource management plan for Austin.
2. **Consult with and inform** Austin communities about effective responses to Central Texas’ historic drought.
3. **Lead** the review and amendment of City ordinances dealing with water reuse.
4. **Energize the technology sector** to join with the City in seeking innovative ways for water consumers to monitor and conserve their water use.
5. **Begin working immediately** with the City and water users to mitigate disruptive consequences of the Lower Colorado River Authority’s (LCRA) potential declaration of “Drought Worse than the Drought of Record”.
6. **Provide the leadership** to move towards a water utility business model that is sustainable into the foreseeable future.

The Challenges:

Austinites express great concern about our water supply but less so after a couple of rainy weekends. Talk of an impending crisis can wash away. I understand this. But the fact is that Austin and Central Texas are experiencing an extreme drought that in about five months may well be declared the worst drought on record.¹ Even though we know that drought regularly recurs in Central Texas, no one knows when this one will end. And while this region is becoming drier, our demand for water is increasing steadily.^{2,3,4} It's clear that our long-term stability as a thriving city is in jeopardy.

We have done well in recent years to become greener in how we generate and use energy, construct buildings, perform waste management and recycle. However, I share the deep concern of many of my fellow Austinites when it comes to our water supply. As the fastest growing city in the nation with a projected population of nearly four million in 25 years, we cannot sustain this growth if current water demands continue to exceed our limited supply.⁵ **(For more info on the drought crisis, see Annex 1.)** While there are far fewer farmers or ranchers than during the record drought in the 1950s, the city's population has increased nearly seven fold from the 1950 population to more than 865,000 in 2014.^{6,7} When we look with a vague sense of security at Lake Austin and Lady Bird Lake, which are maintained as constant-level lakes, we must also be aware that water inflows from watersheds further upstream are as low as in the drought years of 2011 or 2013, and lower than during the drought of record. We simply cannot continue to grow and use water as we have in the past. If we do, our lakes could effectively go dry in as soon as the next few years. The situation is dire and we cannot wait any longer to implement effective solutions.

Without substantial and sustained rainfall in the next few months, the LCRA will issue a "Drought Worse than the Drought of Record" declaration. In order to reach this designation, the Highland Lakes must reach 600,000 acre feet ("AF") or below. Note that in mid September the level was 690,000 AF after seeing a 55,000 AF drop just in the month of August.⁸ Such a declaration would mean that under Texas Commission on Environmental Quality (TCEQ) and LCRA water management rules, water will be cut off to interruptible customers, no new water contracts will be issued, and a full 20 percent reduction in water supply will be imposed on firm yield customers, including Austin.⁹

I believe that the drought and the ensuing water shortage is one of the most pressing environmental challenges we face as a city. As Central Texas continues through this period of extreme drought, I plan to make sustainable water resource management a centerpiece of my administration.

Solutions:

We need to make smarter and longer term plans for the development and management of our water assets. We can no longer just assume that our water needs will be met by relying on a contract with the LCRA that puts us at the front of the customer line. If the lakes are dry, being first in line will mean nothing. We have to implement more aggressive conservation initiatives and more extensive water reuse measures at levels that go beyond our current programs. And we must begin immediately.

Recently, in July 2014, the Austin Water Resource Planning Task Force produced its report for the Mayor and City Council. I have carefully reviewed this report, spoken to many of its authors and consulted closely with many longtime experts in the field of water management. I support many of these recommendations. I would like to see most of the Task Force's recommended actions fully endorsed by our City government.

In order to fully implement these proposals and incorporate their financing into our budget going forward, it is absolutely imperative that a long term comprehensive water management program for Greater Austin be produced.

With water resource management, as with so many other issues, our City must be less siloed in its public policy and engagement with surrounding areas. Austin can no longer afford to stand by and let other entities, whether the LCRA or the State of Texas, dictate to us how our resources should be used. This is underscored

by the LCRA's 2011 decision to release 465,000 acre feet from the Highland Lakes for irrigation of rice fields downstream — enough water to supply Austin for three years — and charging the growers pennies on the dollar compared to what we pay. This has exacerbated our crisis today.¹⁰

As Mayor, I will lead a concerted effort to implement the following programs and policies:

- **Advance Aggressive and Innovative Methods of Water Conservation**
- **Dramatically Increase Water Reuse Programs and Clarify Reuse Ordinances**
- **Adopt New Decentralized Models in Water Management**
- **Plan Pro-Actively to Evolve Our Water Utility's Business Model Adapting to Future Conditions**

ADVANCE AGGRESSIVE AND INNOVATIVE WATER CONSERVATION

Austin has done a great job in conserving water. As shown in the graph below, our total usage in gallons per capita per day (GPCD) stands at 140, which is far better than the average GPCD of 163 just four years ago.^{11,12} Despite this success, we can and must do even better in conserving water. The development of a sophisticated water demand and utilization model will help us set appropriate targets for various consumers of water resources

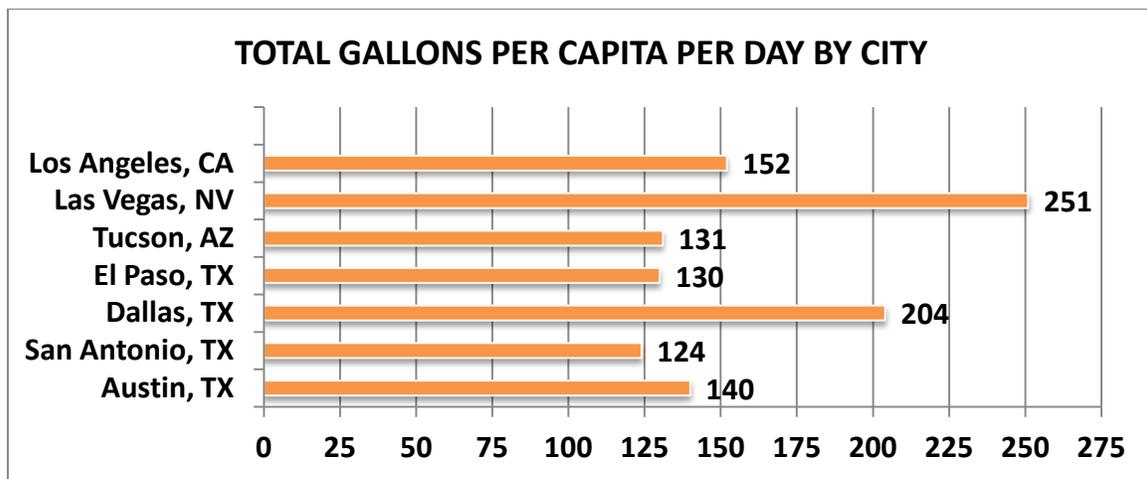


Chart Data: ^{13,14,15,16,17,18}

According to the Water Resource Planning Task Force report,

“saving water, or reducing demand, is widely recognized as the most reliable, affordable, and sustainable way to meet water demands. Building a water-efficient economy should take priority over developing supplies that can be expensive, capital and energy-intensive, and environmentally harmful. Conservation and reuse should be a higher priority to meet Austin’s water demands than investing in new water supplies from areas outside of Austin.”¹⁹

I firmly endorse this recommendation.

Fortunately, we do not need to reinvent the wheel for Austin’s water resource plan. Although our own water resource plan must be tailored to Austin’s particular situation and requirements, we can look to recognized national leaders in water conservation for guidance in what works and what doesn’t. Like San Antonio, we must learn to view water that has been conserved as increased capacity in our overall water supply.²⁰

Austin is recognized as a world-class city and a center of technical innovation, and we should take advantage of our technological and intellectual resources in a quest to become a national leader in water efficiency,

emphasizing innovative tools for water conservation. A great place to start is with implementation of an advanced metering infrastructure, which allows water meters to be read remotely and accessed locally. These so-called “smart water meters” promote water conservation through real-time data management. A web portal would allow customers to access their accounts to monitor their consumption history and current usage. The system can also provide user-friendly apps available on cell phones and tablets to teach and inform consumers about their water use, conservation and utility costs.

Simply being able to track a property’s water usage in real-time — and compare it non-specifically to neighborhoods and categories of peer users — will help customers recognize habits and cut back as they see how it is tied into their billing. This technological approach would also include smart irrigation controllers, which automatically shut off in-ground irrigation systems when it is raining or when soil moisture is adequate.

A significant loss of water and therefore excessive usage comes from household leaks. Even a relatively slow leak of 20 drops per minute can result in over 1,000 gallons of water wasted per year. Studies have shown that, in an average household, leaks account for more than 10,000 gallons a year, typically from worn toilet flappers, dripping faucets and other leaking valves.²¹ Assuming this estimate is applicable to Austin, residential leaks alone would account for over 3.3 billion gallons of water lost per year, not counting losses at commercial properties.²² Though this figure may seem high, a similar study for Houston in 2013 reported that leaks accounted for 22.4 billion gallons, or 15.2 percent of its total water supply.²³ Smart meter technology would help identify the existence of leaks and could send instant alerts to both the customer and the utility so that repairs could be made. Some cities, such as San Antonio, provide free water-efficient fixtures and guidance to customers about repairing water leaks.²⁴

As noted, Austin has been doing a great job in hitting our previous conservation goals. We must continue these efforts to educate the public about appropriate and realistic targets and to incorporate additional best practices like those employed in San Antonio, Tucson, Arizona, and other conservation-focused cities.^{25,26} As part of its integrated water resource plan, Austin also needs to make more progress in other areas of water use, as discussed below.

Many Austinites feel betrayed when they discover that their successful efforts at conservation have not resulted in the decrease they had anticipated in their water utility bills. We need to be very honest and transparent with rate payers. High capital and other fixed costs do not decrease with conservation, they are amortized and recovered over the sale of fewer gallons. I believe that Austinites will participate in greater conservation if they understand that doing so enables the water we have to last longer and gives mother nature more time and a greater chance to replenish the Highland Lakes.

DRAMATICALLY INCREASE WATER REUSE PROGRAMS AND CLARIFY REUSE ORDINANCES

A water resource management approach with great potential for immediate improvement in Austin is water reuse, and we must focus on this immediately. San Antonio presently reuses about 35 percent of its treated wastewater – and has the capacity to reuse up to 60 percent. San Antonio maintains the largest direct recycled water system in the country.^{27,28} This drought-resistant source of water is a sizable component of San Antonio’s overall water supply. Here in Austin, by comparison, we reuse roughly six percent of our treated wastewater.^{29,30} This has to improve.

Other major cities throughout the Southwest, as well as the United States military, have recognized the impending threat of ongoing climate change and drought and have implemented aggressive water reuse programs.³¹ The effects of drought are slow moving, but once conditions deteriorate sufficiently it will be too late for the most ideal solutions. Available alternative solutions will become increasingly expensive. Action must take place now. For this reason I am proposing a major overhaul of our water recycling program to dramatically increase the overall percentage of reuse of treated effluent. This must be a key component of our

long-range, integrated water resource management plan, with the associated capital and infrastructure requirements identified and budgeted.

One specific opportunity is to increase the reuse of treated effluent – rather than using drinking water – for irrigation of public parks and other large landscaped areas, as well as for air conditioning chillers for government and office complex cooling towers. These are underutilized potential assets in our water supply portfolio that are both feasible and cost effective. But they have been hampered by Austin’s ordinances that restrict such reuse.

We already have a good basic water distribution system that we cannot fully employ for reuse due to City ordinances that require new “purple pipes” to be laid in the ground instead of using existing white-colored piping. In many instances this requirement would mean very expensive changes in infrastructure; it is certainly costly in terms of missed opportunities for realizing the benefits of water reuse. In 2013, the City of Austin announced that it had laid about 50 miles of purple pipe at a cost of \$66 million. According to the City’s 25-year plan, a total of 168 miles must be laid along with pumps, tanks and lift stations, at a projected cost of \$220 million.³² This fully built-out reclaimed water system will be able to recycle an estimated 29,000 acre-feet a year.³³ It is encouraging to see these goals for increased water reuse already in place. But I share the sentiment of many leading conservation advocates that we should not have to wait 25 years for this system to come online fully.

The City has been slow to get these kinds of restrictive ordinances modified despite repeated requests. Recently there has been progress on this issue but if the delay continues, I will lead as Mayor the charge to promptly complete the amendment of these restrictive ordinances.

An expanded water reuse program must of course be planned and monitored to protect public health and the environment. Oversight and regulation of plumbing practices will be necessary to ensure that cross-connection does not occur; environmental protections in aquifer recharge zones must not be jeopardized by land application of treated effluent. This is in line with the City of Austin Watershed Department’s recommendations that sufficient buffers be maintained around surface water and recharge features when using recycled water for irrigation.³⁴ Ongoing infrastructure developments for designated recycled water piping should continue, but future access to water reuse infrastructure must be encouraged and supported.

ADOPT NEW DECENTRALIZED MODELS IN WATER MANAGEMENT

Decentralization of treatment sites, as recommended by the Water Resource Planning Task Force, would allow new developments to reuse storm water and treated wastewater where they are produced. This would reduce reliance on already overloaded centralized treatment and distribution systems and permit a more cost-efficient expansion of the water utility infrastructure. A decentralized approach would also encourage water-saving measures in new homes, such as xeriscaping, (landscaping and gardening that reduces the need for supplemental water), rainwater collection and low-flow fixtures.³⁵

A full retrofit of existing developments may be too costly, but requirements for new developments are far more manageable and better suited to the goal of long-term sustainability. Reuse systems can be installed on individual dwellings and industrial and commercial buildings. They can also be designed to serve entire communities where water can be treated to levels fully protective of public health and the environment.³⁶ I support the Task Force’s recommendations on this course of action.

PLAN PRO-ACTIVELY TO EVOLVE OUR WATER UTILITY'S BUSINESS MODEL ADAPTING TO FUTURE CONDITIONS

Our water utility's business model is dependent on selling more and more water. But our City's values move us to conserve and re-use and thus sell less of that same commodity. Overtime, this conflict will become increasingly pronounced. As revenue goes down, there will be fewer opportunities to cover large capital expenditures for facilities with anticipated future greater revenues. Already, our water utility's debt to revenue ratio may be below industry standards for highly secure utilities. We need a business plan that seeks to avoid such expenses or at least to minimize them to the fullest extent possible. We need a business model that reflects future trends and realities more than historical patterns.

CONCLUSION

Austin's growth is not going to slow down any time soon. The fact that we have been in a severe drought for the past few years seems not to have deterred a steady influx of people and investment from around Texas and the rest of the country. Even if a new drought of record is declared early next year, it still may not significantly affect our rate of growth. As long as Austin is so beautiful and the home of the University of Texas and the State Capitol, people will find their way to our city.

But at some point in the future, it is quite possible that without a sufficient and secure water supply, new residents and, indeed, our children and grandchildren might no longer be able to live and prosper in Austin. Water rates would skyrocket as new capital intensive water supply projects are required. Our quality of life would decline. Many of the things we love about living in Austin today will slip away. The bright vision of Austin as one of the world's great international cities will have dimmed. This is a price we do not want to pay.

Our City Council leadership has largely deferred water resource planning to the LCRA in recent years, believing that we have a water right contract that will supply us with every drop we need. This is a dangerously shortsighted policy. Although it is correct that we are in the front of the priority line for water from the Highland Lakes, this contract means nothing if the lakes run dry. And, as we have witnessed recently, the LCRA's allocation and pricing decisions have not always put Austin's interests first. While the LCRA is engaged in securing additional water supplies beyond the lakes, we need to take immediate and aggressive action on our own to ensure future prosperity and stability for Austin.

Austin has done a credible job in recent years of conserving water following the start of our current, multi-year drought. However, we must expand our conservation programs and implement a more diverse and integrated approach to water resource use. This includes rainwater harvesting, rebates for the use of residential and commercial fixtures, incentives for conservation, and the installation of smart meter technology for better customer water use awareness and leak prevention.

The Water Resources Planning Task Force has provided a very good set of recommendations. I support much of the work they have done and as Mayor I will seek to implement their proposals for both supply and demand management. I also believe that substantial expansion of water reuse is necessary and must be incorporated into our water supply portfolio. Other cities are ahead of us in adopting such practices. Existing technology and innovative best practices have proven highly successful and I support their implementation here. We have probably entered a period of prolonged water scarcity because of this record drought, compounded by climate change. We will need leadership that can turn complex plans into action to confront our biggest challenges. And we will need to educate and inform our citizens and communities about the difficult behavioral and water resource choices we need to make through aggressive water resource management programs and policies. As Mayor, I will bring that leadership.

ANNEX 1

AUSTIN'S DROUGHT CRISIS

We have been here before. In 1947 the rain stopped. By 1950, a drought was declared lasting for another seven years ultimately costing \$22 billion in losses in today's dollars. This period in time has since been deemed the "drought of record." People experienced fundamental changes to virtually every aspect of life in Texas. Nearly 30 percent of employed Texans at the time were in farming and ranching trades; now it is less than three percent. Livelihoods were destroyed as crops and grazing lands dried up. Ghost towns were left throughout the rural lands as people began a massive trend towards urbanization. Billions of dollars were put into the construction of 69 dams and a network of 126 major reservoirs.^{37,38} A great deal of action was taken after that major natural disaster.

State law delegates the management of surface water resources in our region to TCEQ and the LCRA. The water management plans adopted by these agencies contain important provisions that will change if and when a "new drought of record" is declared. In order to reach a new drought of record, there are three trigger points that must be met. First, there must be 24 consecutive months during which Lakes Travis and Buchanan are less than full. Second, inflows from tributaries to these lakes must be below the 1950 drought of record level. Third, there must be less than 600,000 acre feet (AF) of combined storage in Lake Travis and Lake Buchanan (one acre foot is equal to 325,851 gallons).³⁹

- **Trigger 1 - 24 consecutive months of lakes less than full:** Lakes Travis and Buchanan have not been full since 2005.⁴⁰
- **Trigger 2 - Inflows lower than 1950:** The 1950 inflow into the lakes was 501,926 acre feet. However, the lowest inflow in recorded history was in 2011 with 127,802 acre feet and the past five years have been the lowest of any five-year period. Total 2013 inflow was 216,353 acre feet and we are on course to be even lower in 2014.⁴¹
- **Trigger 3 – Drop below 600,000 acre feet:** As of mid-September the Highland Lakes were at 689,802 AF and continue to drop. The LCRA is now projecting that the combined storage will drop below 600,000 acre feet by December 2014.⁴²

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