



TEXAS CENTER
FOR POLICY STUDIES

April 25, 2016

via email: Public-Comment@twdb.texas.gov

Ms. Connie Sanders
Office of General Counsel
Texas Water Development Board
P.O. Box 13231
Austin, Texas 78711

Re: Comments on Draft 2017 State Water Plan

Dear Ms. Sanders:

Thank you for this opportunity to submit comments on the draft 2017 State Water Plan.

Summary:

In 2014, Texas Center for Policy Studies (TCPS) released its report, "Learning from Drought: Next Generation Water Planning for Texas." That report looked at a number of issues related to the 2012 State Water Plan, including the data used for projected water demand. More recently, TCPS conducted a more detailed examination of demand projections for steam electric power generation (SEPG), including projections in the draft 2017 Plan.

On a statewide basis, water consumed for SEPG is a small percentage of the current water consumed, and it has understandably not been a high priority for evaluation in the water planning process. However, the current projections are essentially the same as those proposed in a 2003 report, before Texas began to see significant changes in the sources and technologies for electric power (i.e. more renewable energy, closures of coal-fired power plants and other changes).

It is past time to take a much harder look at water demand projections for SEPG. Doing so will show reductions in demand for cooling water, not the sharp increase in demands shown in the draft 2017 Plan. It will show that a proper evaluation for the 2017 Water Plan would reduce the projected needs significantly.

Thus, TCPS urges TWDB to add a statement in its final 2017 Plan that the SEPG projections are based on evaluations made in 2003 that did not contemplate the changes that have occurred and are expected to occur over the next 50 years in electric power generation. TWDB should also highlight the need to focus more attention in the next round on water supplies and demands for electric power generation.

TWDB should then spend the time and resources required over the next year or two to develop better data on current uses and supplies, on the projected mix of electric power generation in the future and on the resulting demands for water for such generation.

TWDB should also address the possible reallocation of the large amounts of water that are diverted for SEPG cooling but not consumed in cooling. Those diversions could be 10 times the

amount consumed, possibly as much as 50% of all water diverted in Texas for all uses. In certain regions of the state, this could have significant implications for the water available for other uses, including, but not limited to the environment.

Introduction:

Regardless of the projections for growth in population and water demands, everyone should agree that Texas needs to find ways to use the water we have in more efficient ways. One way Texas could do so is to pursue clean energy and low water use technologies for SEPG. Texas also needs to coordinate planning between the energy and water sectors.

Based on our work over the last few years, TCPS projects that there will be some significant amount of the water currently reserved for SEPG that could be used to help fill future needs for municipal, industrial, agricultural and environmental needs.

The state water planning process has not been focused on accurate evaluations of water needs for SEPG. As a result, projections for water consumed in cooling SEPG are significantly inflated. It is very likely that demand for water for SEPG will fall, not rise.

The first problem is the significant errors in the data that TWDB is providing to regional planning groups. The survey process used by TWDB is simply not providing a reasonable base of data on current use or for projecting future demands. TWDB's efforts are improving, but the surveys for SEPG are still confusing and result in inconsistent use and projected demand figures. The reporting under TCEQ's water rights program is also not set up to provide the use and supply data for SEPG that should be available for planning.

As a result, data on historic use and the projected demands cannot be reconciled. As shown in Figure 1, the projections start well above the historic use, even far exceeding reported use for the drought years of 2010 and 2011.

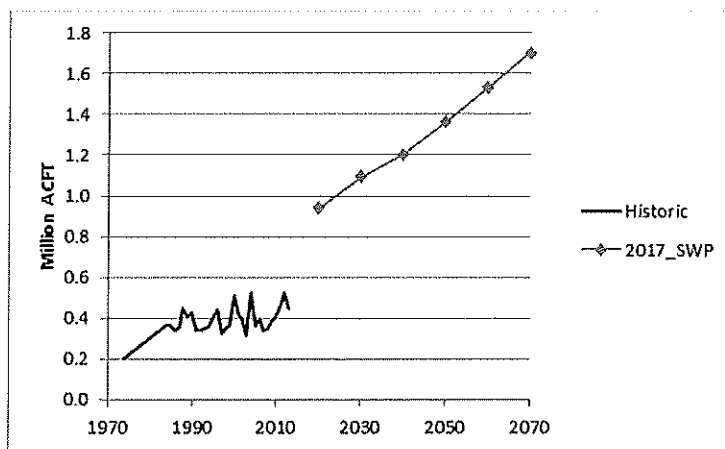


Figure 4. Historic consumptive use for SEPG and TWDB projected demand provided by TWDB for the 2017 state water planning process.

The Failure of the Planning Process in the Past:

The problem started in 2003, after the 1997 and 2002 water plans actually projected modest and relatively accurate increases in the demand for cooling water for SEPG. TWDB paid for a study by the electric power industry on its use and demands and then directed regional planning groups to base their 2007 demand figures for SEPG on that study. Whether it was because of the significant projected increases in demands in the report, the apparent errors in the

underlying assumptions used in the report, or some other reason, in 2008 TWDB paid for a new study by the Bureau of Economic Geology (BEG). That study identified significant flaws in the 2003 study. TWDB did not, however require or direct the planning groups to use this 2008 study for their 2011 regional plans. The BEG study clearly provided much more realistic scenarios for the future of water demands for SEPG.

As a result, the 2012 projections were almost identical to those made in 2007. Now, the 2017 plan shows the same projections. The projected demands even include water for new and expanded SEPG facilities that the owners have officially abandoned.

Moreover, the projections for needs for SEPG in the future are likely worse than demand projections because TWDB does not have reliable figures for existing or projected supplies for cooling water. The figure used for current supplies, about 1.1 million acre feet of water per year, apparently is not based on an accurate evaluation of the amount of existing water rights and water contracts reserved or available for SEPG. It appears that TWDB has simply used the approach from the 2003 report and assumed that supplies cover existing demands with a small surplus.

Finally, TWDB has not pursued effective evaluation of the large diversions for SEPG, water captured in reservoirs and cooling water lakes but not consumed during cooling. Nationwide, these diversions from rivers and streams are as much as 50% of all diversions. The figures in Texas could be similar. While only 5 to 10 percent of that water diverted is actually consumed in cooling, the diversions limit other uses of state water. The Texas water planning process looks at only the consumed amounts.

The Opportunities:

It is understandable that the demands for SEPG have not been the focus of early planning. The draft 2017 State Water Plan indicates the demands at about 1 million acre-feet per year, only 5% of all demands on a statewide basis. In reality, as shown in Table 1 above, the total use has never been much over half of that figure. In any case, TCPS understands that TWDB has not had sufficient resources to address all of the data and evaluations needed to develop the figures or assist regional planning groups to develop realistic demands and supply projections for all uses, including cooling water for SEPG.

Still, projections for the percent of state water consumed for SEPG rise more quickly than most other uses, doubling during the planning period from about 5% of all demands to about 9% of all demands. That projected additional need of over 500,000 acre-feet per year adds to the \$53 million projected cost of supplying water in the future.

There are several regions where the current and future demands are significantly higher than the statewide average. Regions D, E, G and K show 2020 uses of 10% or more of their total demands, with 2070 demands also at such higher percentages. These regions might be the first ones to consider for any focused SEPG evaluation.

Moreover, if, as TCPS projects, SEPG demands actually drop, current supplies for SEPG could help fill other needs, not only eliminating the costs of the projected 500,000 acre-feet increase in SEPG water demand, but also saving money by being available for other unmet needs.

Texas is already seeing the closure of major SEPG facilities. Old coal, lignite and gas fired plants use much more water than modern plants. Several of the new plants or expansions in Texas are using air-cooled systems, requiring very little water. Tens of thousands of acre-feet of water per year have already been freed up across the state. The closure and reduced generation at

just one lignite plant, the Monticello Plant in east Texas, has already freed up 20,000 acre feet per year. The total surplus for that one plant could be closer to 40,000 acre-feet per year, with the additional thousands of acre-feet of water per year that are diverted to maintain a cooling water lake also becoming available.

It is time to acknowledge the need for a better approach to SEPG projections and develop the data that could help address other needs. It is time to evaluate the true relationship between electric power generation and water uses in Texas.

One Important Use for Surplus SEPG Water:

The location of closures in SEPG facilities or reductions in generation will certainly determine whether surpluses can be used to fill other needs. There is, however, one type of need that can clearly benefit from surplus SEPG water, environmental water needs. There are, in fact, needs likely caused, at least in part, by the diversion of water for SEPG.

Water rights for cooling water at many of the old SEPG facilities were granted before protection of the environment was a consideration in the state permitting process.

With the implementation of Senate Bill 3, Texas has developed an initial scientific assessment of environmental water needs. The SB 3 process is also starting to identify strategies for filling those needs.

Surplus SEPG could be a significant source of water for such strategies. In some cases, flow needs in rivers could be satisfied as surplus water in reservoirs formerly used for SEPG is released downstream for new uses. Many environmental water needs do not require "consumption" of water, but rather require more natural instream flows, including pulse flows. Timing and amount of releases are often the critical factors.

Recommendations:

TWDB should engage experts to evaluate the current uses and supplies for SEPG and the projected mix of electric power generation. Such experts should be allowed to determine how TWDB surveys current SEPG owners and work with TCEQ to improve its water rights use reporting to provide the needed data.

TWDB should require all regional planning groups to start over on their projected demand and supply figures for SEPG; not start with existing projections. TWDB should allow the groups to include new demands for water for SEPG **only** if they can show that there is an actual time schedule for construction of a new or expanded SEPG facility and that the projected water demand for the new SEPG is based on the technologies that reduce water use.

And TWDB could go further. It could encourage the use of low water electric power generation. It could, for example, support low interest loans for use of or conversion to the new technologies. TWDB could, at least, highlight the value to the state of moving to renewable sources and the new air-cooled, gas-fired facilities.

Finally, TWDB should advise regional planning groups and the Legislature of the opportunities to address environmental water needs with some surplus waters from SEPG facilities. It should encourage the development of creative strategies that provide water for future consumptive needs identified in the water plan, while helping to address the environmental water needs created in part by the development of older SEPG facilities.

Conclusion:

Proper attention to the issue of future needs for water for electric power generation would help Texas understand the value of clean energy and of planning for water together with planning for energy. Proper attention now could assure that the 2022 State Water Plan provides a more realistic projection of water needs, and a better basis for future permitting of water rights and funding of water projects.

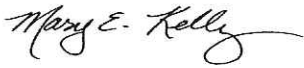
TWDB should start that process by including additional language in the 2017 water plan that acknowledges the inflated projections in the current plan and sends a strong signal that a new focus on water use for electric power generation will be a priority for the 2022 round of regional and state water planning.

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

Sincerely,



Richard Lowerre



Mary Kelly