



April 8, 2016

Jeff Walker
Deputy Executive Director
Texas Water Development Board
P.O. Box 13231
Austin Texas

via email: RulesComments@twdb.texas.gov

Re: Comments on 2016 Planning Rulemaking

Dear Mr. Walker:

Thank you for the opportunity to present these comments on the development of revisions to TWDB rules in Chapters 357 and 358 for the state and regional water planning process.

In May 2014, the Texas Center for Policy Studies issued its report, "Learning from the Drought, Next Generation Water Planning for Texas."¹ The report looked at the 2012 water planning process but also included evaluations of the initial work for the 2017 plan. Many of the problems identified in the report for the 2012 plan are continued in the 2017 plans.

For example, the projections for the water demands for cooling steam electric power generation (SEPG) in Texas remained the same from 2007, to 2012 and now 2017. Yet well before 2012, there were significant changes in the make-up of electric power generation in Texas. There were new technologies for air cooling or limited water cooling for gas fired plants. There were announced closures and reductions in production at a number of old plants. There were announcements that new plants were being abandoned. Still the planning process was not required to address these changes.

Chapter 5 of the report included recommendations for improving Texas' water planning process, with the goal of ensuring affordable, sustainable water for people *and* healthy rivers and bays. Those recommendations are discussed below.

¹ Available at www.texascenter.org. This report was made possible by grants from the Cynthia and George Mitchell Foundation and the Meadows Foundation

A. Reducing the demand/supply gap

The analysis in Chapter 2 (demand) and Chapter 4 (supply) of the 2012 plan presented a number of examples that show that the 2060 demand/supply gap of 8.3 million acre-feet/year projected by the 2012 State Water Plan is greatly overstated. The 2017 plan shows the same problem, with an even bigger gap, 8.9 million acre-feet per year.

On the demand side, Chapter 2 of the report provided several examples of how the plan overstates how much water Texas will need. The overstatements continued in the 2017 plan. The report then provided a few examples of where projected demands could be reduced significantly, including

- 1) requiring much more reasonable municipal demand and conservation projections in Region C. Region C and other regions do not use the same goal, the goal in state law, of planning to meet the water needs during the drought of record. Their arbitrary or higher goal drives up the total statewide demands with no justification for such effects. Moreover, Region C and all other regions should be required to set goals for per capita consumption that are reasonable, but still drive conservation.
- (2) more reasonable irrigation demand projections in Region O, ones that are actually achievable, not a wish list of what the Region would like if it had inexhaustible supplies of water; and
- (3) more reasonable demand projections for steam electric power generation statewide, projections that could even show more water now reserved than needed in the future.

Recommendations on Demand Reductions: These problems can be fixed with simple rule changes and even enforcement of existing rules.

For example, the “additional margin of safety” in the Region C plan needs to be eliminated or defined specifically. There are new droughts of record that need to be addressed, but that does not require a change in the planning goal. The goal for planning can still be the drought of record.

TWDB rules should not allow any other planning goal, without a legislative change. If TWDB does propose any different approach it should only be with the requirements that, if regional planning group that believes a greater need should be projected than what is required to meet the drought of record, the group should be required to justify the increase based on a specific set of criteria in TWDB rules and any change should only be approved by the Board. TWDB rules should require that regional plans are consistent across the state, not a mix of plans that do not provide for a meaningful state plan.

The problems with over projections for agriculture and steam electric power generation can also be fixed easily by requiring regional planning groups to show that the demand projections fall within the realm of possible supplies and by requiring an analysis, not simply showing that the demand was included in a prior regional plan. *TWDB rules should* require projections of all future demands to be shown as likely, not just what a region would like to have.

On the supply side, Chapter 4 of the report showed examples of how available supplies could be greatly extended or increased by:

(1) reasonable drought contingency plan implementation. The experience during the droughts of 2010 and 2011 showed that the demands during droughts could be cut significantly, greatly reducing the peak water demands that only occur rarely, but drive the planning process.

(2) increased use of brackish water and other steps to use existing supplies.

Recommendations on Supply Management: Again, proper TWDB rules can assure supplies better match demands, without relying on new reservoirs or taking more water out of rivers and streams to the detriment of the environment and local recreational uses that often provide the economic base for many rural communities.

TWDB rules should require stricter deadlines on implementation of drought contingency plans and on the revision of such plans to include appropriate aspects of the plans that proved valuable in the last drought. Texas is moving slowly to those measures, but TWDB rules are not creating reasonable incentives to do so.

Likewise, *TWDB rules should* make it clear that the regional planning groups must consider and include strategies for use of brackish groundwater, reuse of treated effluent and other steps to extend existing supplies without creating additional risks to the environment, public welfare and rural economies.

Taken together, the changes reflected in these recommendations would have reduced the projected 2060 demand/supply gap from 8.3 million acre-feet in the 2012 State Water Plan to about 3.3 million acre-feet. A similar reduction would also result from these changes for the 2017 Plan.

These reductions in demand-supply gap would significantly reduce the price tag for the state water plan. If such changes were made in the water planning process, the state would also have a clearer path to priorities for both funding and authorizing new strategies to fill the gap.

B. Policy Recommendations

The Texas water planning process has increased decision-maker and public attention to water issues and provided a forum for involving people from various water use sectors all across the state. The bottom-up approach has benefits; however, it also has led to inconsistent planning across the regions and decisions that do not always reflect the broader state interests.

The state has essentially used the same process and the same set of rules and guidelines for four rounds of planning. Now, as Texas appears to be coming out of a period of severe drought, it is time for the planning process to evolve once again.

Our recommendations fall into six categories:

- Developing more realistic demand projections;
- Ensuring more effective use of existing supplies;
- Making healthy rivers and bays and vibrant rural economies co-equal goals to the other goals of the planning process;
- Moving away from the 50-year, single-scenario planning approach;
- Improving the baseline data and modeling for all aspects of planning;
- Making broader policy improvements in Texas water management that will benefit development of a sustainable water plan.

A. More Realistic Demand Projections

Good examples of what can be done through TWDB rule making were provided above. *TWDB rules should*, however, also set other standards and create other incentives to assure a continuous process of conservation. State funds to replace lost revenues for cities that have overbuilt water supply infrastructure may be needed in the short term and disincentives for overbuilding in the future should be considered.

Most importantly, *TWDB rules should* assure that each new regional plan is not simply built on the prior plan. Major new manufacturing or power generating facilities and even continuing water use by old facilities or uses that will be ended or reduced, such as irrigated agriculture in some parts of the state, should not automatically be included in new plans. *TWDB rules should* require that all demands in the 2017 plan be reevaluated based on new and stricter criteria in TWDB rules.

While these recommendations reduce the bottom-up planning that Texas has been engaged in for the last 20 years, it is clear that in some areas, State interest in realistic planning needs to replace regional wish lists.

B. More Effective Use of Existing Supplies

Again, several examples were provided above. While it is not possible to quantify exactly how much more water might be made available through these approaches, TWDB rules should require all regions to take a more systematic and aggressive look at these issues. TWDB rules should, for example, require each region to look at the difference in available supply between the Run8WAM (current use and return flows) versus Run3WAM (full use of paper permits and no return flows except required by permit). Identification of significant differences could lead to better ways to use the water not needed now, until it is needed in the future. It may turn out in many cases that the full water right obtained will not be needed in the future. That was certainly the conclusion from the water rights adjudication process after the drought of the 1950s. Texas found significant amounts of water that could be shifted to fill other projected needs. That analysis would at least add transparency

TWDB rules should also go beyond the recommendations on drought contingency plans discussed above. There are other ways to reduce the peak uses during drought. The planning process should not simply focus on assuring adequate supplies during drought years. Reducing the peak is critical.

TWDB rules should also be amended to encourage the regions to propose projects that meet both human and environmental water demands. Projects of this type include, but are not limited to: re-use projects that meet municipal demand while dedicating a portion of the re-use to environmental flow needs; voluntary market transactions of water from one use to another, with a portion of the transacted water dedicated to flow needs; construction of off-channel reservoirs that will be operated to meet both human demand and environmental flow needs; and land stewardship projects that help increase aquifer recharge and spring flow.

These kinds of projects, which may be particularly important during drought times, will help avoid environmental conflict and degradation while effectively meeting reasonable municipal, industrial or agricultural demands.

Other ways to use existing supplies more effectively also deserve greater consideration. Reallocation of storage capacity in reservoirs, better local interconnection of supplies and increased use of aquifer storage and recovery have all been considered on an ad hoc basis, but TWDB rules have not required the regional planning groups to consider these options as part of the planning process.

C. Healthy Rivers and Bays and Vibrant Rural Economies as Co-equal to the Other Planning Goals

With the broad goals of SB 1 of protecting state and local economies and agriculture and natural resources and with the added focus of SB 2 and SB 3 on

goals of protecting environmental flows, TWDB rules should encourage the regional planning process to evolve to one that helps find balanced solutions to future water needs. The SB 1 process clearly was not intended just to project demands and recommends strategies in a vacuum. A true planning process needs to integrate the state's and regions' broader goals and identify options for meeting the full range of goals. Failure to do so can in many cases lead to strategies that cannot be implemented or can only be implemented with great costs to the cultural, natural and historic resources of the state.

TWDB rules should be revised to encourage integration of the environmental water needs that are being highlighted by the SB 3 process and to help develop strategies to meet needs where there is not sufficient water in the rivers and streams to do so.

D. New Planning Approach

Given the uncertainty of 50-year demand and supply forecasts and the difficulty of predicting what water-saving and treatment technologies may come on line by then, TWDB rules should shift to focus more heavily on the next two to three decades. While decadal projections are included in the 2017 and prior state plans, virtually all the public relations and other emphasis has been on the 2060 and 2070 figures (8 to 9 million acre-feet per year demand/supply gap with a \$50+ billion price tag.)

As our analysis demonstrates, many of the big demand/supply gaps and expensive projects designed to meet those gaps will not occur until the last decade of the plan, if then. Spending time and money now on those proposed projects only distracts from what must be done to meet more demonstrable needs in the shorter-term, while we encourage new technologies and strategies that could cut demands or increase supplies over the long term.

Priorities for planning, permitting and funding should be focused on strategies for which there are clear needs, not on speculation of long-term needs. Focusing on the long term will likely result in over building and disincentives for conservation and peak demand reductions.

The uncertainty in demand and supply forecasting also argues that TWDB rules should require a multiple scenario approach to planning, especially for the longer-term. For example, instead of making projected demand figures for municipal use for each water user group in a region, with the false appearance of precision projections, the planning process could be used to look at a range of likely demand scenarios, with projections on low to high demands. That would in turn allow a more serious look at a range of supply strategies, from increased emphasis on conservation to more expensive infrastructure projects. Such an approach to

planning would not only provide decision-makers with a clearer choice among water management alternatives, it would show the public the actual costs embedded in the currently obscure assumptions behind a “one scenario” approach.

TWDB rules should require each region to develop scenarios. There may be use areas where such scenarios are more beneficial, and the next round of planning might focus on those areas. In any case, the scenarios should require at least one “low demand” scenario reflecting stronger assumptions about how per capita use is likely to trend downward and the savings in peak demand that could be achieved by implementation of drought contingency plans.

Both the state of Colorado’s Statewide Water Supply Initiative (SWSI)² and the federal Colorado River Basin Study³ provide potential models for a scenario-based planning approach that also helps focus on near-term versus longer-term demand/supply gaps. In fact, the 1997 Texas water plan included an initial approach to using scenarios, but that approach was not carried forward in the SB 1 planning process.

E. Better Baseline Data and Modeling

As documented in TCPS’ report, there is significant room for improvement in the state’s baseline water use and supply data collection, which is critical for a planning process that is used to set priorities on state funding and permits. In particular, data on water use in the irrigation, mining and steam electric power generation sectors could be improved significantly through more use of monitoring (versus estimated use) and stronger incentives, if not enforcement, for the existing TWDB and TCEQ rules on use reporting. Collection of more accurate data by groundwater districts is also needed, but will require additional state funding.

The process should, however, start with TWDB rules which should require accurate responses to the agency’s surveys. The surveys themselves need to be clearer and more detailed. However, even with clearer surveys, there is no assurance that responders will take the time to provide accurate information or even to be honest unless TWDB make it clear that they need to do so and that there are consequences if they do not. TWDB rules should address these issues. To limit costs, however, such data collection could be focused on the areas where the data needs are the greatest.

The water availability models (WAMs) used for planning also need to be improved with the addition of more recent hydrological data and, in some areas, more flexibility to model different assumptions about reservoir operations and levels of use of existing permits. Likewise in priority areas of the state (where demand is

²<http://cwcb.state.co.us/publicinformation/publications/Documents/ReportsStudies/GapAnalysisMemo062111FinalWFigures.pdf>.

³<http://www.usbr.gov/lc/region/programs/crbstudy.html>.

bumping up against supply and surface and groundwater are clearly interconnected), integration of the surface water WAMs and groundwater availability models (GAMs) or some other approach is needed to provide regions the data that they need to avoid overestimating supplies or ignoring potential impacts of different strategies.

Modeling is not likely an area for TWDB rulemaking, but improvements in models are needed, and regional plans need to be required to use the newest models for projections.

F. Broader policy improvements

While this report is focused on the water planning process, it is impossible to completely separate water planning from the overall legal and institutional context for water management. Several improvements are vital, including:

- Enhancing groundwater management by assuring better data on aquifers and impacts of pumping on supplies, quality and surface water where there is interconnection between the ground and surface waters.⁴ This should begin with *TWDB rules* that require accurate responses to TWDB use surveys involving groundwater by the pumper and by the groundwater district.
- Requiring stronger integration of water and energy planning and permitting at the state level to take advantage of existing water supplies and water saving technologies.⁵ *TWDB rules should* start this with a process of better data collection on both the consumed water for cooling and the additional large quantities of water diverted for cooling water supplies for steam electric power generation. It should also include strict rules on projections for water use for such generation and new SEPG facilities, so that each region that wants to have more power plants or expansions of existing ones, has to provide a justification for including the facility as well as the water need in a regional plan.
- Better recognition of and planning for the connections between land use, water use and water supply, especially in rapidly suburbanizing counties.⁶ *TWDB rules should* require consideration by regional planning groups of how water supplies can be protected, if not expanded through land conservation and encourage conservation of water on rural lands.

⁴ See, e.g. Texas Center for Policy Studies, *Groundwater in Texas: Policy Recommendations for the 83rd Legislative Session*, January 2013, available at www.texascenter.org/water_plan.html.

⁵ See, e.g. The University of Texas at Austin and Environmental Defense Fund, *Energy Water Nexus in Texas*, April 2009, available at <http://texaslivingwaters.org/wp-content/uploads/2013/04/energy-and-water-in-tx09.pdf>.

⁶ See, e.g. Texas Association of Land Trusts, www.texasaglandtrust.org and Hill Country Alliance, www.hillcountryalliance.org.

- Improving municipal water rate design to foster conservation while ensuring adequate revenue.⁷ *TWDB rules should* include clear requirements for cities to encourage conservation. They should require that regional plans identify cities that have rate structures that encourage greater, rather than less water use, and the planning groups to help develop strategies to maximize conservation opportunities in such cities.

Please let me know if you have any questions or would like any further information with regard to these comments.

Sincerely,

Richard Lowerre
Executive Director

CC: Temple McKinnon (templemckinnon@twdb.texas.gov)

⁷ University of North Carolina and Lone Star Chapter of the Sierra Club, [Designing Water Rate Structures for Conservation and Revenue Stability](http://texaslivingwaters.org/wp-content/uploads/2013/04/energy-and-water-in-tx09.pdf), March 2014, available at <http://texaslivingwaters.org/wp-content/uploads/2013/04/energy-and-water-in-tx09.pdf>.