POLICY MEMORANDUM

SUBJECT: Rivers**,** Bays and Estuary Systems in Texas

ANALYSIS TEAM: Amelia Koplos, Benhi Bolhassani, John Montgomery, and Michael O'Conner, Water Policy Analysts, The University of Texas LBJ School of Public Affairs

DATE: 18 November 2014

Introduction and Context

The following brief presents the current state of the Texas bay and estuary systems as one of the more troubling issues in state water policy, and provides recommendations to remedy the failures. An examination of these findings is vital for understanding which future policy decisions could make or break the economic, environmental, and social health of the state's coastal waters.

Background

Texas has eight bay and estuary systems along its coast. In the 1990s, state legislation mandated water rights permits to consider the inflow needs for bays and estuaries. These inflow minimums balance salinity levels to the coastal systems, which require a delicate balance for the ecosystem to survive. This legislation was reversed in 2005. In 2007, Senate Bill 3 created a process to determine the environmental inflow needs of bays. The process included the creation of Basin and Bay Expert Science Teams (BBESTs). These teams are committees of scientists under the Texas Commission on Environmental Quality's (TCEQ) authority and are charged with evaluating what is known and understood about the coastal estuaries. BBEST reports, as well as those from the National Wildlife Federation, have shown these ecosystems to be completely unviable in many of Texas' bays and estuaries as they currently stand[i]. A more detailed background of this history has been listed in the endnotes of this brief[ii], but it is important to note that the state's inconsistent water policy and mismanagement of water has continued to support withdrawals from over-permitted waterways resulting in the continued degradation of all eight systems. Additionally, while 2007 legislation brought much-needed research and monitoring of these systems, no current policy exists that mandates consideration of water inflow to bays and estuaries as part of a larger state plan[iii]. Likewise, water rights holders prior to this legislation are exempt from the regulations authorized by it and many of the river basins' water rights were already over allocated prior to 2007.

Issues

The most obvious implications of decreased bay and estuary health are the environmental impacts to the ecosystems that call these areas home (e.g.. those of whooping cranes and blue crabs). Many key stakeholders from environmental advocacy groups, citizens, and even the federal government have become involved. The Aransas Project (TAP) exemplifies such a stakeholder group. TAP is a constituency of bipartisan citizens, county and city officials in Aransas County, advocacy groups, and commercial and recreational fishermen. In 2013, TAP and others brought suit against the state regarding San Antonio Bay.[iiv] The Federal District Court in Corpus Christi ruled that the TCEQ violated the Endangered Species Act through water management actions on Guadalupe and San Antonio Rivers that resulted in killing of 23 whooping cranes. More than the fact that the species has been near extinction throughout history, the whooping crane is one of the best indicators of the overall health of the system[v].

Since whooping cranes rely on aquatic food sources that are hypersensitive to salinity, increased salinity levels from reduction of inflows upstream has lethal consequences for both aquatic life and whooping cranes[vi]. The ruling was unprecedented and spurred serious conversation throughout the water industry. It was later overturned in the 5th Circuit Appeals Court on issue of Section 9 ESA regarding fairness of state liability[vii]. This overturn was based up a legal technicality, not science, and has been appealed.

Less obvious, but equally concerning to bay and estuary health, are businesses, specifically major agriculture and commercial fishing industries. Because these industries rely on adequate inflows to support their marine harvests, the endangerment of aquatic and plant life on the coast directly threatens their livelihoods.

On the other side of the argument are stakeholders who oppose any additional regulation that would prevent needed or desired withdrawals already granted through their water permits. These stakeholders are water rights permit holders at the upper and lower portions of rivers flowing into bays and estuaries—largely municipal water systems and large, water-intensive businesses[viii]. These stakeholders feel that the effects to upstream permits on considering inflows means that a senior water right may no longer be senior if the inflows to bays and estuaries were required in statute to be considered. In short, their permits would be nothing more than a piece of paper if the legal agreements contained therein could be overridden by the same agency that originally authorized it.

Assessment

The state has failed to consider its bay and estuary systems to be a primary stakeholder in the allocation and management of water. With continued water shortages to and overall degradation of these coastal regions, state officials cannot continue taking a reactive approach to the management of bays and estuaries. The Texas Commission on Environmental Quality (TCEQ) has broad statutory authority to change its approach through Chapters 5 and 11 of the Texas Water Code, but makes water management decisions based only on Ch. 5. This section of the code lays out a much more narrow scope of authority than Chapter 11 and leaves no room for consideration of inflow needs to bays and estuaries. Chapter 11 would allow for TCEQ to cancel, decrease or limit water rights permits during times of drought[ix]. By failing to utilize its full authority, the state has yet to manage upstream water uses that directly endanger the health of bays and estuaries.

Policy Alternatives and Recommendations

The following are proposed strategies to address the aforementioned issues, developed from readings and lectures by water experts. We support the following broad, simple solutions for solving issues surrounding Texas bay and estuary health[x]. These recommendations are not only effective, but are practical ways to utilize already-existing state mechanisms.

- **Better use of TCEQ's statutory authority to consider inflow needs during permitting process –** enforcing TCEQ's right to deny, cancel, or reduce existing water rights through permitting for the health of bay and estuary systems.

  Advantages: Water rights holders have historically been legally granted more water than is safely available when considering inflow needs. This proposal wouldn't require any change to current legislative, but rather a better use of the mechanisms currently in place. It would likely be the easiest and fastest way to restore health to these ecosystems.

  Disadvantages: As mentioned, water rights holders are typically large companies or municiplaities with a major economic stakes in their allotted water; TCEQ will likely face

backlash and legal battles for changing their longstanding water management strategy. Finally, impacts of water limitations for businesses on state economy.

- **Utilizing the authority of the state watermaster program** - regulate and oversee withdrawals during times of drought, extended to bays and estuaries.

  Advantages: The watermaster program has been a well established and effective mechanism for management of critical watersheds; as such, using this program wouldn't require a "learning curve" for stakeholders and might be less controversial than the previous alternative.

  Disadvantages: Similar issues could likely arise from water rights holders who would face a threat to current allotments; additionally, new legislation would need to be created for extending the program to bay and estuary systems.

- **Statewide water conservation program -** this is especially critical for areas of concentrated water use, namely geared towards municipal users[xi].

  Advantages: The alternative would be the most cost-effective, since using less water is both financially advantageous and would be, essentially, a free way to improve the health of bay and estuary systems.

  Disadvantages: This program would need to be implemented at the state level; such a "top-down" approach to water management might be unfavorable to regions and localities. There would also be costs associated with design and implementation; finally, public buy-in would be crucial to the program's success.

Conclusions

Of the three recommendations, we believe the third could yield the most impactful and effective way to improve the health of the state's bay and estuary systems. Municipalities are among the largest water consumers in the state; this consumption often goes above and beyond reasonable amounts because there are no incentives, financial or otherwise, to conserve water. Because water costs to end-users are lower than the direct and indirect costs of water transmission, treatment, and wholesale purchase, these costs should be borne by those users who consume excessive amounts each month. Cities adopting tiered rate systems would be one method for accomplishing this[xii]. Along with conservation would a better accounting system of the indirect costs of reduced inflows should be developed to capture the true fiscal impacts of bay and estuary health on the state's economy.

However, with population growth combined drought/climate change impacts, it is critical to bays and estuaries that the TCEQ exercise its "unexercised" authorities. The current over allocation of water rights in most river basins stands as a death knell to the State's bays and estuaries if not appropriately addressed.

---

[i] Norman Johns, *Bays in Peril: A Forecast for Freshwater Flows to Texas Estuaries*, Organization (National Wildlife Federation, October 2004).

[ii] "The Texas Coast: Productivity and Water Policy," accessed November 1, 2014, http://bakerinstitute.org/research/texas-coast-productivity-and-water-policy/.

[iii] Jim Blackburn, "Texas Surface Water And The Future" (Power Point presented at the Presentation to Texas Water Policy Course, The Lyndon Baines Johnson School of Public Affairs, October 22, 2015).

[iv] "The Texas Coast."

[v] Johns, *Bays in Peril: A Forecast for Freshwater Flows to Texas Estuaries*.

[vi] Ibid.
[vii] Blackburn, “Texas Surface Water And The Future.”
[viii] Johns, *Bays in Peril: A Forecast for Freshwater Flows to Texas Estuaries*.
[ix] Blackburn, “Texas Surface Water And The Future.”
[x] “The Texas Coast.”
[xi] Andrew Sansom, “Water in Texas” (Power Point presented at the Texas Water Policy Course, The Lyndon Baines Johnson School of Public Affairs, October 29, 2014).
[xii] Ibid.