

# WATER RESOURCE COMMISSION WORKING GROUP

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**Appendix A**  
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**RS 38:3097.4**

## §3097.4. Water Resources Commission; membership; powers and responsibilities

A. The Water Resources Commission is hereby created and shall be composed of the following members:

- (1) The governor or his designee.
- (2) The commissioner of conservation or his designee.
- (3) The commissioner of agriculture and forestry or his designee.
- (4) The secretary of the Department of Economic Development or his designee.
- (5) The secretary of the Department of Environmental Quality or his designee.
- (6) The secretary of the Louisiana Department of Health or his designee.
- (7) The secretary of the Department of Wildlife and Fisheries or his designee.
- (8) The secretary of the Department of Transportation and Development or his designee.
- (9) The chairman of the Coastal Protection and Restoration Authority Board or his designee.
- (10) The executive director of the Sabine River Authority or his designee.
- (11) The executive director of the Louisiana Public Service Commission or his designee.
- (12) One member appointed by the governor, who is a geologist or an engineer with expertise in ground water resource management.
- (13) One member appointed by the governor from a list of four nominations submitted jointly by the Louisiana Chemical Association, the Louisiana Mid-Continent Oil & Gas Association, the Louisiana Association of Business and Industry, and the Louisiana Pulp & Paper Association.
- (14) One member appointed by the governor from a list of three names nominated by the Louisiana Farm Bureau.
- (15) One member appointed by the governor from a list of three nominations submitted by the Police Jury Association of Louisiana.
- (16) One member appointed by the governor from a list of three nominations submitted by the Louisiana Municipal Association.
- (17) One member appointed by the governor from a list of three nominations submitted by the Sparta Groundwater Conservation District Board of Commissioners.
- (18) One member appointed by the governor from a list of three nominations submitted by the board of commissioners of the Capital Area Groundwater Conservation District.
- (19) One member appointed by the governor who resides or works in the geographical area of the state underlain by the Chicot aquifer.
- (20) One member appointed by the governor from a list of three nominations submitted by the Louisiana Landowners Association.
- (21) One member appointed by the governor from a list of three names submitted by the Louisiana Wildlife Federation, Coalition to Restore Coastal Louisiana, and the League of Women Voters.
- (22) One member appointed by the governor from a list of three nominations submitted by the Ports Association of Louisiana.
- (23) One member appointed by the governor from a list of three nominations submitted by the Louisiana River Pilots' Association.
- (24) One member, who is a lawyer licensed to practice in Louisiana with not less than five consecutive years in the practice of law in Louisiana and who has legal expertise in water law, appointed by the governor from a list of four names submitted by the chancellor of the Louisiana State University Law Center, the dean of the Loyola University New Orleans College of Law, the chancellor of the Southern University Law Center, and the dean of the Tulane University Law School.
- (25) Two members, one appointed by the chairman of the House Natural Resources and Environment Committee, and one appointed by the chairman of the Senate Natural Resources Committee who does not represent commercial, industrial or agricultural interests but who represents residential consumers.
- (26)(a) The chairman of the House Committee on Natural Resources and Environment, or his designee, shall serve as an ex-officio non-voting member.

(b) The chairman of the Senate Committee on Natural Resources, or his designee, shall serve as an ex-officio non-voting member.

(c) The chairmen shall not be counted as part of the total membership of the commission for purposes of determining the number of members necessary to constitute a quorum but, if present, they shall be counted as members for purposes of establishing a quorum for the particular meeting.

B. The appointed members of the commission shall serve four-year terms except for the initial term, in which the governor shall designate the terms of office so that three members shall serve a one-year term, three members shall serve a two-year term, and four members shall serve a three-year term. No appointed member shall serve more than two consecutive terms. In case of a vacancy, the governor shall appoint a replacement to fill the unexpired term. Appointed members shall not be compensated for their services, except the commissioner may promulgate rules and regulations to provide for travel expenses. Appointed members shall be considered as such, and not elected, for the purposes of R.S. 42:1102 et seq.

C. The governor or his designee shall serve as chairman of the commission. The commission shall meet at least twice per calendar year, but may meet more often as necessary.

D. The commission shall have the authority to do the following:

(1) Review and approve or reject any orders of the commissioner placing restrictions on wells upon petition by the owner of the affected well or proposed well or any owner of a well in the same aquifer which may be adversely impacted by the well in question. In reviewing such decisions the commissioner shall not serve as a voting member of the commission. The order of the commissioner shall be rejected only if the commission concludes, after a review of the record, that a reasonable factual basis does not exist for the commissioner's decision. Rejected orders shall be returned to the commissioner for reconsideration. An order that has been returned to the commissioner twice shall be considered a final decision and eligible for judicial review pursuant to R.S. 38:3097.5.

(2) Review rules and regulations proposed by the commissioner pursuant to the proper administration and enforcement of this Chapter.

(3) Continue the development, in cooperation with the commissioner, of a statewide ground water resource management program that shall include but not be limited to evaluation of the state's ground water resources including current and projected demands; development of a water use conservation program; study of alternatives to ground water use, such as surface water to include treatment and transmission system, and reclaimed water; incentives for conservation; use of alternative technologies; and education and conservation programs. The plan should stress conservation as the primary mechanism for the protection of the state's ground water resources. The commission shall also hold public hearings and consult with local governmental entities in the development of this program.

(4) Evaluate the state's surface water resources including current and projected demands, inventory the state's surface water supplies, identify technical research and previously developed information on surface water, identify potential future deficit areas, study alternatives to surface water use including treatment, transmission systems, and reclamation, and investigate incentives for conservation and the use of alternative technologies, including public education and conservation programs.

(5) Review the contingency plan developed by the commissioner to respond to a ground water emergency.

(6) Direct the commissioner to promulgate rules and regulations for the appointment or designation of up to five regional bodies based on the general location of major aquifer systems and water sources of the state and composed of local stakeholders who are representative of current users. Such bodies may gather data and provide local input to the commission and the commissioner.

(7) At their discretion, attend all public meetings called by the commissioner pursuant to his power and duties in this Chapter.

Acts 2003, No. 49, §2, eff. July 1, 2003; Acts 2006, No. 30, §1; Acts 2012, No. 471, §2; Acts 2012, No. 601, §1, eff. June 7, 2012; Acts 2016, No. 430, §4.

**Appendix B**  
La. R.S. 30:961  
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**RS 30:961**

## CHAPTER 9-B. SURFACE WATER MANAGEMENT

## §961. Cooperative endeavor agreements; withdrawal of surface water; intent

A. As provided by this Chapter and except as otherwise provided by law, a person or entity may enter into a cooperative endeavor agreement to withdraw running surface water as described in this Chapter. The cooperative endeavor agreement shall prohibit the resale of withdrawn running surface water for a price greater than provided for in the agreement; however, a person or entity may receive compensation for the transportation, manufacturing, or processing of withdrawn running surface water. Unless otherwise provided by law, all cooperative endeavor agreements to withdraw running surface water, and any assignment of such agreement, shall be approved by the secretary as provided in this Chapter. No provision contained in this Chapter should be construed as a requirement for any person or entity to enter into any cooperative endeavor agreement to withdraw running surface water. This Chapter shall have no effect on the rights provided for in Civil Code Articles 657 and 658 or any rights held by riparian owners in accordance with the laws of this state. It is also the intent of the legislature that should any portion of this Chapter be found to be unconstitutional that the remaining parts shall continue in force and effect.

B. No agency or subdivision of the state otherwise authorized to enter into a cooperative endeavor agreement to withdraw running surface water, or assignment of such shall do so unless the agreement is in writing, provides for fair market value to the state, is in the public interest, and is contained on a uniform form developed and prescribed by the State Mineral and Energy Board and approved by the attorney general. Except when water is withdrawn from bodies of water managed by the Department of Wildlife and Fisheries and determined by the office of fisheries to be negatively impacted by invasive aquatic vegetation, fair market value to the state shall include but not be limited to the economic development, employment, and increased tax revenues created by the activities associated with the withdrawal of running surface water. No such cooperative endeavor agreement to withdraw running surface water shall be valid unless and until such agreement is approved by the secretary following the submission of an application for approval, which the secretary shall develop and prescribe. The secretary shall conduct the evaluation provided for in Subsection D of this Section and take action on the application within sixty days of the application being deemed complete. If the secretary denies the application, the secretary shall provide written reasons for the denial at the time of the denial.

C. Unless otherwise provided by law, the secretary is authorized to enter into any cooperative endeavor agreement to withdraw running surface water, provided that any such agreement complies with the prohibition against gratuitous donation of state property by ensuring that the state receives fair market value for any water removed, and the substance of the agreement is contained within a written cooperative endeavor agreement as provided for in Article VII, Section 14 of the Constitution of Louisiana.

D. The secretary shall evaluate each application for a cooperative endeavor agreement to withdraw running surface water and each such cooperative endeavor that he may enter to ensure that each is in the public interest. The secretary shall ensure the proposed agreement is based on best management practices and sound science, and is consistent with the required balancing of environmental and ecological impacts with the economic and social benefits found in Article IX, Section 1 of the Constitution of Louisiana. In his evaluation, the secretary shall also ensure that all cooperative endeavor agreements to withdraw running surface water, or assignments of such, adequately consider the potential and real effects of such contracted activity on the sustainability of the water body and on navigation. Any assignment of any such cooperative endeavor agreement to withdraw running surface water may be approved by the secretary in the same manner as an agreement as provided in this Section, unless otherwise provided for by law.

E.(1) A cooperative endeavor agreement to withdraw running surface water, or an assignment of such, entered into pursuant to the provisions of this Chapter shall have an initial term not to exceed two years. No new cooperative endeavor agreement shall be entered into for which an application was received by the department after December 31, 2018; however, except as otherwise provided in this Subsection, existing agreements may be renewed in two-year increments but shall terminate no later than December 31, 2020.

(2) A person or entity who has entered into a cooperative endeavor agreement to withdraw running surface waters or has obtained an assignment of such, may terminate such agreement after December 31,

2018. In order to be effective, the person or entity seeking to terminate shall provide written notice by certified mail to the secretary at least thirty days prior to termination.

F. The secretary may act to protect the natural resources of the state by reducing any withdrawal of water from the running surface waters of the state otherwise agreed to be withdrawn pursuant to an agreement entered into pursuant to this Chapter, or make other conditions, including the suspension or termination of such withdrawal of water when such an action is required to protect the resource and to maintain sustainability and environmental and ecological balance. If the secretary acts to reduce or suspend the volume of water agreed to be withdrawn, he shall do so in such a manner that the total necessary reductions are proportionally borne by all users of the running surface waters, subject to this Chapter, in the area for which a reduction is required. Prior to approval, the secretary shall ensure that each contract or agreement or assignment thereof that involved the withdrawal of the running surface waters of the state provides for the secretary's authority, without liability for damages, in this regard.

G.(1) The secretary, in deciding whether to approve or require changes in an application for a cooperative endeavor agreement to withdraw running surface water, or assignment of such, shall consider the various existing and potential users of the resource and shall give appropriate consideration and priority to the following users or uses in the following order of priority:

(a) Human consumption by means of a public water system or a private water system that provides domestic potable water service.

(b) Agricultural uses that provide sustenance to animals or irrigation to plants.

(c) Any commercial purpose or other industrial or mining activity.

(2) The secretary shall also consider the impact of any proposed contract, agreement, assignment, or use on resource planning. By way of illustration but not limitation, these would include any potential project or use that impacts:

(a) Stream or water flow energy.

(b) Sediment load and distribution.

(c) Navigation.

(d) Aquatic life.

(e) Other vegetation or wildlife.

(3) The management of cooperative endeavor agreements to withdraw running surface water shall be consistent with the comprehensive master plan for coastal restoration and protection as approved by the Coastal Protection and Restoration Authority Board and the legislature.

H. Approval of an application for a cooperative endeavor agreement to withdraw running surface water or assignment of such pursuant to this Chapter does not obviate the need for other permits or authorizations required by law for any proposed activity.

I. Any cooperative endeavor agreement approved or entered into by the secretary pursuant to the Section which provides for the withdrawal of running surface water for use outside the boundaries of the state of Louisiana shall require the approval of the House Committee on Natural Resources and Environment and the Senate Committee on Natural Resources. In determining whether to approve such agreement, the committees shall consider the reasonableness of the withdrawal, whether the withdrawal is contrary to the conservation and uses of the running surface water, and whether the withdrawal is detrimental to the environment or the public welfare.

J. The state shall be reimbursed at fair market value for all use or withdrawal of running surface water from bodies of water managed by the Department of Wildlife and Fisheries and determined by the office of fisheries to be negatively impacted by invasive aquatic vegetation. Fair market value as used in this Subsection shall be at a rate of not more than fifteen cents per thousand gallons, and shall not include the economic development, employment, and increased tax revenues created by the activities associated with the withdrawal of running surface water.

K. All monies collected by the state pursuant to this Chapter as a result of the use or withdrawal of surface water shall be deposited into the Aquatic Plant Control Fund as established in R.S. 56:10.1, and shall be used for the treatment of aquatic weed, preferably on the body of water from which revenues were generated.

Acts 2010, No. 955, §1, eff. July 2, 2010; Acts 2012, No. 261, §1; Acts 2014, No. 285, §1; Acts 2014, No. 556, §1; Acts 2016, No. 248, §1; Acts 2016, No. 430, §2.

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# Louisiana Water Resources Commission

December 6, 2017

## A RESOLUTION

WHEREAS, Louisiana enjoys an abundance of surface water resources that has attracted interest in the past and likely will continue to be of interest in the future to public and private entities outside the State of Louisiana; and

WHEREAS, current state law, in particular Act 784 of 2012, sets forth certain approvals necessary to the sale of such surface water resources to out-of-state entities by the Sabine River Authority-Louisiana but does not provide for such approvals or processes from other state-owned water bodies; and

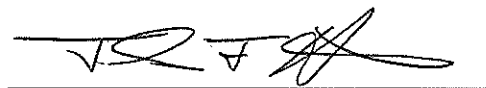
WHEREAS, prior to entertaining any potential offers to divert surface water to outside entities beyond its borders, the State of Louisiana must first have a good understanding of its own needs for population growth, economic development, environmental conservation, wildlife protection, and a sustainable coast, in accordance with the mandates of the state Constitution; and

WHEREAS, the Louisiana Water Resources Commission, with its breadth of experience as embodied in its members and set forth in its charge from the Legislature, has studied the major issues of water resource management in the state and worked to improve current management practices; and

WHEREAS, this experience has given the Water Resources Commission particular insight into Louisiana's water resource management needs.

NOW, THEREFORE, BE IT RESOLVED that the Louisiana Water Resources Commission does hereby authorize the Chairman to constitute at his discretion a work group of members to study existing state laws governing the sales of surface water to out-of-state entities and make recommendations for improvements and/or additional processes for such sales that will guarantee that the State of Louisiana not only protects its own needs but also receives a fair market value for its water resources, such study to be reported back to the Water Resources Commission for final approval before being forwarded to the Legislature.

On behalf of the Members of the Louisiana Water Resources Commission



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Thomas F. Harris  
Chairman

**Appendix D**  
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# WATER RESOURCE COMMISSION

## KEY QUESTIONS TO ANSWER – SUBMISSIONS

UPDATED JULY 6, 2018

### KEY QUESTIONS

#### PROCESS

- **Who are the different groups/experts that we should seek perspective and technical expertise from to better understand this issue?**
  - **Warren Founds**
    - Relative to the Sabine River and Toledo Bend Reservoir, the Louisiana and Texas Sabine River Authorities have been involved in this issue for the past 50 years. Texas Water Commission
  - **What role does CPRA, U.S. Army Corps of Engineers, Sabine River Compact Commission, and environmental groups need to have in this effort?**
    - **Warren Founds**
      - CPRA- probably interested in the maintaining minimum flows out of the rivers
      - U.S. Army Corps of Engineers – work on water withdrawal structures and pipelines in the waters of the U.S. are permitted through USACE, many times through the use of Nation Wide Permits (NWP). From Toledo Bend, the water withdrawals for more than one million gallons per day would also require approval from the Federal Energy Regulatory Commission (FERC) due to the Toledo Bend Project license.
      - Sabine River Compact Commission – whole purpose is to ensure the equitable distribution of the waters shared between the two states.
- **How can we use past research on this topic to supplement our process, findings, and recommendations? –**
  - **Warren Founds**
    - Relative to the Sabine River and Toledo Bend, many water studies have been done through the years to verify the yields of the project.
- **If pursued, how do we ensure this process is transparent? Do we need to develop a cost/benefit analysis?**
  - **Harry Vorhoff**
    - “The secretary [of DNR] shall ensure the proposed agreement is based on best management practices and sound science, and is consistent with the required balancing of environmental and ecological impacts with the economic and social benefits found in Article IX, Section 1 of the Constitution of Louisiana. In his evaluation, the secretary shall also ensure that all cooperative endeavor agreements to withdraw running surface water, or assignments of such, adequately consider the potential and real effects of such contracted activity on the sustainability of the water body and on navigation. Any assignment of any such cooperative endeavor agreement to withdraw running surface water may be approved by the secretary in the same manner as an agreement as provided in this Section, unless otherwise provided for by law.” La. R.S. 30:961(D).
  - **Warren Founds**
    - Bringing this issue to this commission is the start of transparency.
- **Will our recommendations be focused on just the Sabine River and Toledo Bend or does the focus needed to be expanded?**



- **Harry Vorhoff**
  - Pursuant to the U.S. Supreme Court decision in *Tarrant Regional Water Dist. V. Herrmann*, 133 S.Ct. 2120 (2013), states can enact laws that prioritize in-state uses and users over out-of-state uses and users. Sales of waters covered under the Sabine River Compact or Red River Compact may so prioritize in-state uses and users over out-of-state uses and users. Waters of the Mississippi River watershed, on the other hand, are not subject to an interstate compact and cannot be sold with a priority to in-state uses and users. The State should therefore exercise extreme caution before allowing any in-state or out-of-state sales of waters from the Mississippi River watershed.
- **Warren Founds**
  - Logically it seems that the water needs to the west of Louisiana would drive any future out of state water sales more so than any other direction. An out of state sale would probably be substantial in quantity, therefore requiring a “reservoir” verses a river to insure the water would be available at all times.
- **LDNR**
  - This working group’s recommendations should first and foremost be focused on the Sabine River and Toledo Bend as they appear to be the resources most likely to be sought for out of state use in the near future and the unique nature of both the reservoir and the compact commission suggest that recommendations concerning them may not in every case apply to other Louisiana watersheds. That being said it is hoped that the recommendations concerning the Sabine River and Toledo Bend will still be useful in the future when considering other watersheds.
- **Discussion from 6/20/2018 meeting**
  - Our recommendations will focus just on the Sabine River and Toledo Bend at this time. The project must be very clear on which areas are being focused on and which are not.

## LEGAL

### ■ What are the legal implications of selling surface water?

- **Harry Vorhoff**
  - The two major requirements for water sales are compliance with (1) the Public Trust Mandate pursuant to La. Const. art. IX § 1 and (2) the prohibition from donating state property pursuant to art. VII § 14.
- **Warren Founds**
  - Currently SRA has the statutory authority to sell water from the Sabine River and Toledo Bend Reservoir, as does the SRA of Texas.
- **Discussion from 6/20/2018 meeting**
  - The Sabine River is under an interstate compact with Texas. Focusing on the two areas makes sense for avoiding complications with having various other states and laws involved. Any contract would have to be subservient to clauses regarding the sale of water during shortages.

### ■ How much is the water worth? What is the right price point for out-of-state sales?

- **Harry Vorhoff**
  - It seems like an in-stream value must be determined and used to set a minimum value.
  - Public bidding seems like the best way to determine value.
- **Warren Founds**
  - In state, out of Toledo Bend, \$0.18/1000 gallons. The number used in the proposed sale from Toledo Bend in 2011 was \$0.28/1000 gallons, and the water was going to an area southwest of Dallas. Out of the Sabine River Diversion Canal system, the cost is the price of Toledo Bend water plus the operation cost associated with the Diversion Canal system. Currently the SRD water is \$0.23/1000 gallons and going to \$0.26/1000 gallons in 2019. The SRA Texas water rates from the lower Sabine River were in the same range but are increasing as a result of their building a new 50-million dollar pumping system to service the southeast Texas area.
- **Discussion from 6/20/2018 meeting**
  - \$0.15/1000 gallons was the number set 10 years ago and is currently \$0.18/1000 gallons in Toledo Bend. Customers in the Sabine River Diversion Canal pay \$0.18/1000 gallons plus delivery. Staff recommends sale price and presents it to the board for approval.



## ■ What does the law require related to price of surface water?

### – **Harry Vorhoff**

- LA. R.S. 30:961 requires that the State receive fair market value in any sale of public water. Fair market value should include, but not be limited to, the economic development, employment, and increased tax revenues created by the activities associated with the withdrawal of running surface water.
- “The state shall be reimbursed at fair market value for all use or withdrawal of running surface water from bodies of water managed by the Department of Wildlife and Fisheries and determined by the office of fisheries to be negatively impacted by invasive aquatic vegetation. Fair market value as used in this Subsection shall be at a rate of not more than fifteen cents per thousand gallons, and shall not include the economic development, employment, and increased tax revenues created by the activities associated with the withdrawal of running surface water.” La. R.S. 30:961(J).

### – **Warren Founds**

- For Sabine River and Toledo Bend, the price is established by the Sabine River Authority Board of Commissioners.

### – **Discussion from 6/20/2018 meeting**

- The price was increased for commercial users but not residents. Problems arise for setting and keeping a price since the minimum treatment of water has changed. As minimums for treating of drinking water increases, so does cost for treatment. Industry users pay more than municipal users as of now.
- Private rights of water are subordinate to the public good. It would be difficult to establish a market price for water because the contract would become subordinate to the overarching public interest.

## ■ What are the changes to public policy that would need to occur to make this possible?

### – **Warren Founds**

- Out of state sales from the Sabine River or Toledo Bend Reservoir are already possible in accordance with present law. Currently an out of state water sale would require approval of the Governor, the Senate Comm. On Natural Resources, the House Comm. On Natural Resources and Environment and at least two-thirds of the parish governing authorities within the territorial jurisdiction of the SRA. Proposed legislation would add the Water Resource Commission and delete the parish governing authorities' approval.

## ■ How does this impact the Sabine River Compact?

### – **Harry Vorhoff**

- The waters of the Sabine River are apportioned between Texas and Louisiana, pursuant to the Sabine River Compact, which constitutes state and federal law. In accordance with the U.S. Supreme Court's opinion in *Tarrant Regional Water Dist. V. Herrmann*, 133 S.Ct. 2120 (2013), Louisiana has the right to use its share of the apportioned water in any manner that it deems beneficial. This right likely includes the right to give preferential treatment to in-state water sales over out-of-state water sales.
- Pursuant to La. R.S. 38:2325, the Sabine River Authority has the independent authority to sell, utilize, distribute, or consume the waters over which it has jurisdiction, provided that, if any contracts and other agreements which provide for the sale, utilization, distribution, or consumption, are with entities located outside of the boundaries of the State, the written concurrence of the Governor is required. See Atty. Gen. Op. No. 10-0297.

### – **Warren Founds**

- The Louisiana Act of 1950, No. 261 created the Sabine River Authority to provide for works of public improvements including water supply for municipal, industrial, domestic, hydro-electric generation, and other useful purposes. In 1951, the Congress of the United States authorized the negotiation and execution of a Compact with respect to the apportionment of the waters of Sabine River. The Sabine River Compact, approved by the Legislature of the States of Louisiana and Texas as well as the Congress and President of the United States, provides for the equitable division of the waters of the Sabine River between the two States. The approval of the Compact permitted the harmonious development of the water resources either individually by the States within their respective boundaries or jointly in the State line reach as contemplated for the Toledo Bend Project. The Compact requires certain minimum flows at the Stateline and those flows are used to establish the annual yield for the Toledo Bend Reservoir. Louisiana and Texas equally share the water supply yield of just under 2 million-acre feet per year. Currently Louisiana and Texas sell approximately 27,000 and 3,000 acre-feet of water, respectively,



directly out of Toledo Bend each year. This approximately 30,000 acre-feet of water is equivalent to the water used in operating both units at the power house 27 hours

#### ■ **How does this impact agreements/contracts and relationships with the power companies?**

##### – **Warren Founds**

- The annual water supply yield with continued power releases under the current power sales agreement and minimum down stream flows is approximately 1.8 million acre-feet. Substantial water sales from Toledo Bend could happen with little to no effect on the existing power and water sales contracts. If water sales ever did impact generation schedules, the revenues from the water sales would allow for reduction or possibly the elimination of power sales completely. The power from the Toledo Bend Generation plant, while accounting for 50% of the Louisiana SRA income at Toledo Bend, is insignificant to the MISO power grid that distributes the power from Toledo Bend.

#### ■ **What does the ideal purchase agreement look like?**

##### – **How can it be structured to maximize benefits and minimize negative impacts?**

##### ▪ **Harry Vorhoff**

- The sale of reservoir water provides greater certainty that the water is “excess” and that it will be reliably provided. Additional storage capacity may be needed or advisable.

##### – **What limitations would need to be put in place to account for environmental/agricultural/wildlife concerns?**

##### ▪ **Discussion from 6/20/2018 meeting**

- In Arkansas, any time there is a water sale across watersheds/political boundaries, the seller must prove there is an excess of water. That has never been done in Louisiana, but the Arkansas surplus standard should be taken into account for water sales in this area.
- Working with the Coastal Master Plan would greatly benefit this project in reference to water flows, salt boundaries, agriculture and wildlife, and coastal industries.
- A focused and consistent story must be prepared with consistent rules and resolutions for the compact principles. The story must address all possible environmental, industrial, and wildlife concerns and solutions.

##### – **What would the agreement duration need to be to ensure it was worth it and provides sustainable funding?**

##### – **What would happen if Louisiana was facing a drought and needed to uphold the agreement to transfer water out-of-state?**

##### ▪ **Warren Founds**

- Depending on the size of the sale, the economics will probably drive the term to many years and possibly the elimination of hydropower from Toledo Bend. As per the FERC license, the mandated minimum downstream releases would not change and the obligations to the downstream customers would continue to require additional releases during periods of low flows in the river. Even in an extreme drought situation, Toledo Bend would still have plenty of water in the Reservoir to supply a large water sale. Recreation and local economies would probably suffer during an extreme drought situation and one of the uses of the revenues from the water sale could be to subsidize those businesses and areas affected by the adverse conditions.

##### ▪ **Discussion from 6/20/2018 meeting**

- A drought effect will affect people living around the lake thus leading to a recreational inconvenience. Recreational inconvenience could be an equitable claim but not legal claim.

#### IMPACTS (AGRICULTURAL/WILDLIFE/ENVIRONMENTAL)

#### ■ **What will be the impacts on coastal restoration efforts if less water/sediment is available?**

#### ■ **What is the minimum environmental flow that is needed to maintain fisheries and wildlife and avoid negative impacts?**



– **Kyle Balkum**

- The LA Department of Wildlife and Fisheries (LDWF) serves as a commenting agency on U.S. Army Corps of Engineers Section 10 permit applications for the withdrawal of water from waters of the U.S. and is a party to Cooperative Endeavor Agreements entered into between the Department of Natural Resources and surface water users. LDWF also administers the Scenic Rivers Act, maintains and operates wildlife management areas and refuges, and manages resources within game and fish preserves. Whether our role is regulatory in nature or as land stewards, we are often concerned with potential impacts of over-pumping surface water. Over-pumping may result in drastically reduced water levels, which could affect both navigation and biotic features, especially during low flow or drought events. Long-term or multiple consecutive withdrawals may significantly impact natural flow regimes and thereby cause severe ecological degradation. In addition to changes in water quantity, the proposed activity could also result in changes to water quality and temperature. In an effort to minimize these types of impacts, if authorization to withdraw water is granted, LDWF recommends that withdrawals be limited to no more than 20 percent of the daily flow (20POF). In other words, 80 percent of ambient modeled flow should remain in the stream. Also, the applicant shall not be allowed to pump if water levels drop below monthly 7Q2, the critical low-flow.
- Natural flow regimes (magnitude, duration, frequency, timing, and rates of change without withdrawals or returns) are important in maintaining instream, riparian, and floodplain ecosystem diversity and resilience (Richter et al., 1997; Poff et al., 1997; Bunn and Arthington, 2002; Postel and Richter, 2003; Arthington et al., 2006). The most effective mechanism for resembling a natural flow regime in altered river systems is to use a POF approach (Richter et al. 2011). Percentage of flow (POF) approaches allow for variability and more natural flow regimes to persist, unlike utilizing minimum flow thresholds alone. A 10% flow alteration is generally seen by experts as likely to have negligible impact for most taxa, stream types and hydrologic conditions (Acreman and Ferguson, 2010); however, adverse resource impacts are predicted to occur on most types of rivers with withdrawals greater than 17–25% of index flow (Richter et al., 2011).
- The 20 POF limit is based on a presumptive standard and intended for application where in-depth assessments of environmental flow needs cannot or have not been completed. Many states have adopted similar standards/approaches. The POF limits which are required by other states, countries, and authorities typically range from 10–20% (Richter et al. 2011). A moderate level of protection is provided when flows are altered by 11–20%, while alterations greater than 20% will likely result in moderate to major changes in natural structure and ecosystem functions (Richter et al. 2011),
- In real world implementation, the time step might be daily, or weekly “instantaneous” flow calculations. It could be modeled or based on the previous day’s or week’s data. Although, admittedly, current data gaps would make accurate modeling difficult in many basins, Louisiana’s new interagency Watershed Program will be filling many of the existing gaps over the next several years (conversations with program staff). In the meantime, extrapolation, estimation, and best professional judgement can be allowed.
- Percentage flow-by should be combined with a critical low-flow component that is intended to protect the aquatic ecosystem during periods of drought (hence the 7Q2 no-pump requirement described above).

– **Warren Founds**

- All stakeholders were consulted in the relicensing of the Toledo Bend project and these items were considered and addressed as part of the Toledo Bend Project new license.

■ **What is the minimum water level needed to sustain reservoirs?**

– **Warren Founds**

- Toledo Bend’s full pool level is 172’ MSL. Louisiana law limits power generation below 168’ MSL, and 162’ MSL is the lowest level to accomplish power generation. In the 50 plus years of Toledo Bend history, the reservoir reached 159.4’ MSL during a period of drought. Water can be released through the spillway down to elevation 145’ MSL and through a sluice way at elevation 100’ MSL. Normal operation is between 172’ and 168’ MSL. Toledo Bend was designed to operate between 162’ MSL and 172’ MSL. In the past 50 years the reservoir dipped below 162’ less than 1% of the time, below 165’ less than 4%, and remained above 168’ more than 75% of the time.



■ **How do the impacts of constant daily withdrawals change over the course of a year (i.e. are the impacts to the environmental resources and on the user groups different during seasonal high water versus seasonal low water)?**

– **LDNR**

- If we are focusing on constant withdrawals over the course of a year from, for instance, the Toledo Bend Reservoir, the answer is that for an average year there is no substantial change on the water level within the reservoir [levels remain at or near pool state (i.e. storage at full capacity)] and therefore a constant withdrawal would ordinarily not cause concern during the year. However, there could be an irregular drop in reservoir water levels due to extreme drought, in which case withdrawals during that drought period could potentially have detrimental impacts on certain activities such as recreational use.

■ **Is a constant daily or weekly withdrawal volume more or less impactful than a larger withdrawal over a shorter period of time (e.g. seasonal withdrawals)?**

– **LDNR**

- Constant withdrawal would likely be made at a lower withdrawal rates compared to sporadic or seasonal withdrawals. It should also be noted that sporadic or seasonal withdrawals would likely be made during periods of higher demand which generally should coincide with seasonal low water levels. Again, if we are speaking only of the Toledo Bend Reservoir, it is likely that out-of-state demand would occur during periods of extended drought [such a drought (e.g. 2011) would most likely encompass western Louisiana], but such a withdrawal could theoretically have negative impacts within the reservoir and down-stream (such as recreational use). As to either the upper or lower 2 reaches of the Sabine River, a minimum flow is needed for environmental/ecological reasons as well as for various uses of the river and so hard pumping over a shorter period of time would be less preferable especially if the river is experiencing low water conditions already. It must be stressed that the sensitivity levels of other water bodies vary widely and very few water bodies can handle large volume withdrawals to the same extent as the Toledo Bend Reservoir. It should be noted that the flow through the dam and upstream of the reservoir is regulated by the Sabine River Compact (<http://www.legis.la.gov/Legis/Law.aspx?d=95024>) and the Toledo Bend Dam operating guide (<http://www.srala-toledo.com/page.aspx?menuId=28>).
- Finally, we attached a power point presentation by Thomas Van Biersel of our Office of Coastal Management on the Current Status of Interstate Water Supply Diversion from the Lower Mississippi River.
- LDNR would be happy to present or answer any questions on its surface water program at the next meeting and staff look forward to sharing their experiences and knowledge with the group.

– **Warren Founds**

- The operation of Toledo Bend is designed to take advantage of the seasonal flows in accommodating the purposes of the project. The operation guide draws the reservoir down through generation and minimum daily spillway flows in the summer months as part of the power sales agreement. This lowering allows for a certain amount of guaranteed generation each year and also makes room to store inflows from the Spring rains. The fluctuation also is recommended for the fisheries aspect of the reservoir. If a large water sale was spread evenly throughout the year, some yearly fluctuation would still be recommended for the other positives it provides to the operation. The goal of the operation is to meet all the demands of the project (water conservation, water sales, economic development, environmental concerns and recreation) in the reservoir and downstream of the dam, and avoid spilling water as much as possible.

■ **What are the potential impacts to landowners and residents that use the body of water for recreation?**

– **Paul Frey**

- I am a bit perplexed as to what landowners we are identifying other than residents or camp owners that have property that is adjacent to the body of water. Those that would use the water to recreate that have adjacent boat slips could face potential issues if drawdowns prohibited getting their boats into the water. Other than that, I don't see a recreational issue from the landowner side other than if the water flows over the landowner's property.

– **Warren Founds**

- Depending on the volume of the water withdrawn, whether or not power generation was replaced or eliminated, and the weather conditions, the vast majority of time there would be a very limited effect on recreation.





### ■ How do we guarantee there is enough water to meet the agricultural needs?

#### – Warren Founds

- From Toledo Bend and the Sabine River Diversion system, agriculture customers, although receiving reduced pricing, are an extremely small portion of current water sales.

### ■ How could the sale of surface water impact the other rivers in the state?

#### – Warren Founds

- The only river that could be impacted by a water sale from Toledo Bend is the lower Sabine River, and again that is governed by the Sabine River Compact and operations under the two Sabine River Authorities in compliance with their FERC license

### ■ Is there enough water to meet the needs of power companies and meet the demand of out-of-state sales?

#### – Warren Founds

- The simple answer is yes, under the vast majority of situations and quantities of water that possibly would be considered for out-of-state sale. The Sabine River Authorities, through the Sabine River Compact, have had and continue to have discussions relative to large water sales (200,000 acre-feet/year, approximately 10% of annual yield) from Toledo Bend. In that these type sales under certain conditions could possibly affect reservoir levels and the local economy of the entire area, the benefit of a sale should go to both States to help compensate those areas. The reality of the issue is that any future large water sale is probably going West. Texas is already in control of half the annual water yield from Toledo Bend and will one day contract for its sale. Hopefully through the Sabine River Compact and negotiations with Sabine River Authority of Texas, Louisiana SRA will be able to share in that sale. The value of water sold for domestic or industrial use, under the current price for water, is approximately 18 times more valuable than the revenue derived from the same quantity used for power generation. The Toledo Bend Power Sales Agreement of the past 50 years has just ended. The two Sabine River Authorities have just signed a new power sales agreement (only 5 years) that will end in 2023. The cost of the hydropower with all the associated regulations, compared to the current market price for electricity did not give the Sabine River Authorities much room for negotiation resulting in the short contract. With such a short time contract, a future water sale could be accommodated in a timely manner. Any water sale of significant size would require the construction of a pipeline and more likely than not, many years to permit and construct. Revenues from a large water sale could easily replace the required funds to operate Toledo Bend Reservoir that are currently supplied by water used for power generation

### ■ How does the sale of surface water impact the river authorities?

#### – Warren Founds

- Currently water sales from Toledo Bend supply less than 20% of the annual budget to operate the Toledo Bend Project. Power sales from the hydro-electric generation are less competitive in the power market due to the low cost of natural gas fired stations. Currently power sales supply over 50% of the revenues required to operate the Toledo Bend project. A large water sale could replace the power sales revenue. The goal would be to attract a large sale that would be shared by both Authorities, still maintain a reserve for future use, and not compromise the other economic attributes of the Toledo Bend Reservoir to the State.

## BENEFITS

### ■ What are the economic development opportunities made available through the sale of surface water?

#### – Warren Founds

- Funds to support the Project and drive the economies of surrounding areas and the State.

### ■ Who benefits from the increased revenues? How will these revenues be used?

#### – Warren Founds

- Depending on the how the Project is viewed, the benefits could be local or statewide.

### ■ Could the increased revenues be used to benefit residents that use/depend on Sabine River and Toledo Bend?



– **Warren Finds**

- The current revenues coming to the Sabine River Authority already benefit those areas adjacent to the Sabine River Authority Operations through employment and increased services in those areas. The economic effect of the current SRA operations is beneficial to the State through, not only thousands of jobs related to water sales and recreation, but through the economies of these areas and their effect on the State economy. Any additional revenue that can be used to sustain or increase that effect would benefit not only these areas but the whole State.

**Appendix E**  
Water Facts for Toledo Bend Reservoir  
**Page 19**

## Water Facts for Toledo Bend Reservoir and Sabine River

**Full Pool Capacity (172' MSL) – 4,476,951 acre-feet**

**Stop Power Generation (168' MSL) Capacity – 3,788,901 acre-feet**

**Drought Contingency Trigger (162' MSL) Capacity – 2,895,201 acre-feet**

**Minimum Downstream Releases – 161,840 acre-feet/year**

**Total Water Withdrawals Toledo Bend Reservoir – 36,647 acre-feet/year**

**Firm Yield of Toledo Bend Reservoir – 1,823,000 acre-feet/year**

**Average Toledo Bend Inflow – 3,919,200 acre-feet/year**

**Average Toledo Bend Generation – 2,440,429 acre-feet/year**

Current water withdrawal from Toledo Bend (Louisiana and Texas) totals 36,647 acre feet per year (approximately 100 acre feet per day) will result in a 3" reduction in the reservoir water level when at 162' MSL, less than 2 1/2" at the 172' MSL.

A one million gallon per day water withdrawal equals approximately 1120 acre feet per year. This 1120 acre feet per year is equal to the amount of water used to generate power for **1 hour** at the Toledo Bend Powerhouse with both units operating.

The amount of water used in **one day** (27,000 acre feet) to operate both generating units is equal to a 24 million gallon withdrawal every day for a year.

The minimum downstream releases of **161,647 acre-feet per year** equals 144 million gallons per day average.

Current withdrawals from Louisiana Sabine River Diversion equal approximately 55 million gallons per day (**approximately 62,000 acre-feet/year**), plant capacity 288 million gallons per day.

Current withdrawals from Texas Sabine River Diversion approximately 40 million gallons per day (**approximately 45,000 acre-feet/year**), new plant capacity 85 million gallons per day.

**Appendix F**  
Current Status of Interstate Water  
Supply Diversion from the Lower  
Mississippi River  
**Page 21**

# Current Status of Interstate Water Supply Diversion from the Lower Mississippi River

By:

Thomas P. Van Biersel  
Office of Coastal Management



Dear Governor;

Please find below a proposal for a major water project affecting your state. I have a pdf file of a powerpoint presentation and wish to share it with your staff. Please email me at your earliest convenience. Thank you.

#### PROPOSAL

Trans-Mississippi Water Authority

The central region of the United States, falling within the watershed of the great Mississippi River, experiences extreme water conditions, from great inundations to severe drought.

The present year, 2011, is a *Published: September 10, 2011 3:00 a.m.*  
of the Mississippi Watershed  
flooded and severely damaged

## Just move water to drought?

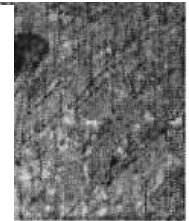
Several hundred miles to the

**Politics, costs keep H2O where it is**

The Trans-Mississippi Water

# The fight for water: Can the mighty Mississippi save the West?

## 2011 Texas Wildfires Burn as Northeast Gets 29T Gallons of Water [PHOTOS]



BY LAURA MATTHEWS 

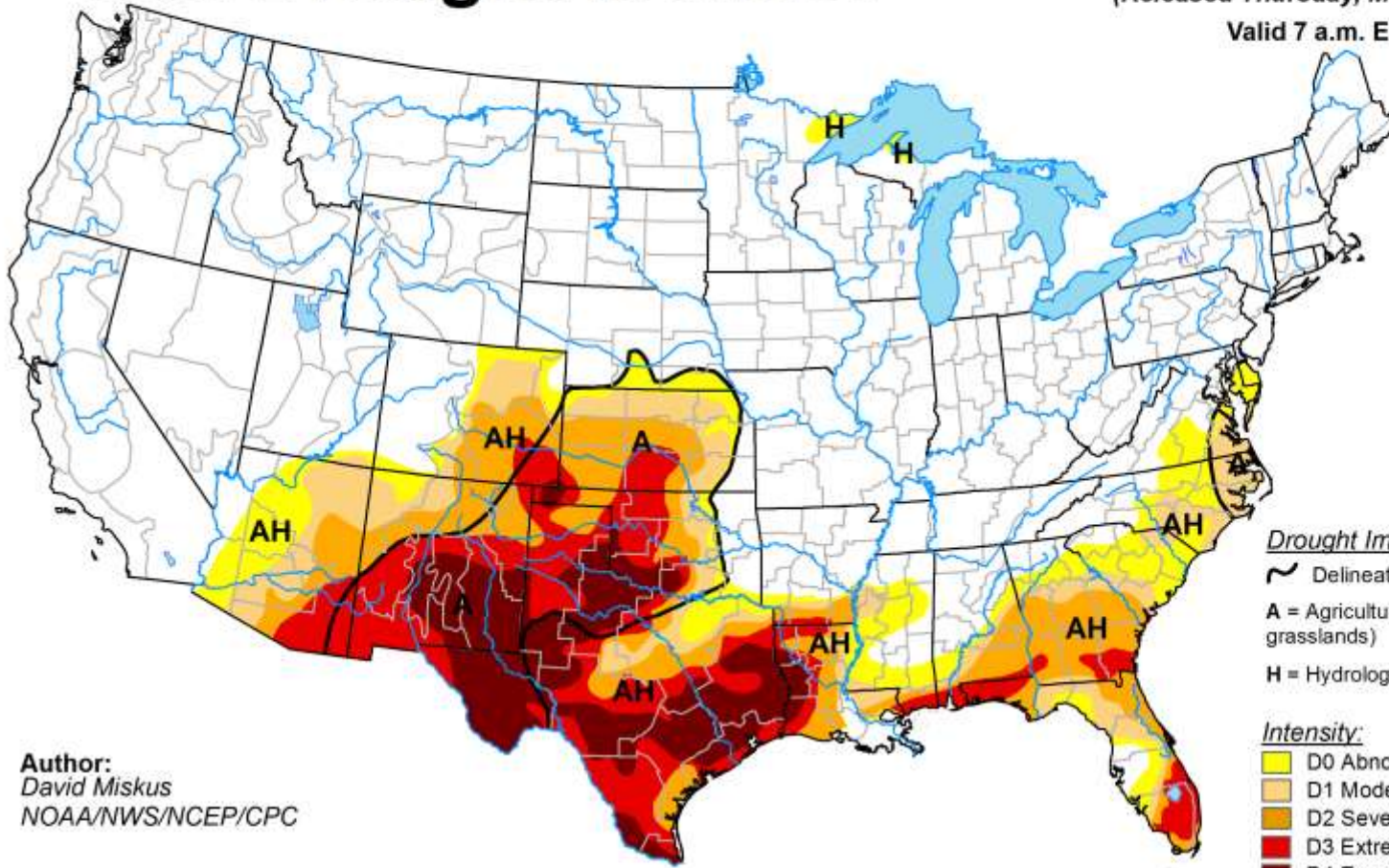
ON 09/09/11 AT 2:00 PM

## As Texas waits, water plan costs rise

By **Matthew Tresaugue** Updated 9:58 pm, Wednesday, December 14, 2011

# U.S. Drought Monitor

May 17, 2011  
 (Released Thursday, May. 19, 2011)  
 Valid 7 a.m. EST



Author:  
 David Miskus  
 NOAA/NWS/NCEP/CPC

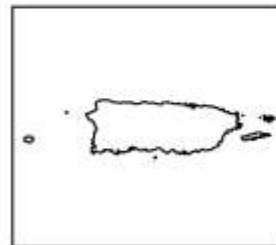
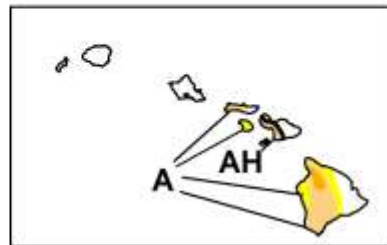
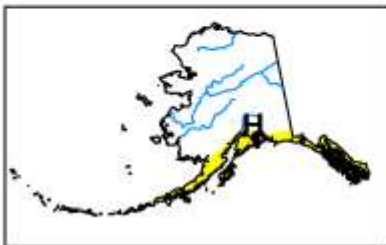
**Drought Impact Types:**

- ~ Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
- H = Hydrological (water)

**Intensity:**

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

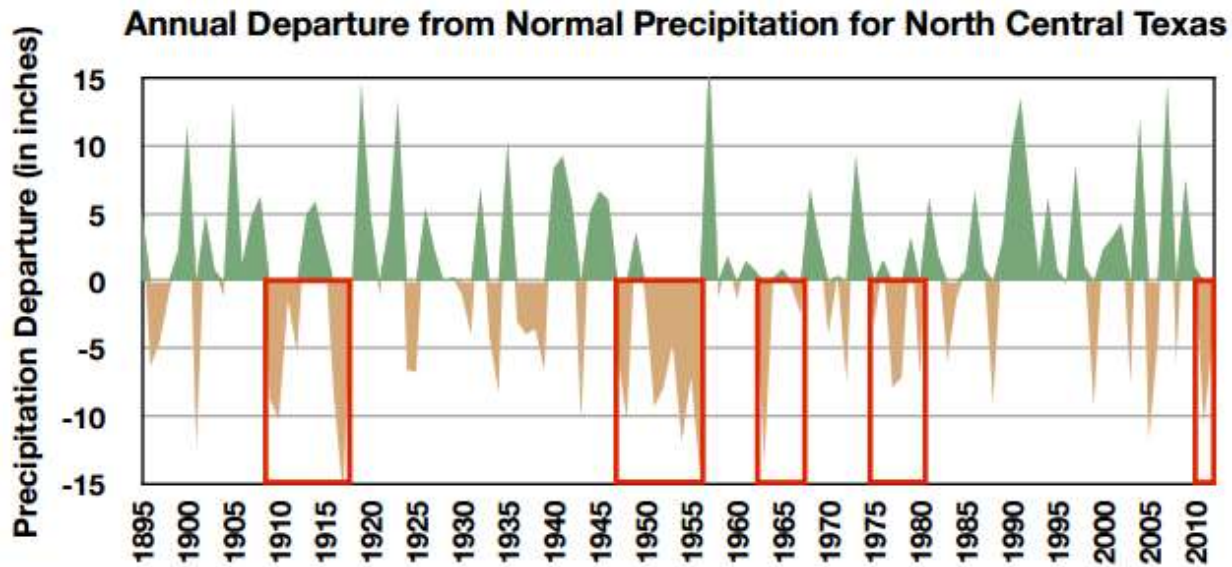




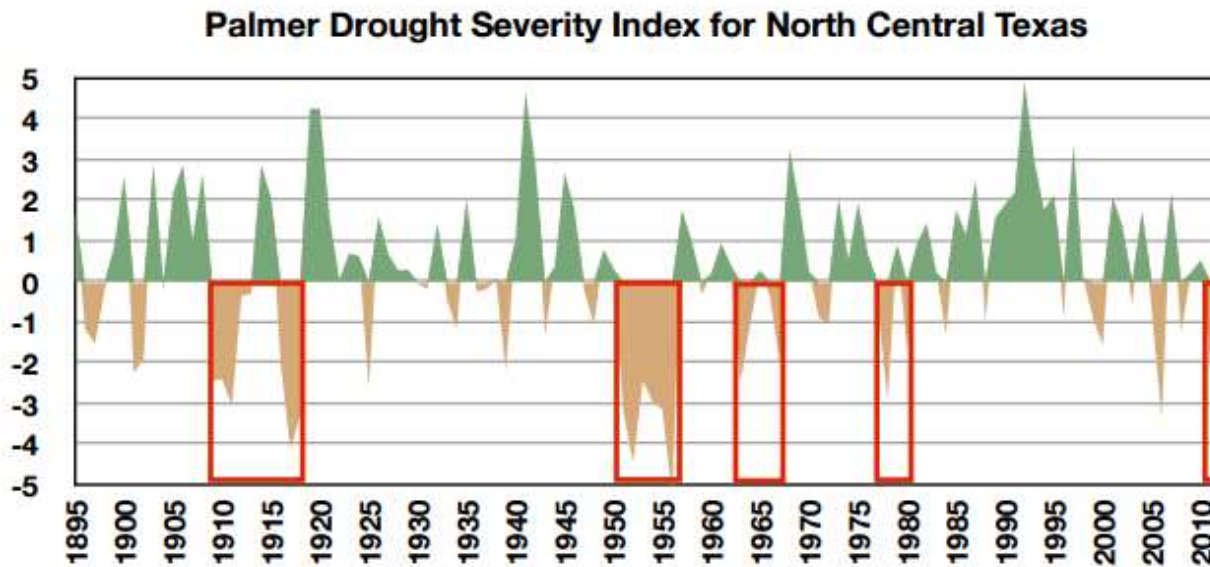


May 17, 2011  
Aqua MODIS  
satellite image

Friday, September 22, 2017



**Figure 4a.** Annual departure from normal precipitation (actual precipitation total for the year subtracted from the annual normal) for north-central Texas from 1895 to 2012.



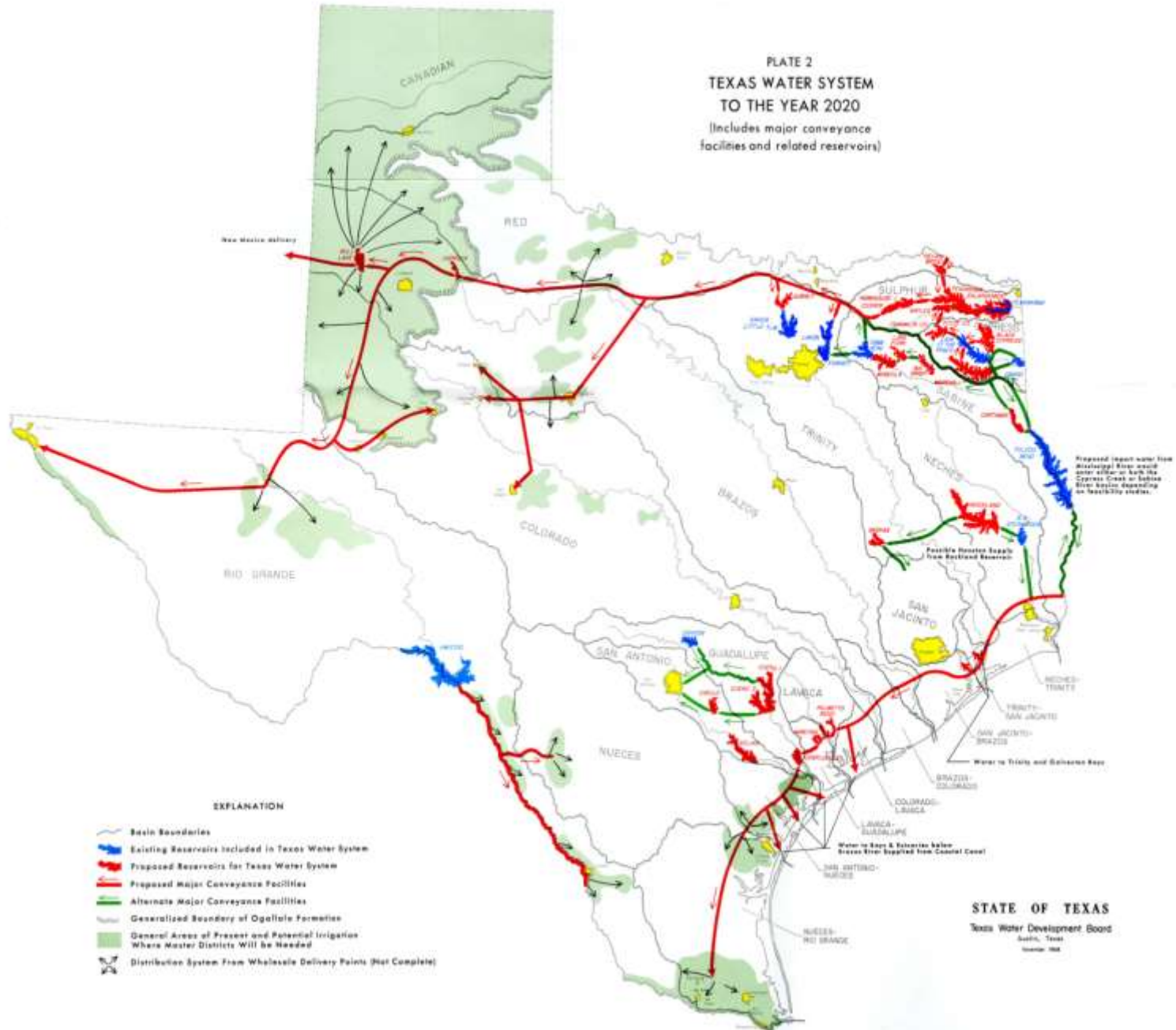
**Figure 4b.** Palmer Drought Severity Index for north-central Texas from 1895 to 2012.

# The 1968 Texas Water Plan

In the 1950's a seven-year dry spell “so momentous that it kicked off the modern era of water planning in Texas” struck hard, destroying nearly 100,000 Texas farms and ranches. In response the legislature founded the Texas Water Development Board and local river authorities that constructed 62 new dams and reservoirs over the next two decades.



PLATE 2  
**TEXAS WATER SYSTEM  
 TO THE YEAR 2020**  
 (Includes major conveyance  
 facilities and related reservoirs)



## Interstate System

In its preliminary plan released early in 1966, the Board described the imperative need for an out-of-State import of water if a major loss of irrigated agriculture were to be avoided in the West Texas area, notably the High Plains. With the support of the Board, local interests, the Texas Congressional delegation, and widespread support throughout Texas, the Congress of the United States authorized preliminary studies of importation sources and routes from the Mississippi River for these water-deficient areas by the Mississippi River Commission and the Lower Mississippi Valley Division of the U.S. Corps of Engineers participating with the Bureau of Reclamation.

Extremely preliminary indications, plus reconnaissance water studies and economic analyses made by the Board, suggest that feasibility studies of an import routing to Texas and eastern New Mexico from the lower Mississippi River are warranted. The route through Louisiana for such an import might follow the channel of the Red River, entering Texas in the Cypress Creek Basin, or might be a part of a fresh water coastal channel constructed westward to the lower Sabine River from the Mississippi River, or a combination of these two or other routings.

No decision on the relative merits of the routes, or a combination thereof, is possible at this time, and the Texas Water Plan is, therefore, so designed as to be compatible with alternative possibilities.

## Intergovernmental Relationships and Responsibilities

The State's participation in water planning and development is essential if Texas is to have a voice in the management of its water resources. The facilities required to supply water to Texas involving directly the State of Texas and the United States are:

(1) *The Interstate System*—those works required to divert from the Mississippi River and convey water to the Texas-Louisiana State line.

(2) *The Texas Water System*—those facilities within the State of Texas required to protect, conserve, transport, and distribute Texas' intrastate water resources and Texas' share of interstate waters for various purposes throughout the State, and to regulate and transport water from out-of-State sources brought to the State line through the Interstate System to users in Texas. The conveyance works of the Texas Water System would also transport water from the Mississippi River to the State of New Mexico.

### 3. Importation From Out-of-State

Importation of water from out-of-State sources is essential to the future development of Texas, and must begin no later than 1988. Planning indicates that by 2020 as much as 12 to 13 million acre-feet per year may need to be imported. Planning estimates indicate that water of suitable quality, in these quantities, can be made available from the Lower Mississippi River.

Such estimates are based on full consideration of the needs of the Mississippi River Basin States now, and in the future, including maintenance of quality and navigation. It is also planned that any project for exportation of Mississippi River water would yield benefits to the exporting State(s), as well as to Texas and New Mexico. Further, this source appears to offer the most economic benefits. In light of these factors the assumption has been made that water could be made available to meet Texas' requirements, and planning has proceeded on this basis.

It is probable that additional importation of water from some source may be required by 2020.

### 4. The Texas Water Plan

The Plan, the most extensive and complex water resource System yet conceived, is the most effective and economic means for meeting the future water needs of Texas for all purposes on a Statewide basis.

### 5. Participation by the State of Texas

The State must be a major participant with Federal and local agencies in planning, feasibility studies, financing and design, and in operation, maintenance, and management of the Texas Water System in order that the State's interest in its resources may be fully protected.

### 6. Cost

The cost of construction of the Texas Water System, at current construction cost levels, exclusive of out-of-State facilities for importation and appurtenant irrigation distribution systems, is estimated at about \$6.3 billion. Irrigation distribution systems, a local responsibility, are estimated to cost \$250-300 per acre to be irrigated.

These expenditures will be spread over a period of 50 years, with most of the capital costs incurred between fiscal years 1975 and 1990. The anticipated rate of cost escalation will be a significant factor in long-range financing planning.

### 7. Acreage Limitation

The present acreage limitation provisions of Federal Reclamation Law will need to be revised if the State is to have an economically viable agriculture in Texas under Reclamation projects.

### 8. Economic Justification and Financial Feasibility

The Texas Water System, including import from out-of-State sources, is economically justified on the basis of reconnaissance level studies. The financial resources of the irrigation areas to be served appear to be adequate to repay their share of the costs under current Federal repayment policies through water charges or a combination of water charges and general taxation.

## RECOMMENDATIONS

The Board recommends that the following actions be taken by the Governor and Legislature of the State of Texas, the President and the Congress of the United States, and local governmental agencies:

THAT THE GOVERNOR AND THE LEGISLATURE OF THE STATE OF TEXAS:

1. Adopt a plan for financing the State's share of the cost of the Texas Water System as a joint Federal, State, and local partnership undertaking and to provide additional financial

assistance to local political subdivisions for water supply projects; such plan to be submitted for approval by the voters at the 1970 general election.

2. Amend the Texas Water Development Fund Act to:

- (1) Eliminate the present provision for termination in 1982 of Texas Water Development Fund investments.
- (2) Remove the present limitation on the total amount of the Water Development Fund, the limitation on the permissible investment in a single project, and the limitation on the maximum aggregate investment in reservoir conservation storage facilities.

- (3) Remove the limitation on the coupon interest rate for Water Development Fund bonds from the present maximum of 4%.

3. Empower the Board to implement the Texas Water Plan, including authority to:

- (1) Participate in partnership with the United States Government, pursuant to appropriate statutory and contractual arrangements, in the design, construction, operation and maintenance, and management of the Texas Water System; such participation to be on the basis of ownership by the State of an undivided interest in the total System.

- (2) Enter into contracts with Federal, or with Federal-State agencies, to purchase water from out-of-State sources delivered at the State line.

- (3) Enter into cooperative agreements with the United States, local public agencies, and investor-owned utilities for financing, constructing, and operating facilities to generate and deliver pumping energy required for the Texas Water System.

- (4) Acquire by eminent domain lands necessarily required for water development project purposes proposed in the Texas Water Plan.

- (5) Preserve lands necessarily required for water development project purposes



A major obstacle to the plan's implementation was a report issued by the Bureau of Reclamation and the Mississippi River Commission in 1973.

The report found that excess water is available from the Mississippi River, but concluded that "while it is engineeringly feasible to divert water from the Mississippi River to the High Plains, the cost of moving the water would be very high and the environmental impacts to the Gulf area and along the diversion route could be significantly adverse."



## Quick facts

Texas' state water plans are based on future conditions that would exist in the event of a recurrence of the worst recorded drought in Texas' history—known as the “drought of record”—a time when, generally, water supplies are lowest and water demands are highest.

Texas' population is expected to increase more than 70 percent between 2020 and 2070, from 29.5 million to 51 million, with over half of this growth occurring in Regions C and H. Water demands are projected to increase less significantly, by approximately 17 percent between 2020 and 2070, from 18.4 million to 21.6 million acre-feet per year.

Texas' existing water supplies—those that can already be relied on in the event of drought—are expected to decline by approximately 11 percent between 2020 and 2070, from 15.2 million to 13.6 million acre-feet per year.

Water user groups face a potential water shortage of 4.8 million acre-feet per year in 2020 and 8.9 million acre-feet per year in 2070 in drought of record conditions.

Approximately 5,500 water management strategies recommended in this plan would provide 3.4 million acre-feet per year in additional water supplies to water user groups in 2020 and 8.5 million acre-feet per year in 2070.

The estimated capital cost to design, construct, and implement the approximately 2,400 recommended water management strategy projects by 2070 is \$62.6 billion.

If strategies are not implemented, approximately one-third of Texas' population would have less than half the municipal water supplies they will require during a drought of record in 2070.

If Texas does not implement the state water plan, estimated annual economic losses resulting from water shortages would range from approximately \$73 billion in 2020 to \$151 billion in 2070.

Through the SWIFT and other financial assistance programs, the TWDB has provided \$1.9 billion in financial assistance to approximately 60 state water plan projects recommended in the 2012 State Water Plan.



Texas Water  
Development Board

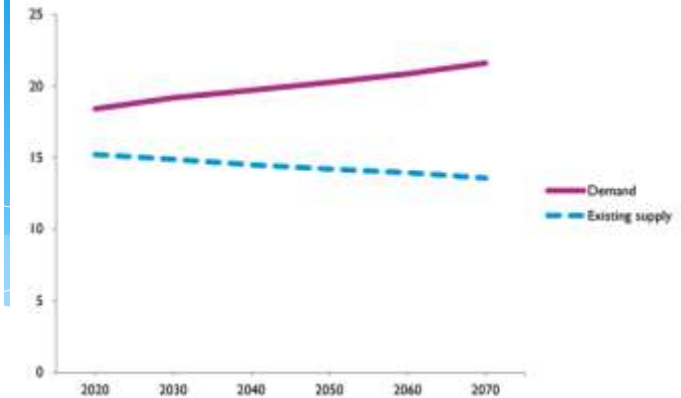
## How much water do we have now?

The existing water supply—categorized as surface water, groundwater, and reuse water—is projected to decrease approximately 11 percent, from 15.2 million acre-feet per year in 2020 to about 13.6 million in 2070 (Figure ES.3). For planning purposes, the existing supply represents water supplies that are physically and legally available to be produced and delivered with current permits, current contracts, and existing infrastructure during drought of record conditions.

Existing surface water supplies are projected to decrease by about 1 percent, from 7.5 million acre-feet per year in 2020 to 7.4 million in 2070 due to sedimentation and changes in water contracts.

Groundwater supplies are projected to decrease 24 percent, from 7.2 million acre-feet per year in 2020 to 5.4 million in 2070. This decrease is primarily due to reduced supply from the Ogallala Aquifer (as a result of its depletion over time) and the Gulf Coast Aquifer (due to mandatory reductions in pumping to prevent land surface subsidence). Policy decisions made by groundwater conservation districts through the groundwater management area joint planning process also resulted in numerous changes to groundwater availability.

Figure ES.3 - Projected annual water demand and existing water supply in Texas (millions of acre-feet)



## Do we have enough water for the future?

Because our existing water supply is not enough to meet our future demand for water during times of drought, Texas would need to provide 8.9 million acre-feet of additional water supplies, including in the form of water savings through conservation, to meet its demand for water in 2070. In the event of a recurrence of the drought of record in 2020, the state would face an immediate need for 4.8 million acre-feet per year in additional water supplies (Figure ES.4). Of that, 11 percent, (511,000 acre-feet) would be required for municipal water users, who face the largest water demand increase over the next 50 years. Total needs are projected to increase by 87 percent between 2020 and 2070, from 4.8 million to 8.9 million acre-feet per year. In 2070, 3.4 million acre-feet per year or, 38 percent of the total needs, is associated with municipal users.

Figure ES.4 - Projected annual water needs in Texas (millions of acre-feet)

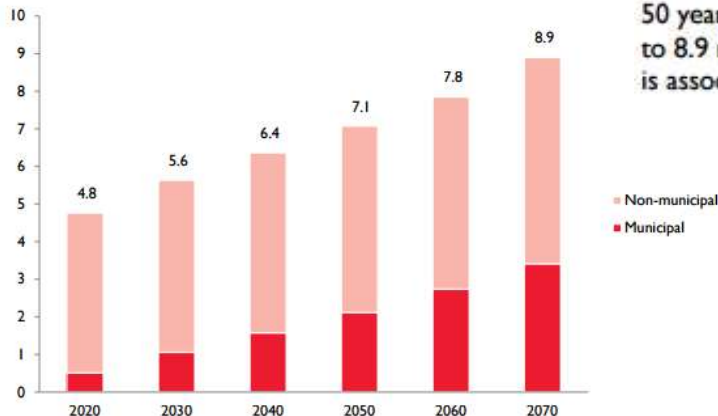


Figure 5.5 - Projected annual water demand by water use category (acre-feet)

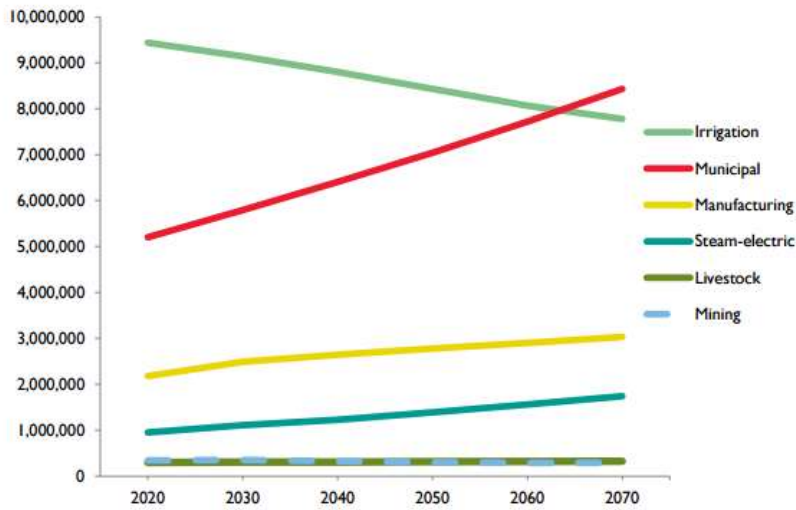


Figure ES.6 - Share of recommended water management strategies by water resource in 2070

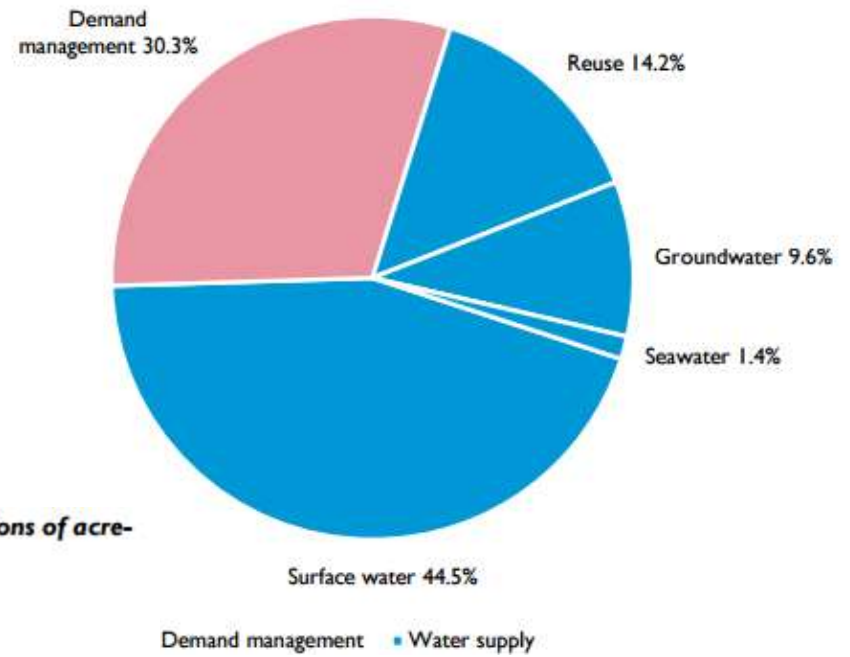
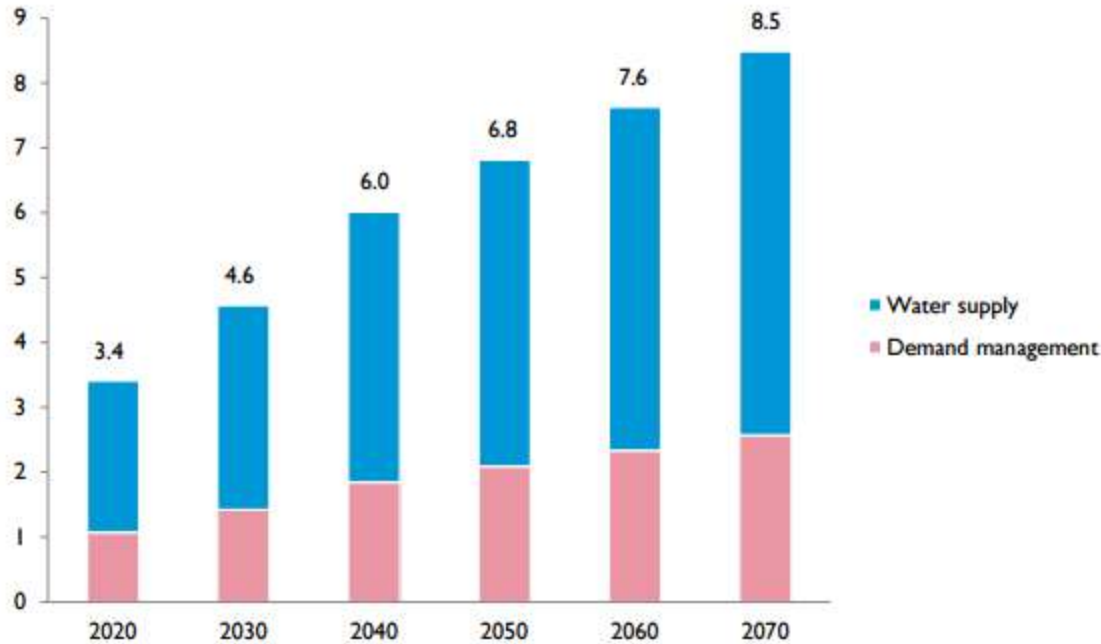



Figure ES.5 - Annual volume of recommended water management strategies (millions of acre-feet)





Under Texas law, water may be transferred from one river basin to another if the water supply involved will not be needed during the next fifty years for "reasonably foreseeable water supply requirements within the river basin of origin."

# TX HB 3298 of 2015

By: Larson, Frank, Lucio III, Kacal, Keffer,  
et al.

H.B. No. 3298

H.B. No. 3298

## A BILL TO BE ENTITLED

### AN ACT

1  
2 relating to a study conducted by the Texas Water Development Board  
3 regarding the development of a market and conveyance network for  
4 water in this state.

5 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF TEXAS:

6 SECTION 1. LEGISLATIVE FINDINGS. The legislature finds  
7 that:

8 (1) water is a valuable part of the natural capital of  
9 the state, serving vital economic, environmental, and social  
10 purposes;

11 (2) the growing water needs of the state require using  
12 water in an efficient manner and increasing the economic,  
13 environmental, and social productivity of water;

14 (3) the efficient use of water often requires the  
15 reallocation of water entitlements from one water user to another  
16 and the conveyance of water from one geographic location to  
17 another; and

18 (4) improving the efficient use of water in the state  
19 may be promoted by improving the laws regarding water transfers and  
20 markets and by using an integrated network of both natural and  
21 constructed water conveyance infrastructure.

22 SECTION 2. DEFINITION. In this Act, "board" means the  
23 Texas Water Development Board.

24 SECTION 3. STUDY. (a) The board shall conduct a study to

1 evaluate:

2 (1) improvements to:

3 (A) the transfer of water entitlements; and

4 (B) the functioning of statewide and regional  
5 water markets; and

6 (2) the opportunities for and barriers to the  
7 potential establishment of a statewide or regional water grid,  
8 including an integrated network of natural and constructed works,  
9 including pipelines, pumping stations, and reservoirs, for the  
10 conveyance of water between and within river basins, water sources,  
11 and areas of water use in the state.

12 (b) In conducting the study, the board shall:

13 (1) review studies previously conducted as part of the  
14 state water planning process or otherwise;

15 (2) identify the necessary and useful features of an  
16 efficient market for water, including water rights, institutions,  
17 and infrastructure;

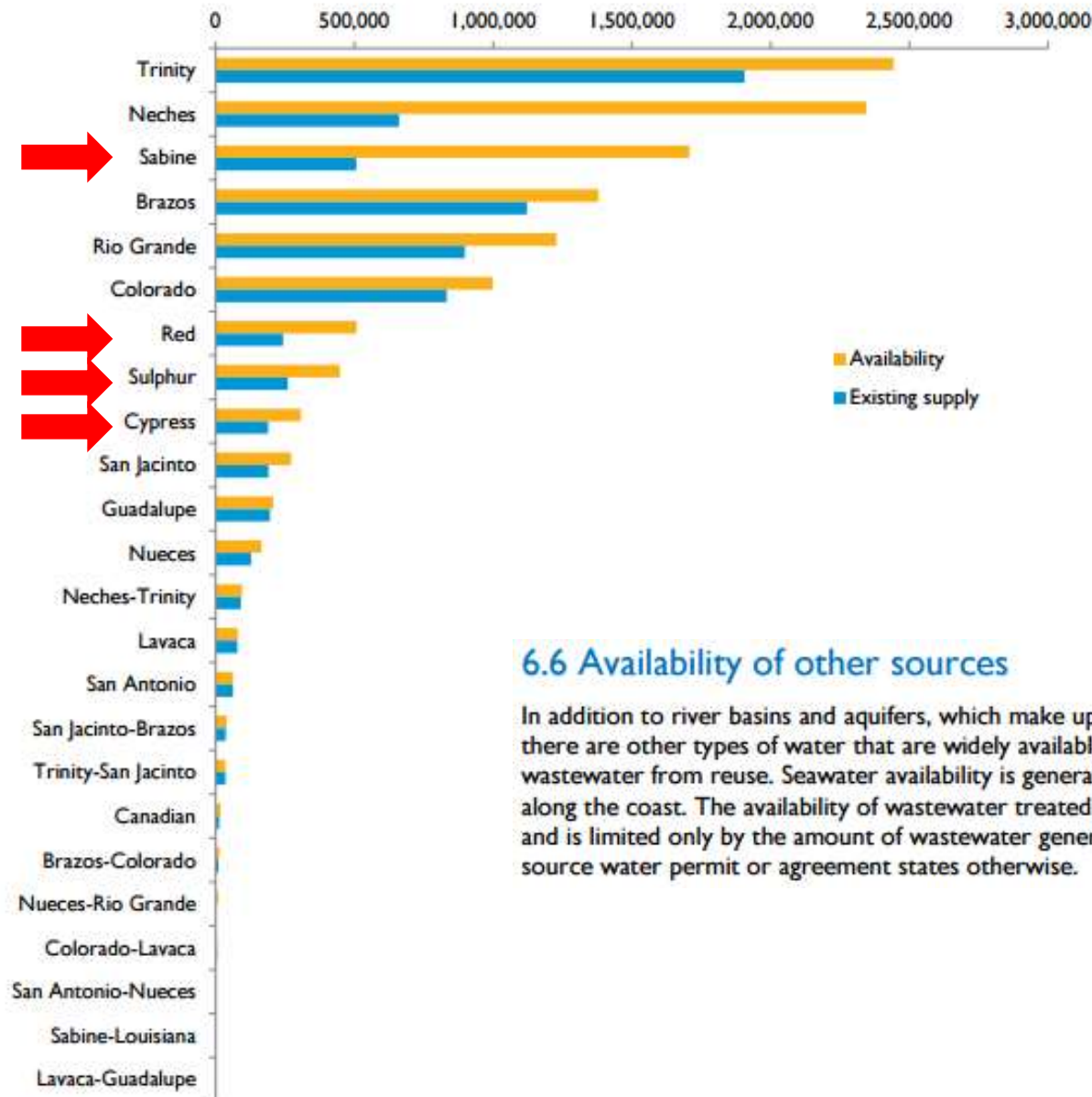
18 (3) examine case studies of water markets in other  
19 jurisdictions both within and outside the United States to  
20 determine best practices and risks described in those case studies;

21 (4) identify and evaluate potential sources of water  
22 for the market and the water grid;

23 (5) identify and evaluate potential areas of use for  
24 water delivered by the water grid, including areas of water use for  
25 municipal, industrial, agricultural irrigation, recreational,  
26 environmental, and other purposes;

27 (6) evaluate alternative facilities with varying

**Figure 6.3 - Annual surface water availability and existing surface water supplies by river and coastal basin in 2020 (acre-feet)**



### 6.6 Availability of other sources

In addition to river basins and aquifers, which make up the vast majority of Texas' water resources, there are other types of water that are widely available for use, including seawater and treated wastewater from reuse. Seawater availability is generally limited only by the ability to legally access it along the coast. The availability of wastewater treated for reuse, on the other hand, changes over time and is limited only by the amount of wastewater generated by water users at any given time unless a source water permit or agreement states otherwise.

# Interstate Diversions

LA DNR has received two informal inquiries:

- Atchafalaya River to Southeast Texas
- Mississippi River to Northeastern Texas

ANRC has received one application



# Arkansas Natural Resources Commission



J. Randy Young, PE  
Executive Director

101 East Capitol, Suite 350  
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E-mail: [anrc@arkansas.gov](mailto:anrc@arkansas.gov)

Mike Beebe  
Governor

## APPLICATION FOR NON-RIPARIAN WATER USE FOR GAS WELL FRACTURE STIMULATION AND HYDROSTATIC TESTING OF PIPELINES

### APPLICANT

Name: William Bing  
 Company: BWG Corp. (an Arkansas Company)  
 Address: C/O William "Wayne" Bing  
12824 Whisper Willow  
Haslet, TX 76052  
 Phone #: ( 318 ) 283-2391  
 Cell #: ( 318 ) 669-0523  
 Fax #: ( ) \_\_\_\_\_  
 E-Mail: Bingwmw@gmail.com

DECEIVED  
AUG 20 2014  
ANRC  
*[Signature]*

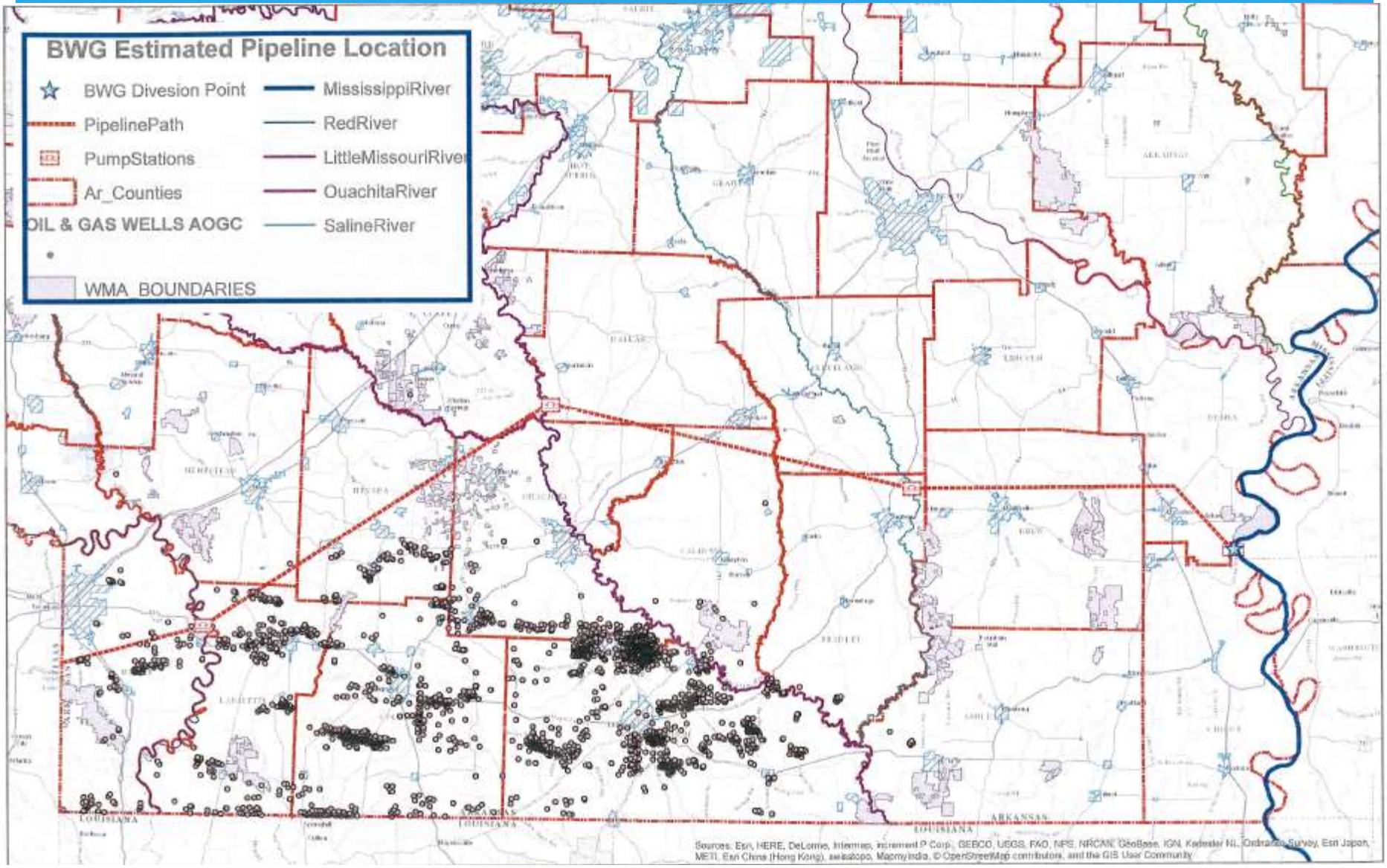
*Official Use Only*  
 File #: MN08-14  
 Issue Date: \_\_\_\_\_  
 Expiration: \_\_\_\_\_

- 520,000 gpm
- 840,000 acre-ft per year
- 75+ years
- Twin 10' pipes
- ~\$1,000,000,000



## BWG Estimated Pipeline Location

- ☆ BWG Diversion Point
- Pipeline Path
- ☐ Pump Stations
- ▭ Ar\_Counties
- OIL & GAS WELLS AOGC
- ▭ WMA BOUNDARIES
- Mississippi River
- Red River
- Little Missouri River
- Ouachita River
- Saline River



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAM, GeoBasis, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), Swisstopo, Mapbox India, © OpenStreetMap contributors, and the GIS User Community

# Arkansas Natural Resources Commission

- ANRC uses an “excess surface water determination” to evaluate non-riparian permit requests
- The 1985 and 2014 Arkansas Water Plans support the importation and delivery of excess surface water to meet Arkansas regional water needs
- 2014 Arkansas Water Plan does not include the Mississippi River as a source of excess water
- Contacted Louisiana and Mississippi agencies
- Consulted with the US Army Corps of Engineers Vicksburg District

transfer. For the reasons below, I believe that the State of Louisiana should urge the State of Arkansas to deny or table this and future permit applications for the out-of-state [basin] transfer of Mississippi River water, at least until a comprehensive water budget on the lower Mississippi River is developed that embraces the interstate nature and value of the Mississippi River and other interstate waters. Simply put, while it may be appropriate to consider transfers of "surplus" waters at some time, there is presently no way of determining that surplus flows exist. Given the transcendent importance of adequate

# Louisiana's Comments

A single action of this magnitude on the Mississippi River may result in an unquantifiable, very small negative impact to available sediment and water resources; more projects of this magnitude (or larger) may cumulatively reduce the water and sediment resources available for Louisiana's coastal restoration program.

potential impacts including those that would adversely impact Louisiana agriculture, aquaculture, and forestry industries. Our principal concerns include increased adverse impacts on shipping and increased dredging as well as port and dock maintenance.

indicates that a 10-foot diameter pipe will be used to transfer the water. Based on LDEQ's review of the information provided, decreased downstream water availability potentially affects:

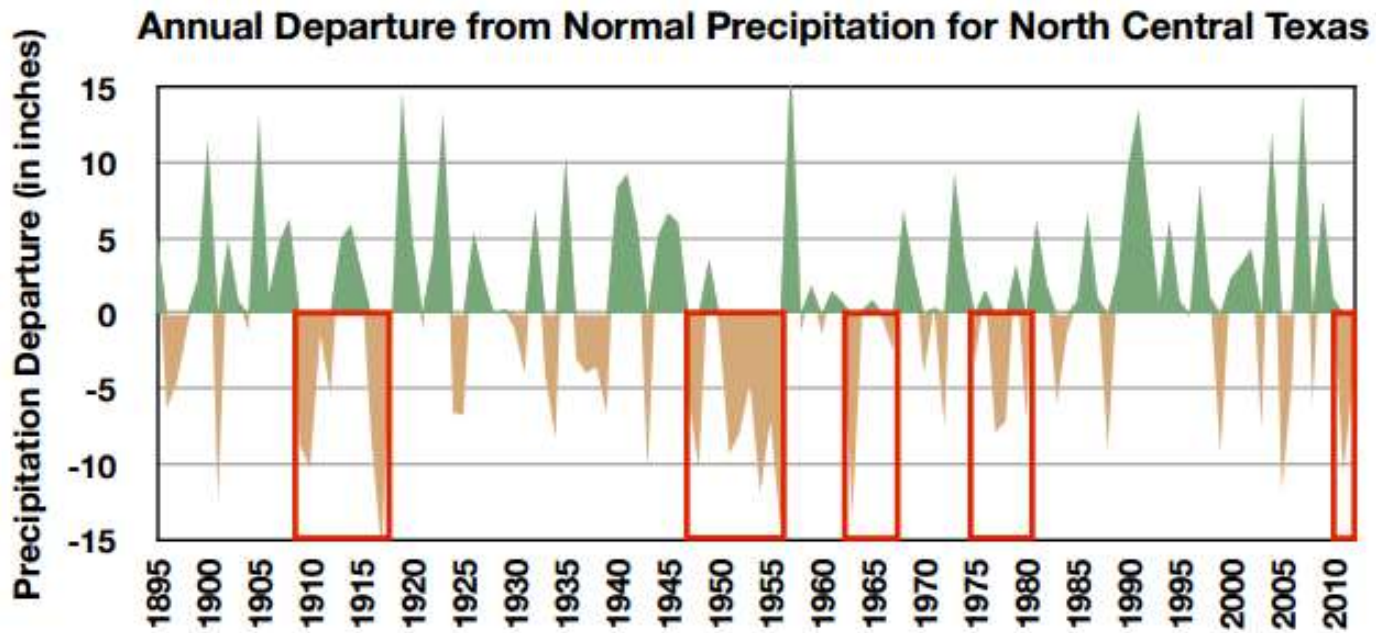
The reported withdrawal rate of 1,160 cubic feet per second represents less than one percent of typical flow in the Mississippi River, and as such may pose no significant concern in and of itself. However, during periods of low flow, drinking water utilities in the lower reaches of the Mississippi River frequently experience elevated salinity levels as a direct result of upstream migration of the saltwater wedge. The presence of this saltwater wedge has in the past resulted in the temporary closure of drinking water intakes. LDHH is concerned that cumulative effects of the proposed withdrawal and any other concurrent withdrawal activities may exacerbate such negative impacts to the drinking water supplies in the lower Mississippi River.

- Withdrawals for drinking water, industrial, and agriculture uses
- Diversions for coastal restoration efforts such as those for marsh/wetland creation/restoration and abating saltwater intrusion
- Other types of restoration projects (e.g. batture reforestation, floodplain connectivity, secondary channel diversification, recreational access, and enhancing main channel habitat diversity)
- Saltwater wedge/intrusion moving up Mississippi River
- Water quality
- Habitat
- Navigation (commerce and recreation)
- Docks (water surface elevation)
- Water intakes (depth of the intakes and water quality for facility cooling water, drinking water)
- Discharge pipes (depth of discharge pipes)
- Ferry ports (water surface elevation)
- Mixing zones
- Bridge pilings
- Levee stability
- Dredging
- Assimilative capacity
  - Increased potential for WQBELs (e.g. Hexachlorobenzene and Hexachlorobutadiene)
    - Current Permitting Flows on River
      - 7Q10 - 141,955 cfs
      - Harmonic Mean - 366,748 cfs
    - Potential new permitting flows based on 25% excess definition
      - 7Q10 - 106,466 cfs
      - Harmonic Mean - 275,061 cfs
- Potential to alter dynamics involved with Endangered Species evaluations
- Potential to alter dynamics involved with Entrainment/Impingement evaluations

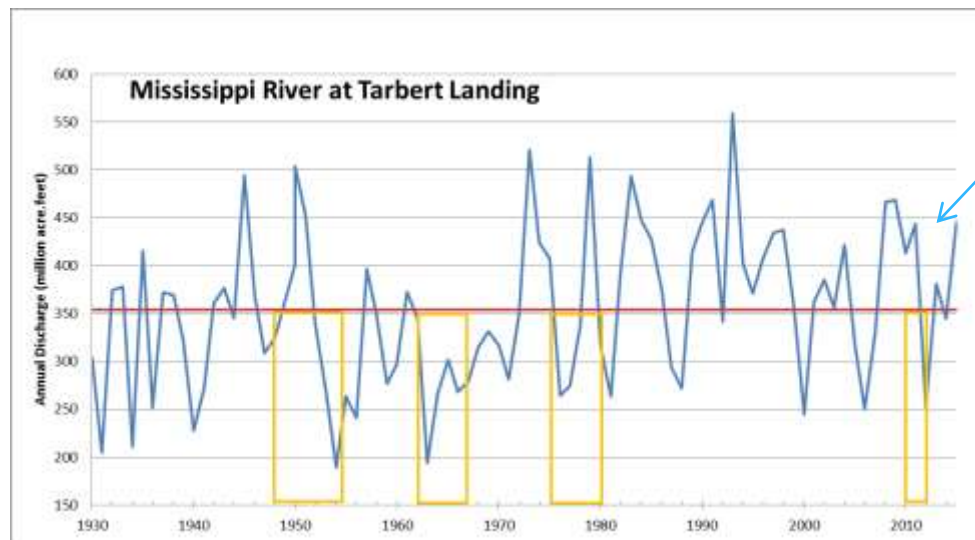
Numerous questions and concerns are raised by this proposal. Based on the information we have thus far, this activity, if permitted during low flow periods, may adversely impact (1) stream flow energy, sediment load and distribution, (2) public, riparian or agriculture water demand downstream of the pull point, (3) recharge of freshwater aquifers, and (4) result in further intrusion of saltwater up the Mississippi and Atchafalaya Rivers.

A permit authorizing a continuous 75+ year water withdrawal is not acceptable based on a lack of information and without proper contingency planning for the future. There has been no thorough or comprehensive evaluation of how factors such as drought, climate change, planned coastal freshwater diversions, and potential changes to river flow regimes (as compared to historic trends) in combination with the proposed water transmission pipeline may adversely impact commercial navigation, delta building processes (i.e., Atchafalaya), coastal wetland sustainability, fisheries and other resources.

The application refers to pipeline water diverted to points and municipalities across southern Arkansas. The effect of these diversions into southern Arkansas waterbodies has not been thoroughly evaluated. Such "supplemental" stream flows could impact Louisiana by spreading noxious and invasive species, altering stream flow regime and water quality, and affecting native aquatic organisms. Such supplemental stream flows shall not be allowed into streams that flow into Louisiana without eliminating the potential for such impacts.



**Figure 4a.** Annual departure from normal precipitation (actual precipitation total for the year subtracted from the annual normal) for north-central Texas from 1895 to 2012.



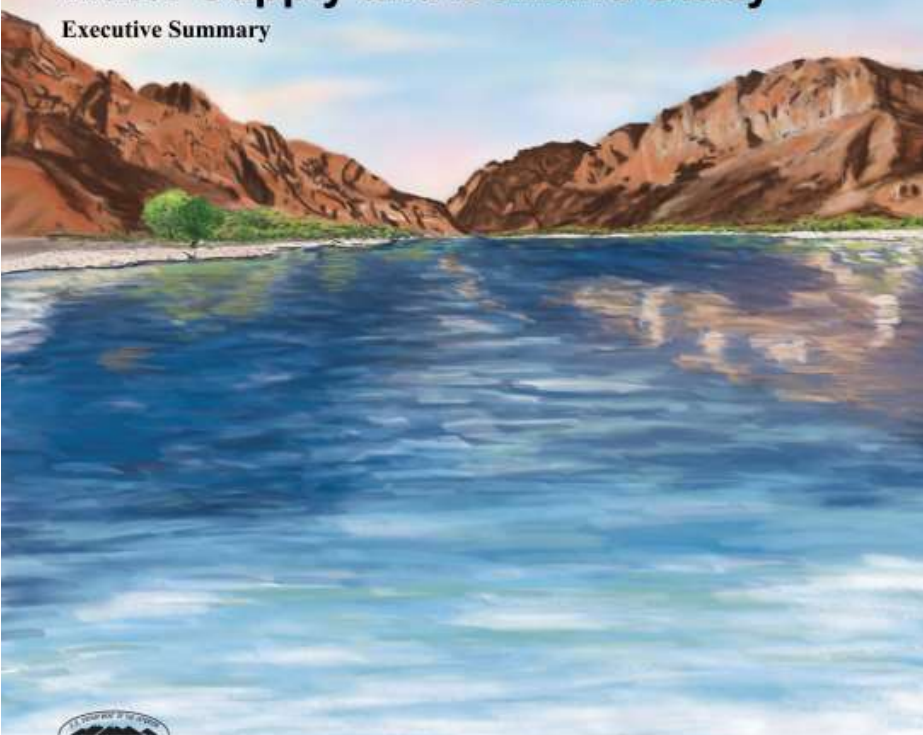
2011

# RECLAMATION

*Managing Water in the West*

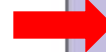
## Colorado River Basin Water Supply and Demand Study

Executive Summary



Summary of Representative Options Including Cost, Timing, Potential Yield, and Inclusion in Portfolios

Option Type	Option Category	Representative Option	Estimated Cost (\$/afy)	Years before Available	Potential Yield by 2035 (afy)	Potential Yield by 2060 (afy)	Option Included in Portfolio
Increase Supply	Desalination	Gulf of California	2,100	20 - 30	200,000	1,200,000	Portfolios A, B (up to 400 kafy)
		Pacific Ocean in California	1,850-2,100	20 - 25	200,000	600,000	Portfolios A, B (up to 400 kafy)
		Pacific Ocean in Mexico	1,500	15	56,000	56,000	Portfolios A, B
		Salton Sea Drainwater	1,000	15 - 25	200,000	500,000	All Portfolios
		Groundwater in Southern California	750	10	20,000	20,000	All Portfolios
		Groundwater in the Area near Yuma, Arizona	600	10	100,000	100,000	All Portfolios
		<b>Subtotal</b>					<b>776,000</b>
Reuse		Municipal Wastewater	1,500 - 1,800	10 - 35	200,000	932,000	All Portfolios
		Grey Water	4,200	10	178,000	178,000	Portfolio C
		Industrial Wastewater	2,000	10	40,000	40,000	All Portfolios
		<b>Subtotal</b>				<b>418,000</b>	<b>1,150,000</b>
Local Supply		Treatment of Coal Bed Methane - Produced Water	2,000	10	100,000	100,000	Portfolios A, B
		Rainwater Harvesting	3,150	5	75,000	75,000	Portfolio C
		<b>Subtotal</b>				<b>175,000</b>	<b>175,000</b>
Watershed Management		Brush Control	7,500	15	50,000	50,000	None
		Dust Control	220 - 520	15 - 25	280,000	400,000	Portfolios A, C
		Forest Management	500	20 - 30	200,000	300,000	None
		Tamarisk Control	400	15	30,000	30,000	Portfolios A, C
		Weather Modification	30 - 60	5 - 45	700,000	1,700,000	All Portfolios (up to 300 kafy)
		<b>Subtotal</b>				<b>1,260,000</b>	<b>2,480,000</b>
Importation		Imports to the Colorado Front Range from the Missouri or Mississippi Rivers	1,700 - 2,300	30	0	600,000	Portfolios A, B
		Imports to the Green River from the Bear, Snake <sup>1</sup> or Yellowstone Rivers	700 - 1,900	15	158,000	158,000	None
		Imports to Southern California via Icebergs, Waterbags, Tankers, or from the Columbia River <sup>1</sup>	2,700 - 3,400	15	600,000	600,000	None
		<b>Subtotal</b>				<b>758,000</b>	<b>1,358,000</b>





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HOUSE MEMORIAL 33

**52ND LEGISLATURE - STATE OF NEW MEXICO - SECOND SESSION, 2016**

INTRODUCED BY

William "Bill" R. Rehm

A MEMORIAL

REQUESTING CONGRESS TO FUND, AND THE BUREAU OF RECLAMATION, THE  
ARMY CORPS OF ENGINEERS AND THE FEDERAL EMERGENCY MANAGEMENT  
AGENCY TO DESIGN AND BUILD, AN AQUEDUCT FROM THE MISSOURI OR  
MISSISSIPPI RIVER TO NEW MEXICO.



Thank You

QUESTIONS?

**Appendix G**  
Louisiana's Place in the Emerging  
Water Economy  
**Page 48**



## **A DEFINING RESOURCE: LOUISIANA’S PLACE IN THE EMERGING WATER ECONOMY**

*Mark Davis\**

*James Wilkins\*\**

### **I. WATER—LOUISIANA’S DEFINING RESOURCE**

Louisiana has a long and complex relationship with water. Culturally and economically, water has shaped Louisiana in powerful and obvious ways. Legally, the relationship has been obscure, defined more by specific uses and periodic crises that command intense but brief attention than by a systematic approach to management. Louisiana is hardly unique in this regard; indeed this has been the general approach that “wet” eastern and southern states have taken to water management and law. As a result, water law, as a field of practice and study, has received relatively little attention.

The state is facing a future in which water, even in Louisiana, will be a scarce resource that will demand a well-thought-out and integrated approach to its stewardship. Indeed, that time has arrived. The need to purposefully balance navigation, flood control, environmental, agricultural, industrial, and drinking water supplies is already pressing and becoming more so. As if things are not complicated enough, regional and interstate water needs are also growing, as are energy-driven water uses.

Louisiana has begun to respond to these new challenges. In 2001, the legislature passed Act 446 that, together with later amendments, created a framework for assessing the health of the state’s ground water resources and regulating their use.<sup>1</sup> In 2010 the legislature enacted two bills, Act 955<sup>2</sup>

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\* Senior Research Fellow and Director, Tulane Institute on Water Resources Law and Policy, Tulane University School of Law.

\*\* Professor and Director, Louisiana Sea Grant Law and Policy Program, Louisiana State University.

1. Act 446, 2001 Reg. Session (La. 2001). Act 446 enacted LA. REV. STAT. ANN § 36:4(V) and Chapter 13 C of Title 38 of the Louisiana Revised Statutes to create the Ground Water Management Commission. This also created a ground water management program and mandated the development of a plan to implement a statewide comprehensive water management system

and House Concurrent Resolution No. 1,<sup>3</sup> that have already affected a major change in Louisiana surface water use and regulation and will likely lead to a revolution in Louisiana water law in the years to come.

## II. THE NEW WATER ECONOMY

For much of human history water was the resource that defined where people lived, what they grew, how they travelled, how they moved goods, and how societies and economies developed. Great cities bordered rivers or lakes. Major ports developed at the intersection of rivers and the sea. That model changed radically in the late nineteenth and early twentieth centuries with the development of fossil fuels and new technologies that, for the first time, allowed large-scale urban and agricultural development without close proximity to a source of fresh surface water. As the massive shift of populations and industries from the Northeast and the Midwest to the Sunbelt demonstrated, factors such as the availability and price of land and labor and growing dominance of highway, air, and rail transportation became the keys to development. Water remained essential, but increasingly it could be moved to where development was occurring rather than drawing development to where the water was located. This pattern shaped the growth of older cities, such as New York City and Boston,<sup>4</sup> much of the Southwest, and cities such as Phoenix, Los Angeles, Las Vegas, and Denver.<sup>5</sup> It was even central to the burgeoning growth of

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(including surface water) for submission to the legislature in 2003. These sections were repealed in 2003 when the legislature revamped the ground water management program in § 4 of Act 49 of the Louisiana Regular Legislative Session. Act 49, 2003 Reg. Session (La. 2003). The resulting program is rooted in LA. REV. STAT. ANN §§ 36:358(C), 36:359(K), 38:3097.1-3097.6, & 36:802.18. The comprehensive water management plan called for by Act 446 was never completed.

2. Act 955 of July 2, 2010, ch. 9B, 2010 La. Sess. Law Serv. 955 (West) (creating LA. REV. STAT. ANN §§ 30:961-963).

3. H.R. Con. Res. 1, 2010 Leg., Reg. Sess. (La. 2010).

4. See, e.g., *New Jersey v. New York*, 283 U.S. 336 (1931); *Connecticut v. Massachusetts*, 282 U.S. 660 (1931).

5. An excellent summary of the development of these and other cities and the challenges they are now facing can be found in ROBERT GLENNON, *UNQUENCHABLE: AMERICA'S WATER CRISIS AND WHAT TO DO ABOUT IT* (Island Press 2009). Between 1990 and 2000, the nine fastest growing states (with growth increases between 66.27% and 21%) were Nevada, Arizona, Colorado, Utah, Idaho, Georgia, Florida, Texas, and North Dakota. All of those states have evident water supply problems and, except for Florida and Georgia, are traditionally arid states with few, if any, major lakes or rivers. See, *Population Growth Rankings*, CENSUSSCOPE.ORG, [http://www.censusscope.org/us/rank\\_popl\\_growth.html](http://www.censusscope.org/us/rank_popl_growth.html).

2011] **Louisiana's Place in the Emerging Water Economy** 273

eastern “boom cities” like Atlanta and Charlotte.<sup>6</sup> At the heart of all of this was the paradigm that water is abundant, cheap, and available—a paradigm that is now changing—and changing fast.

Just as oil came to define much of the economic and social development in the twentieth century, water is increasingly seen as the defining resource of the twenty-first century.<sup>7</sup> Whether or not water is “the new oil,” as some have claimed,<sup>8</sup> it is clear that the availability of dependable supplies of fresh water is already transforming our economic and cultural landscapes. As the state’s and the nation’s growth, energy, and environmental priorities evolve, water is often the common denominator.

### A. GROWTH

The go-go expansion of the Southwest and the Southeast was made possible, in large part, by water management decisions made decades ago. The dams and hydropower projects on western rivers, such as the Colorado River, allowed cities and farms to grow in deserts. Las Vegas typifies that explosive growth and the reality of the water crisis. At the end of the twentieth century and during the early years of the twenty-first century, Las Vegas was the fastest growing city in the nation.<sup>9</sup> Thanks to water from Lake Mead, a massive reservoir created on the Colorado River by Hoover Dam, Las Vegas was able to grow from a town of less than five thousand in 1920<sup>10</sup> to a metropolis of more than 1.5 million people by 2000.<sup>11</sup> Local officials expect it to add another 1.2 million by 2020.<sup>12</sup> All of those people need water, water that nature did not make readily available and the future availability of which is already in doubt.<sup>13</sup>

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6. See, e.g., Joseph W. Dellapenna, *Interstate Struggles Over Rivers: The Southeastern States and the Struggle Over the ‘Hooch’*, 12 N.Y.U. ENVTL. L.J. 828, 829 (Atlanta) and Reply Brief of the City of Charlotte in Response to Exceptions of the State of South Carolina at 3-5, *South Carolina v. North Carolina*, 131 S. Ct 855 (2010).

7. See, e.g., Jeneen Interlandi, *The New Oil*, NEWSWEEK, Oct. 8, 2010, at 40, available at <http://www.newsweek.com/2010/10/08/the-race-to-buy-up-the-world-s-water.html>.

8. See *id.*

9. See Population Change and Distribution 1990-2000, Census 2000 Brief, U.S. CENSUS BUREAU, <http://www.census.gov/prod/2001pubs/c2kbr01-2.pdf> (last visited Sept. 22, 2011).

10. Clark County, Nevada, <http://www.clarkcountynv.gov/depts/assessor/Pages/default.aspx>.

11. *Id.*

12. See GLENNON, *supra* note 5, at 8.

13. Las Vegas and other cities in the Southwest depend on Colorado River water not only for commercial and domestic supply but also for electricity production. Growing demand for Colorado River water has combined with diminished river flows and an overly optimistic view of what that River’s normal flow volume is have resulted in historic low water levels in the Keystone, Lake Mead, and Lake Powell reservoirs. These conditions have already spawned calls for new approaches to managing water supplies and coping with water shortages. See COLORADO RIVER GOVERNANCE INITIATIVE, *Rethinking the Future of the Colorado River*, DRAFT INTERIM

Other examples are the dams on eastern rivers like the Chattahoochee and the Catawba, which provide water for the growing metropolises of Atlanta and Charlotte—neither of which is located on a surface water body. But those cities, and others, have grown beyond their water means and are now facing severe water shortages, shortages they are determined to overcome even it means taking water from somewhere—and someone—else. One need not look far to see the proof of this. South Carolina and North Carolina recently settled a suit filed by South Carolina in the United States Supreme Court to prevent North Carolina from diverting flows from the Catawba River.<sup>14</sup> Even more revealing is a recent report on the ten biggest American cities that are running out of water, a list which includes a number of cities in the Gulf South that grew dramatically over the past fifty years (Atlanta, Houston, and Orlando), often at the expense of Louisiana's cities and towns.<sup>15</sup>

Georgia is in a seemingly endless struggle with Florida and Alabama over the Chattahoochee, Flint, and Apalachicola rivers.<sup>16</sup> At the heart of that dispute is the future water supply for the city of Atlanta and the uses of the water in Lake Lanier, a reservoir in Northeastern Georgia constructed by the U.S. Army Corps of Engineers on the Chattahoochee River in 1957. Over time, the U.S. Army Corps of Engineers has allowed increased allocations of water from the Lake for Atlanta's municipal water supply, allocations that the City of Apalachicola, Florida, Southeast Federal Power Customers, Inc., and the State of Alabama have challenged as violating the authorized uses of the reservoir.<sup>17</sup> During the course of this longstanding—and, as of this writing, still unresolved—dispute, a federal district court

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REPORT 4-10 (Dec. 2010), <http://www.rlch.org/archive/?p=1660>; Shaun McKinnon, *Lake Mead sinks to new historic low*, ARIZONA REPUBLIC, Oct. 19, 2010, <http://www.azcentral.com/arizonarepublic/news/articles/2010/10/19/20101019lake-mead-water-level-new-historic-low.html>.

14. *South Carolina v. North Carolina*, 131 S. Ct. 855 (2010). On December 3, 2010, this suit was settled without effecting an actual apportionment of the river, though it did provide a new approach to how proposed out-of-basin transfers would be handled. See Meg Kinnard, *SC atty general says deal settles NC water dispute*, ASSOCIATED PRESS, Dec. 21, 2010, available at <http://finance.yahoo.com/news/SC-atty-general-says-deal-apf-3698995604.html?x=0>.

15. Charles B. Stockdale et al., *The Ten Biggest American Cities That Are Running Out Of Water*, 24/7 WALL ST, Oct. 29, 2010, <http://247wallst.com/2010/10/29/the-ten-great-american-cities-that-are-dying-of-thirst/>. With respect to New Orleans' loss of economic stature, see JOHN. M. BARRY, *RISING TIDE: THE GREAT MISSISSIPPI FLOOD OF 1927 AND HOW IT CHANGED AMERICA* 410-11 (Simon & Shuster 1998).

16. The Chattahoochee River rises in northeastern Georgia and flows southwest along much of the Georgia – Alabama border where it is joined by the Flint River to form the Apalachicola River.

17. The first of these suits was filed in 1990 by the State of Alabama. That case, as well as the others, has been consolidated into the MDL-1824 Tri-State Water Rights Litigation, No. 09-14657, 2011 WL 2536507 (11th Cir. June 28, 2011).

2011] **Louisiana's Place in the Emerging Water Economy** 275

ruling in favor of the challengers threatened to reduce Atlanta's withdrawals by approximately forty percent.<sup>18</sup> Subsequently the Eleventh Circuit Court of Appeals reversed and remanded the trial court's ruling,<sup>19</sup> but Atlanta's troubles are hardly over. In late 2007 and 2008, growing water demand, drought, and limited water supply brought Atlanta within three months of running out of water.<sup>20</sup>

Stories about Atlanta and Las Vegas running dry make for high drama but tend to create false impressions about how water shortages—and the new water economy—will play out. The prospect that taps will run dry, or of some urban equivalent of the dust bowl exodus, are almost certainly far-fetched. Life in water-challenged places will go on, but it will change. There will be new water conservation regimes, rising costs for both water and energy (as America's electric grid is heavily dependent on water), and more creative approaches to getting water. Another likely change is the assumption that growth is a given and that water is available to support growth, or even to maintain current population and water use levels.

Perhaps the biggest change that is unfolding is the effect of water availability on the economic climate. Water issues and shortages that were historically seen as localized or temporary are now being looked at in a broader and more systemic light. Increasingly investors and risk managers are looking beyond assumed water supplies and glib projections of growth and vitality to whether companies and public entities are, in fact, hydrologically solvent. On January 27, 2010, the Securities and Exchange Commission issued interpretive guidance on disclosures related to climate change, observing that, “[c]hanges in the availability or quality of water . . . on which the registrant's business depends . . . can have material effects on companies.”<sup>21</sup> Moreover, recently Ceres, a national coalition of investors, and environmental and public interest groups published a report calling for water risk to be addressed by municipal bond rating agencies.<sup>22</sup> In short, water risk is now beginning to shape how people perceive business and investment risk.<sup>23</sup>

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18. See *In re Tri-State Water Rights Litigation*, 639 F. Supp. 2d 1308 (M.D. Fla. 2009). See also, Sharlene Leurig, *The Ripple Effect: Water Risk in the Municipal Bond Market*, CERES (Jan. 12, 2010), <http://www.ceres.org/resources/reports/water-bonds>.

19. See, *In Re MDL-1824 Tri-State Water Rights Litigation*, No. 09-14657, 2011 WL 2536507 (11th Cir. June 28, 2011).

20. *Id.*

21. Commission Guidance Regarding Disclosure Related to Climate Change; Final Rule, 75 Fed. Reg. 6290, 6291 (Feb. 8, 2010) (to be codified at 17 C.F.R. pts. 211, 231, 241).

22. Leurig, *supra* note 19.

23. See, e.g., Brooke Barton, *Murky Waters? Corporate Reporting on Water Risk*, CERES (Feb. 2010), [http://www.waterfootprint.org/Reports/Barton\\_2010.pdf](http://www.waterfootprint.org/Reports/Barton_2010.pdf).

It is an undeniable fact that availability and affordability of water is already influencing growth patterns around the country. As a state with a relative abundance of water, Louisiana must decide whether it wants to develop methods to export its water to facilitate growth elsewhere, or it wants to use its last great natural resource to attract and retain development here.

### B. ENERGY

While catchy, slogans about water being the new oil are misleading. Water may supplant oil as the defining natural resource for growth and vitality, but it surely does not reduce the importance of oil and other energy sources. Indeed, the importance of energy supply and policy will likely only grow in significance. But what is often left out of national and local energy discussions is the fact that energy policy and water policy are inseparable. From the production of oil and natural gas to the generation of electricity by nuclear power, coal, gas, the sun, or flowing water, the common requirement is an adequate supply of water to drive turbines or to serve as a cooling agent.

The importance of water in this sector is impossible to overstate. According to the U.S. Geological Survey, thermoelectric power generation requires 201 billion gallons of water each day and accounts for forty-nine percent of the nation's annual water withdrawal.<sup>24</sup>

Additionally, as the nation strives for both energy independence and alternatives to high carbon fuels, such as coal, it is forced to look for oil and natural gas in geologic formations that do not yield them willingly. Accordingly, in Louisiana and other places, oil and gas development has shifted from highly pressurized fields to tapping oil and gas deposits that are bound up in shale and tar sand formations, which require the use of millions of gallons of water per well to liberate. The development of Louisiana's Haynesville Shale field has required an average of more than 4 million gallons of water per well, and that is water that may already have other users and uses that are not easily reconciled with the new energy uses.<sup>25</sup>

Finally a word needs to be said about the role of water in the burgeoning field of biofuels. Biofuels are fuels that are produced from a

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24. Joan F. Kenny, et al., *Estimated Use of Water in the United States in 2005*, U.S. GEOLOGICAL SURVEY CIRCULAR 1344, at 5, 38 (2009), <http://pubs.usgs.gov/circ/1344/pdf/c1344.pdf>.

25. Per John Adams, 2010 LA. ST. B. ASS'N ENVTL. SEC., Meeting Presentation, Slide 20, New Orleans, La., (Nov. 12, 2010).

biological source and include bioethanol, which is based on fermented sugars from starchy plants such as corn or cellulose plants. The merits of biofuels are the subject of an ongoing public debate. What is not debatable about them is that they are water dependent, and thus a shift to biofuels will require more water withdrawal and consumption than conventional fossil fuels. The same is true of a shift to cars, buses, and trains that are powered by electricity.<sup>26</sup> Those changes may be necessary and very beneficial, but their water dependence also needs to be understood and appreciated.

### C. ENVIRONMENT

No place is more dependent on a reliable supply of fresh water for its environmental survival than Louisiana. The lower third of the state is largely a vast complex of marshes and swamps that are creatures of the state's intricate network of bayous and rivers. The well-documented decline of coastal Louisiana is best understood as the collapse of one of the world's greatest estuary complexes. Estuaries are places where freshwater from rivers mixes with the saltwater from the sea. That simple definition belies their ecologic and economic importance. Generally, estuaries are great nurseries for fish and wildlife and have been the anchors for the development of many of the great cities and cultures of our nation and the world. Specifically, the estuaries of coastal Louisiana comprise the largest and most productive coastal wetland ecosystem in the United States.<sup>27</sup>

The Louisiana government and the federal government have devoted years and millions of dollars to developing plans to stem the loss of coastal wetlands. Those plans are elaborate and complex, but, at their core, they all depend on restoring riverine flows to the coast. The investment of time, money, and water is not justified on abstract environmental values; rather, it is justified based on the services that the ecosystem provides to the communities, cultures, and economies that rely on it for storm buffering, water filtration, fisheries production, among other things.

Louisiana's wetlands provide an even more direct underpinning of coastal communities because this "working coast" is the home of millions of residents who are literally witnessing the ground disappear beneath their homes and feet. If land loss follows current observed trends,<sup>28</sup> not to

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26. See Carey W. King & Michael E. Webber, *Water Intensity of Transportation*, 42 ENVTL. SCI. & TECH. 21 (2008), available at <http://pubs.acs.org/doi/pdfplus/10.1021/es800367m>.

27. See, e.g., U.S. ARMY CORPS OF ENGINEERS, 1 LOUISIANA COASTAL AREA, LOUISIANA ECOSYSTEM RESTORATION STUDY MAIN REPORT MR1-1 (2004), [http://www.clear.lsu.edu/pdfs/clear\\_report\\_20081016141217.pdf](http://www.clear.lsu.edu/pdfs/clear_report_20081016141217.pdf).

28. See, e.g., Michael D. Blum & Harry H. Roberts, *Drowning of the Mississippi Delta due to insufficient sediment supply and global sea level rise*, NATURE GEOSCIENCE (June 28, 2009), <http://www.nature.com/ngeo/journal/v2/n7/abs/ngeo553.html>.

mention the much more dire, but scientifically supported projections, massive population relocation will be necessary and will have untold economic consequences.

The importance of instream flows is not just a matter of saving coastal Louisiana; it is integral to environmental stewardship across the state and the nation.<sup>29</sup> The simple truth is that our nation's water resources cannot be safeguarded by regulations alone; they are increasingly dependent on conservation and restoration efforts that are rooted in water.

Moreover, our state and nation have compelling plans and priorities for their waters. Unfortunately, those plans and priorities frequently conflict with one another. The water economy will inevitably be called on to reconcile, balance, and prioritize these needs and desires, but it will not be able to function on a simple market format—water is too essential to life and the public interest to allow that. How that economy is going to develop is still a work in progress, but it is beyond question that it will take shape and that those who prepare will fare the best in it.

### III. WATER AND THE LAW

Two schools of thought traditionally dominate American water law. One school of thought, dominating in the wetter, eastern half of the country, essentially views water as a commons that is shared by all who have legal access to it. This is the domain of the legal doctrine of “riparianism,” which affords rights of reasonable use to the owners of land abutting flowing waters.<sup>30</sup> This is the approach that Louisiana has traditionally followed and will be further discussed later.<sup>31</sup>

The second approach views water as a scarce resource and grants prioritized rights of use to whoever puts it to a beneficial use first, without regard to proximity to the source of the water. This concept is at the heart of the “prior appropriation” system that dominates water law in the drier, western half of the nation.<sup>32</sup>

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29. For example, efforts to restore the Everglades, San Francisco Bay, and the Sacramento-San Joaquin Delta are all dependent on securing and maintaining fresh water inputs.

30. Justice Story's landmark opinion, *Tyler v. Wilkerson* in 1827, remains perhaps the best description of traditional American riparianism and the nature of a riparian's rights to the flowing waters that abut his or her property as being a right common to all riparians. *Tyler v. Wilkerson*, 24 F. Cas. 472 (D.R.I. 1827) (No. 14,312). See also “riparian right,” BLACK'S LAW DICTIONARY 1352 (8th ed. 2004).

31. See Water Law in Louisiana, *infra* Part III.B.

32. This doctrine generally recognizes that persons who take water from public flowing waters and put it to beneficial use have a right to that water in preference to persons who come later. This doctrine also applies to ground water in some states. See JOSEPH L. SAX, ET AL, LEGAL CONTROL OF WATER RESOURCES 13 (4th ed. 2006).



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There have been two clear trends in American water law, one being to view water in more utilitarian terms and less as an appurtenant land right. This progression can be seen in the demise of "natural flow" riparianism<sup>33</sup> in favor of "reasonable use" riparianism,<sup>34</sup> regulated riparianism, and prior appropriation doctrines.<sup>35</sup>

The second major trend has been to recognize the importance of water to environmental and cultural sustainability. This trend has emerged out of the growing appreciation of the broad and deep values of instream flows and ground water protection. Legally, this involved integrating private water rights with public rights and duties through doctrines such as the public trust doctrine,<sup>36</sup> reserved rights, and overarching federal laws, such as the Endangered Species Act<sup>37</sup> and the Clean Water Act.<sup>38</sup> In Louisiana, this public values view of water is at the very heart of the high profile plans and programs aimed at preventing the collapse of the estuaries and wetlands of coastal Louisiana.<sup>39</sup>

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33. The natural flow doctrine allowed owners of land adjacent to a flowing stream or river to use water for their domestic purposes but required that they not change the natural flow of the stream in terms of quality or quantity. This restricted the use of stream water to the water front property and, even then, to uses in the same drainage basin. See Joseph Dellapenna, *The Right to Consume Water Under "Pure" Riparian Rights*, 1 WATERS AND WATER RIGHTS § 7.02 (C) (Robert E. Beck, ed., 2001 replacement vol. & Supp. 2005).

34. Reasonable use riparianism grew out of traditional "natural flow" riparianism in the nineteenth century. Societal and economic changes such as water mill driven industries prompted courts to depart from the natural flow doctrine and allow uses that were reasonable, including commercial uses that would not have been allowed under traditional riparianism.

35. See Dellapenna, *supra* note 35, at § 7.01(b).

36. The public trust doctrine is a body of law that imposes more stringent managerial duties on state governments in their management of navigable waters and water bottoms. Originally this doctrine was imposed as a function of federal law, e.g., *Ill. Cent. Ry. v. Illinois*, 146 U.S. 387 (1892) and *Phillips Petroleum v. Mississippi*, 484 U.S. 469 (1988), but it has been modified in the hands of the states. Beyond the question of the ownership of the bottoms of navigable waters, a topic that has been contentious at times in Louisiana, Louisiana has unquestionably extended the breadth of the public trust beyond navigable waters to include all of the state's natural resources. Article 9, § 1 of Louisiana's constitution states:

The natural resources of the state, including air, water, and the healthful, scenic, historic, and esthetic quality of the environment shall be protected, conserved, and replenished insofar as possible and consistent with the health, safety, and welfare of the people. The legislature shall enact laws to implement this policy.

LA. CONST. art. IX, § 1. The Louisiana supreme court has recognized this constitutional language as creating a public trust mandate. See *Save Ourselves, Inc. v. La. Evtl. Control Comm'n*, 452 So. 2d 1152, 1154 (La. 1984). In the same case, the Louisiana supreme court expressly affirmed the public trust nature of the state's ownership of navigable waterbottoms. *Id.*

37. 16 U.S.C. § 1531 (1988).

38. 33 U.S.C. § 1251 (1987).

39. See, e.g., COASTAL PROTECTION AND RESTORATION AUTHORITY OF LOUISIANA, INTEGRATED ECOSYSTEM RESTORATION AND HURRICANE PROTECTION: LOUISIANA'S COMPREHENSIVE MASTER PLAN FOR A SUSTAINABLE COAST, Chapter 3: The Master Plan (2007),

The simultaneous development of a more utilitarian approach to water law and a more public interest focused approach has unsurprisingly led to tension, and that tension is only likely to grow as the competition over water for energy, transportation, agriculture, public supply, and ecologic purposes deepens. For much of the twentieth century, the general trend was toward treating water as more of a commercial product, with some advocating that water markets were the best vehicles for sorting out water uses and allocations.<sup>40</sup>

Clearly, using markets to manage water can work to some degree, but the paradigm that water is just another bulk commodity that can be sent to where it is wanted, like coal or crops, is a false one, and its limits are beginning to show. The same can be said for regimes that treat it as a commons.<sup>41</sup> Fresh water plays a unique role in human society and in our ecology that makes it physically, morally, legally, and economically different from any other substance. It is not just another article of commerce and, despite that it is a renewable resource, water often provides a wide variety of services that are specific to certain times and places.

Just how valuable fresh water has become and how central it is to economic growth and vitality has come in to sharp focus in recent years. Nationally and internationally, headlines and reports point to the simple truth that fresh water has become a strategic resource that increasingly pits the interests of the places that need it against the places that have it.<sup>42</sup> While Louisiana has a vast water resource, it also has a growing and critical need for water. For those reasons, Louisiana will find itself increasingly drawn into internal and interstate water discussions and disputes, and its success in protecting its interests will largely turn on the applicable water laws.

### A. WHAT IS WATER LAW?<sup>43</sup>

Traditionally, the term “water law” has described the body of law

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*available* *at*  
<http://www.lacpra.org/assets/docs/Comprehensive%20Master%20Plan%20%28Main%20Report%29%20-%20chapter%203.pdf>.

40. See Stephen F. Williams, *The Requirement of Beneficial Use as a Cause of Waste in Water Resource Development*, 23 NAT. RESOURCES J. 7, 11-15, 20 (1983).

41. Symposium, *Developing a Suitable Water Allocation Law for Pennsylvania*, 17 Vill. Envtl. L.J. 1, 16-17 (2006).

42. See, e.g., SANDRA POSTEL, *LAST OASIS: FACING WATER SCARCITY* (W.W. Norton & Co. 1997).

43. Portions of this section are adapted from Mark Davis, Paper Presentation to the 56th LSU Mineral Law Institute (2009).

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governing the use and control of water.<sup>44</sup> By and large these were matters of state law and were originally focused on fresh and navigable surface waters.<sup>45</sup> To the extent groundwater was an issue, it was considered a distinct and different resource, which was governed by different laws and policies. Needless to say, the field has evolved significantly over the past century and a half and now encompasses surface water, ground water, environmental mandates, interstate and international interests, public and private rights, and a growing role for the federal government. It has been shaped not so much by logic as by necessity.

As mentioned above, in the wetter, eastern half of the United States, the central tenet of water law is “riparianism,” a common law concept rooted in civil law traditions. Under riparian law, the right to access and use water is a function of owning land adjacent to the water body.<sup>46</sup>

In the drier, western half of the nation with its vast tracts of federal lands, the central tenet of water law is the doctrine of “prior appropriation,” which creates prioritized private rights of water use based on diverting water and putting it to some reasonable and beneficial use.<sup>47</sup> In these states, water law has developed into a well-established set of laws and procedures and is an active area of legal practice, driven in large part by the competition for an always scarce resource by a growing population and economy. The adage often attributed to Mark Twain, that, “Whiskey is for drinking and water is for fighting over” was born of this experience.

No two states have exactly the same system of water law, a fact that makes it perhaps one of our most American and chaotic areas of law.<sup>48</sup> The boundaries and dimensions of water law continue to change as states contend with growing demand and shifting supplies of fresh water. If there is a defining trend in water law and management, it is that we are entering

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44. See, George A. Gould, *Water Rights Systems*, in WATER RIGHTS IN THE EASTERN UNITED STATES 8-10 (Kenneth R. Wright, ed. 1998). This description of water law is intended to be instructive rather than definitive. As a practical matter, water law that developed provided the greatest utility, which meant navigable waters and fresh surface water. As water use, technology, and public interests changed, so have the bounds of water (and so will they). Examples of this evolution can be seen in the growing importance of ground water and salt water in water law as pumping and desalination technologies have advanced to make them more usable.

45. While a summary of the water laws, as they have developed in the various states, is beyond the scope of this article, a helpful, though partial, discussion may be found in an insightful article by Professor Dellapenna. See Joseph W. Dellapenna, *The Law of Water Allocation in the Southeastern States at the Opening of the Twenty-First Century*, 25 U. ARK. LITTLE ROCK L. REV. 9 (2002).

47. See, SAX, ET AL., *supra* note 34, at 152-59.

48. See, e.g., DAVID GETCHES, WATER LAW IN A NUTSHELL 3-11 (Thomson West 4th ed. 1997).

an era of deepening water scarcity, both in the chronically dry west and the traditionally water rich east and south. This is a condition that our nation's collection of water laws is poorly equipped to deal with—one that Louisiana would be wise to anticipate and prepare for.

## B. WATER LAW IN LOUISIANA

Louisiana water law, like that of most water-rich states, is more of a hodgepodge than a systematic approach to ordering and managing water resources. It has been shaped more by the abundance of our waters than by any experience with scarcity. Accordingly, our jurisprudence has focused on drainage, the ownership of banks and water bottoms, and rights of access rather than questions of who can divert or pump water and where and how it can be used.<sup>49</sup>

True to its wet-state roots, Louisiana law treats surface water and ground water as completely distinct from one another. Truer yet, until very recently was the pervasive sense that under Louisiana law water is more of an inconvenience than an asset. Those attitudes are now changing in the face of growing regional and local demand, changing climates, and the growing role that freshwater management will have to play if coastal Louisiana's wetlands—and their associated communities, cultures, and economies—are to survive and thrive. Louisiana is on the threshold of a new era of water law and management. To understand the current state of water law in Louisiana and how it may develop further, it is important to understand the various sources of Louisiana law and the emerging conditions that are prompting commentators to predict that water will be the defining natural resource of this century.

### 1. SURFACE WATERS AND LOUISIANA RIPARIANISM

Historically, Louisiana law has fallen in line with the riparian traditions that underlie most surface water laws in the eastern half of the United States.<sup>50</sup> Despite that, Louisiana's civil code traditions, combined

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49. *See, e.g.*, *Gulf Oil Corp. v. State Mineral Bd.*, 317 So. 2d 576 (La. 1957); *Dardar v. LaFourche Realty Co., Inc.*, 55 F.3d 1082 (5th Cir. 1995); *Vaughn v. Vermilion Corp.*, 444 U.S. 206 (1979).

50. *See, e.g.*, Dellapenna, *supra* note 47, at 73-77. Not all commentators agree with this conclusion. Some, such as Professor David Getches, view Louisiana water law as a distinct hybrid adapted from the French Civil Code. *See* GETCHES, *supra* note 50. The fact that some confusion and disagreement exist over the origins of Louisiana water law should not be surprising, since there is no complete agreement on the origins of riparian law in general. Indeed, some scholars contend that the roots of riparian law in the United States actually lie in civil law. *See, e.g.*, A. DAN TARLOCK, *LAW OF WATER RIGHTS AND RESOURCES* § 3.6 (West 2002). *See also* Dellapenna, *supra* note 35, § 7.01(b).

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with the paucity of jurisprudence, have nurtured confusion and speculation over how to characterize Louisiana law on the subject of surface waters. The nagging question seems to be if and how the common law concept of riparianism could be expressed in Louisiana's Civil Code and statutes. Fortunately, we need not dwell on this for several reasons. First, the governing Code articles<sup>51</sup> and the applicable (if sparse) jurisprudence are clearly supportive of a riparian approach. Second, it is increasingly clear that riparian law, as it evolved in the nineteenth century, borrowed more from the Code Napoleon than any ancient English legal traditions.<sup>52</sup> Accordingly, it should hardly be surprising that Louisiana law is consistent with a doctrine that shares a civil code heritage. This also means that the experience of other riparian states with a richer jurisprudential history might be instructive for Louisiana. Regardless of how Louisiana got there, it is beyond dispute that the state respects riparian rights but that those rights are not absolute and are subject to regulation by the state and its political subdivisions.

**a. Water as a Public Trust Resource**

Article 9, § 1 of the Louisiana constitution declares that the natural resources of the state “including air and water, and the healthful, scenic, historic, and esthetic quality of the environment shall be protected, conserved, and replenished insofar as possible and consistent with the health, safety, and welfare of the people” of the State of Louisiana.<sup>53</sup> This duty has been characterized by the Louisiana Supreme Court as constituting a “public trust doctrine”<sup>54</sup> that imposes a mandate on the state via implementing legislation to maintain, protect, and enhance its environment via (among other things) the regulation of water control, scenic rivers and streams, and the development, coordination, and implementation of statewide policies and programs to safeguard the environment and ensure the most advantageous use of the state's natural resources.<sup>55</sup>

This constitutional public trust doctrine is distinct, though not entirely separate, from the public trust doctrine that applies to the ownership of water bottoms beneath navigable waters. The constitutional public trust doctrine is rooted in the state's role as a protector of public health and welfare where the latter is rooted in a property interest that is held in trust for the people of the state.

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51. LA. CIV. CODE ANN. art. 657 (2008) & 658 (2008), which will be discussed in more detail later.

52. *Id.*

53. LA CONST. art. 9 § 1.

54. *See Save Ourselves, Inc. v. La. Env'tl. Control Comm'n*, 452 So. 2d 1152 (La. 1984).

55. *Save Ourselves*, 452 So. 2d at 1154.

The public trust ownership of navigable water bottoms is rooted in long standing common law and civil law traditions and was first expressed by the United States Supreme Court in its landmark case, *Illinois Central Railway Co. v. Illinois*.<sup>56</sup> In that case, the Supreme Court held that, as a matter of federal law, all states took ownership of the lands beneath the navigable waters within their borders at the time they entered the Union and that those lands were to be held in trust (i.e. they were to be kept for certain public purposes and were not generally susceptible of private ownership) for the people of the state.<sup>57</sup> For these purposes, waters were considered to be navigable if they were either (1) navigable in fact or (2) subject to the ebb and flow of the tide at the time of statehood.<sup>58</sup> As absolute as the language of the Supreme Court appears on one hand, it is also clear that the Court recognizes that under certain circumstances states may limit or abrogate the trust nature of water bottom ownership.<sup>59</sup> While there has been some dispute on the question of whether Louisiana has retained its tidelands in trust, the leading jurisprudence is unequivocal that it has.<sup>60</sup>

Knowing that the state has fully retained its public trust lands does not provide as much guidance as one might wish when it comes to knowing exactly which water bottoms it covers. The reason for that ongoing confusion is simple since it is a question of fact whether a given waterway or water body is navigable “in fact,” and there is no clear map of which areas were subject to the ebb and flow of the tide when Louisiana was admitted to the union in 1812. This is all further complicated by the dynamic nature of Louisiana’s coasts and by the lack of a sustained effort by the state to ascertain which water bottoms it owns and in what capacity it owns them.

#### **b. Water as a Common, Public, or Private Thing**

The classification of water as a common, public, or private thing determines for what, by whom, and when it can be used.

##### ***i. Common Things***

Common things, such as the air or the high seas, are not owned or ownable by any one and may be used freely by all in accordance with the

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56. *Ill. Cent. Ry. Co. v. Illinois*, 146 U.S. 387 (1892).

57. *Id.*

58. *See Phillips Petroleum Co. v. Mississippi*, 484 U.S. 469 (1988).

59. *Id.* at 483.

60. *See Gulf Oil Corp. v. State Mineral Bd.*, 317 So. 2d 576 (La. 1975).

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uses “nature has intended for them.”<sup>61</sup> The language of the Civil Code article defining common things is generally descriptive of what a common thing is, but beyond air and the high seas it provides no insight into what else might be a common thing.

**ii. Public Things**

Public things are those things owned by the state or its political subdivisions (e.g. parishes or municipalities) in their capacity as “public persons.”<sup>62</sup> Property of this sort must be held and used for public purposes and cannot be transferred into private hands unless otherwise allowed by law.<sup>63</sup>

Examples of public things cited by the Civil Code are running waters, the waters and bottoms of navigable water bodies, and the territorial sea and seashore.<sup>64</sup> The Code’s specific identification of running waters and navigable waters as public things significantly distinguishes between waters that are running and those that are navigable (though that distinction makes no difference to the water being classified as a public thing).

Like common things, public things are subject to usage by the public in accordance with applicable laws and regulations. Among the public rights recognized by the Civil Code are the right to fish “in the rivers, ports, roadsteads, and harbors” and a person’s right to “land on the seashore, to fish, to shelter himself” as long as no injury is done to the property of adjoining property owners.<sup>65</sup>

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61. LA. CIV. CODE ANN. art. 449 (1979).

62. LA. CIV. CODE ANN. art. 450 (1979).

63. *See, Gulf Oil Corp.*, 317 So. 2d at 581-89. This case arose as a concursus proceeding to determine who was entitled to receive oil royalty payments. *Id.* At issue was whether certain lands Gulf Oil was leasing were private or public. *Id.* The lands in question were submerged lands beneath navigable waters. *Id.* The private claimant held land patents issued by the State of Louisiana prior to the enactment in 1921 of the Louisiana constitutional provision barring the divestiture of navigable water bottoms. *Id.* The court initially affirmed the state’s ownership on narrow technical grounds but granted rehearing on the broader issues of if and when such lands and waters are susceptible of private ownership. *Id.* Justice Barham’s opinion for the court on rehearing (subject to three dissents) clearly intended to clarify the law, albeit at the expense of overruling a line of cases that dated back more than 20 years. *Gulf Oil Corp.*, 317 So. 2d 576. The court concluded that by virtue of the navigable waters being in the public domain they were “. . . at the very least (if at all possible) . . . (a)ny alienation or grant of navigable waters by the legislature Must [sic] be express and Specific [sic] and never implied or presumed from general language in a grant or statute.” *Id.* (citing *California v. Price*, 74 So.2d 1, 21 (La. 1954) (Hawthorne, J., dissenting)). The court’s discussion of the Civil Code’s classifications of public and private things and things that are susceptible of ownership leaves little or no room for running waters being treated differently than navigable waters. *See Gulf Oil Corp.*, 317 So. 2d 576.

64. *Gulf Oil Corp. v. State Mineral Board*, 317 So. 2d 576 (La. 1975).

65. LA. CIV. CODE ANN. art. 452 (1979).

*iii. Private Things*

Private things are owned by private persons (individuals, corporations, etc.) or the state and its political subdivisions in their capacity as private persons.<sup>66</sup> This broad category covers a wide range of what most people understand to be personal property or real estate. This type of property can be bought or sold and generally carries with it no rights of public usage.

*iv. Louisiana Riparianism*

As noted earlier, the essence of riparianism is the right of a landowner adjacent to a flowing stream to use the waters of that stream for certain purposes. At one time, those uses were restricted to subsistence purposes such as cooking, drinking, and watering stock. Water could not be used off the riparian tract or in a different hydrologic basin. Commercial uses were forbidden and the “natural flow” of the stream (its fundamental quality and quantity) could not be degraded.<sup>67</sup> These riparian rights did not create a property interest in the water itself but rather a right of use that is appurtenant to the ownership of riparian lands.

Unsurprisingly, the “natural flow” doctrine was incompatible with the industrialization and the growth of our state. Something had to change, and it was riparianism that changed, ushering in the development of the doctrine of reasonable use.<sup>68</sup> In essence, the resulting law of riparian rights allowed for traditional domestic uses (referred to as “natural uses”) and other, largely commercial, uses to the extent they were deemed reasonable and not injurious of the rights of other riparians.<sup>69</sup> The reality that the determination of what is reasonable comes only after the fact and may have little predictive value makes this approach of limited use to planners and policy makers, but it was enough to allow for the commercial exploitation of flowing streams and the flowering of American industry and commerce.<sup>70</sup> This also is clearly the approach that Louisiana courts have taken to determining who could use surface waters and for what purposes, at least until the enactment of Act 955 in 2010.<sup>71</sup>

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66. LA. CIV. CODE ANN. art. 453 (1979).

67. See, *Merritt v. Parker*, 1 N.J.L. 460 (N.J. 1795)

68. The decision by future Supreme Court Justice Story in *Tyler v. Wilkinson*, 24 F. Cas. 472 (C.C.R.I. 1827) rejecting the traditional natural flow doctrine is often credited as landmark in the development of modern riparian law. See also SAX, ET AL., *supra* note 34, at 1.

69. Joseph W. Dellapenna, *The Law of Water Allocation in the Southeastern States at the Opening of the Twenty-First Century*, 25 U. ARK. LITTLE ROCK L. REV. 9, 12 (2002) (internal citations omitted).

70. See, SAX, ET AL., *supra* note 34.

71. See *supra* note 2 and accompanying text.



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With Louisiana's distinct legal system, any understanding of water law in Louisiana must be rooted in its civil law traditions. The foundation of Louisiana riparianism is found in Louisiana Civil Code articles 657 and 658, which state:

The owner of an estate bordering on running water may use it as it runs for the purpose of watering his estate or for other purposes.<sup>72</sup>

The owner of an estate through which water runs, whether it originates there or passes from lands above, may make use of it while it runs over his lands. He cannot stop it or give it another direction and is bound to return it to its ordinary channel where it leaves his estate.<sup>73</sup>

Plainly, these articles describe a relationship between riparian lands and the use of the running waters<sup>74</sup> that pass through or next to those lands.<sup>75</sup> It is important to point out that in most states the concept of riparian rights is not limited to flowing waters but also extends to coastal waters, and natural lakes and ponds.<sup>76</sup> But that was not the case in Louisiana until the passage of Act 955.<sup>77</sup> Act 955, importantly, contains a definition of "running surface water," defined as "the running waters of the state, including the waters of navigable water bodies and state owned lakes."<sup>78</sup> Implicitly this seems to undermine or overrule *Verwyvelt*, but it is too early to conclude to what extent since there is almost certainly a class of lakes or ponds that are both nonnavigable and privately owned, and Act 955 by its own terms is set to expire and be of no further effect after 2012.<sup>79</sup>

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72. LA. CIV. CODE ANN. art. 657 (1978).

73. LA. CIV. CODE ANN. art. 658 (1978).

74. In the past there was a scholarly debate over whether articles 657 and 658 applied only to running or nonnavigable waters. See JAMES KLEBBA ET AL., LEGAL AND INSTITUTIONAL ANALYSIS OF LOUISIANA'S WATER LAWS WITH RELATIONSHIP TO THE WATER LAWS OF OTHER STATES AND THE FEDERAL GOVERNMENT 4-5 (Louisiana Dept. of Transp. & Dev., Office of Pub. Works, 1983). The prevailing view is that the Code articles apply to both navigable and nonnavigable running waters. This paper assumes that view to be correct.

75. Until the passage of Act 955, there was no clear definition of "running water" in Louisiana law. See *supra* note 2 and accompanying text. What is clear from jurisprudence is that it is a question of fact and that it has been interpreted to exclude sloughs or swamps with no directional current that are fed only by rain or periodic overflow. See *Hall v. Bd. of Comm'rs*, 35 So. 976, 980 (La. 1904); *Verwyvelt v. Armstrong Raterree, Inc.*, 463 So. 2d 979, 984 (La. Ct. App. 1985). This largely comports with the general common law rule, which states that riparian rights attach to all nondiffuse natural waters. See, e.g., DOUGLAS L. GRANT & GREGORY WEBER, CASES AND MATERIALS ON WATER LAW 245 (8th ed. 2010). Basically, that means storm and floodwaters don't support riparian rights, but streams, bayous, and rivers do.

76. Technically, rights relating to those waters are covered by the doctrine of littoralism, but that is a distinction that has largely been abandoned. See SAX, ET AL., *supra* note 34, at 28.

77. *Verwyvelt v. Armstrong Raterree, Inc.*, 463 So. 2d 979, 984 (La. Ct. App. 1985).

78. LA. REV. STAT. ANN. § 30:962(1).

79. *Verwyvelt v. Armstrong Raterree, Inc.*, 463 So. 2d 979, 984 (La. Ct. App. 1985); LA. REV.

Just as plain is the fact that there are some limits on how those waters may be used. Article 657, dealing with the rights of owners whose estates border running waters, expressly grants the right to use the water “as it runs” to water the estate or “for other purposes,” while article 658 dealing with the rights of owners whose estates are traversed by running waters does not mention any specifically permissible uses or purposes.<sup>80</sup> This should be seen not as a substantive difference but rather as an illustration of the degree of vagueness and linguistic inconsistency that characterizes this entire area of law. The character of the water course, rather than its name, is controlling. Under that general rule, natural waterways with a channel, bed, bank, directional flow and determinable source of supply are riparian. The requirement that the waters be returned to the channel (in the case of waters traversing an estate) following its use implies a restriction on consumptive uses and on out-of-basin transfers. Both of those restrictions are entirely in keeping with American riparian law traditions, a conclusion borne out by jurisprudence. The leading, and pretty much only, case on this point is the 1925 case of *Jackson v. Walton*, which involved a dispute between a riparian land owner and a nonriparian who, under contract with a second riparian, planned to remove water from Hotchkiss Bayou for irrigation purposes.<sup>81</sup> In dissolving an injunction against the defendant irrigator the court found that the plaintiff had not demonstrated an actual or probable injury to its rights or lands. This case is instructive for several reasons:

- First, it specifically reserved the plaintiff’s right to renew the action should conditions (i.e. actual or impending injury) change.
- Second, it is clear that irrigation and, one would assume, other commercial uses are not per se unreasonable and will be allowed to the extent they do not produce or threaten harm.
- Third, the defendant’s rights were derivative of a riparian’s rights and not couched in terms of a more general right to take and use water. This is directly in keeping with traditional riparian law.
- Finally, the court was careful to note that the irrigator’s property was adjacent to another riparian’s land and that the pumped water would drain back to the Bayou. This fact would seem to bring the case within the bounds of usage

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STAT. ANN. § 30:962(1).

80. LA. CIV. CODE ANN. art. 657 (2008) & 658 (2008).

81. *Jackson v. Walton*, 2 La. App. 53 (La. Ct. App. 1925).

allowed by article 658.

This jurisprudence strongly supports the conclusion that Louisiana law is in step with mainstream riparian law thinking, a conclusion reached by a number of commentators as well.<sup>82</sup> More importantly, that conclusion was bolstered by a series of Louisiana Attorney General Opinions issued in 2010 that held that the running surface waters of the state were “public things.”<sup>83</sup> The flurry of Attorney General Opinions in the spring of 2010 was not a spontaneous event but was triggered by demands for water from nontraditional water users, most notably by companies seeking to develop natural gas from shale formations in northwest Louisiana. To get gas from such formations, it is necessary to fracture the shale, a practice that is done with highly pressurized and often adulterated water—millions of gallons per well.

Finding water in sufficient quantities to hydraulically fracture or “frack” the shale is a significant challenge. Since most of the gas fields are not on riparian land, the first sources of water pursued were aquifers. Under Louisiana law, groundwater is largely there for the taking but concerns over impacts to drinking and agricultural water supplies caused the state to urge the gas industry to use surface waters for their fracking work,<sup>84</sup> water which, as already discussed, is not there just for the taking.

*v. Act 955 of 2010 and the Birth of Regulated Riparianism in Louisiana*

Following the Attorney General's rulings affirming Louisiana's riparian law and restricting the waters available for fracking, the legislature quickly enacted Act 955, which allows the state to authorize water withdrawals from the running waters of the state by nonriparians. This authority will sunset in 2012 but it has the potential to create water rights that extend until December 31, 2020.<sup>85</sup>

Though the legislature clearly envisioned Act 955 as a temporary

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82. See, e.g., James Klebba, *Water Rights and Water Policy in Louisiana: Laissez Faire Riparianism, Market Based Approaches, or a New Managerialism?*, 53 LA. L. REV. 1779 (1993) and Joseph W. Dellapenna, *supra* note 71. In the latter article, Professor Dellapenna makes the interesting observation that despite the state's distinctive legal history, “Louisiana remains closer to the classic common law of water rights for both surface water and groundwater than any of the common law states in the region.” See Dellapenna, *supra* note 71, at 77.

83. La. Op. Att’y Gen. 08-0176 (La. A.G. 2010), 2010 WL 1512844; La. Op. Att’y Gen. 09-0028 (La. A.G. 2010), 2010 WL 1512843; La. Op. Att’y Gen. 09-0066 (La. A.G. 2010), 2010 WL 1512842; La. Op. Att’y Gen. 09-0291 (La. A.G. 2010), 2010 WL 2071071.

84. *Ground Water Use Advisory: Commissioner of Conservation Recommends Wise Water Use Planning in the Haynesville Shale*, LA. DEPT. OF NAT. RESOURCES (Oct. 16, 2008), <http://dnr.louisiana.gov/index.cfm?md=newsroom&tmp=detail&aid=509>.

85. See LA. REV. STAT. ANN. § 30:961(E) (2010) and Act 955, *supra* note 2.

measure (at least until the recommendations for a longer term approach called for by HCR 1 were received and acted on) it is already a fundamental change to how Louisiana approaches water law. With little discussion and fanfare, Louisiana has joined the ranks of states that have moved away from traditional riparianism to a permit-driven system that is known as “regulated riparianism.”

In making this move, Louisiana joins a trend that began in the 1950s that recognized that the best uses of water may not be just those associated with appurtenant lands and that water use is too important to leave unregulated. At its heart, regulated riparianism treats flowing water as a public good that is subject to societal decisions not just those of certain land owners and that is managed more holistically. Twenty states, excluding Louisiana, now have some version of regulated riparianism.<sup>86</sup>

It is too early to evaluate the permitting program authorized by Act 955, but it is already clear that the Act, having provisions that are sometimes difficult to interpret or reconcile, will likely raise more questions than answers. It is notable that Louisiana embarked on this undertaking as a matter of great urgency and with very little public discussion and little comparative analysis of the experience in other states. Going forward it is likely that experience will become more important to learn from. Although Louisiana’s water needs and challenges may be unique, they are not so different that the administrative processes that have been proven successful (or unsuccessful) in other states will not be powerfully instructive.

As Louisiana plans for water management beyond 2012 the need to thoughtfully consider not only the experience of other states but also such resources as the Regulated Riparian Model Water Code<sup>87</sup> and the Second Restatement of Torts<sup>88</sup> will become more and more important.

The path Louisiana chooses will have far-reaching implications. If large-scale out-of-basin consumptive uses of surface water are allowable—even encouraged—for one purpose, it may be impossible to restrict it for others, such inter-basin or interstate freshwater diversions. This is not an academic point. Texas, for example, has had plans since at least the 1960s to divert up to 1.5 million acre-feet of the Mississippi River per year to augment its fresh water supplies.<sup>89</sup>

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86. For a list of states with version of a regulated approach to surface water use, see SAX, ET AL., *supra* note 34, at 104.

87. WATERS LAWS COMMITTEE, THE REGULATED RIPARIAN MODEL WATER CODE (Joseph W. Dellapenna, ed., ASCE 1997).

88. *E.g.* RESTATEMENT (SECOND) OF TORTS §§ 850, 850A, 855 & 856 (1979).

89. *See* Tex. Water Dev. Bd., The Texas Water Plan Summary 12 (Nov. 1968).

#### IV. LOUISIANA'S ROLE IN THE EMERGING WATER ECONOMY

Riparian rights and the uses to which Louisiana's surface waters have been put have long been a neglected area of Louisiana law. Indeed, the same could be said for Louisiana water law in general, including questions about groundwater, public and private ownership and rights of use, rights of reclamation, and the relationship between mineral rights and surface ownership, particularly in the state's coastal region. Such concern is not new, but it has produced relatively few changes until recently and those have been halting and even temporary in some cases (as is the case with Act 955).

In the specific case of surface waters, the present and growing interest in using those waters for consumptive industrial purposes (such as fracking) or for export to increasingly dry states such as Texas will soon test both the bounds of Louisiana law and the will and wisdom of all branches of state government. The status quo will not hold. It is clear that we are headed for a future in which the availability and control over freshwater will increasingly determine who prospers and who suffers, who succeeds and who fails, and whether water will be just a commodity going to those with the ability to pay for it or whether it will also sustain our cultural and natural heritage. The only question is what role Louisiana will choose to play in charting that future.

The urgency of embracing this challenge can be seen all around us. Boston, Atlanta, and parts of Florida face a future without readily available water.<sup>90</sup> Georgia is in a deepening dispute with Florida, Alabama and the Army Corps of Engineers over the use and management of the Apalachicola, Flint, and Chattahoochee rivers system in order to ensure Atlanta's water future.<sup>91</sup> Georgia is also contesting its boundary with Tennessee in order to claim a share of the Tennessee River.<sup>92</sup> South Carolina recently settled litigation in the United States Supreme Court

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90. "Boston, Atlanta and much of Florida are nearing the end of readily available water," Senator Pete Domenici, "Water Desalination Facilities, Energy and Reclaimed Water," Chairman Pete Domenici testimony, Senate Energy and Natural Resources Committee, October 20, 2005, quoted in Cynthia Barnett, *Mirage: Florida and the Vanishing Water of the Eastern U.S.*, pages 169-70 (2005).

91 See, e.g., Joseph W. Dellapenna, *Interstate Struggles Over Rivers: The Southeastern States and the Struggle Over the Hooch*, 12 N.Y.U. Environmental Law Journal, 828. Litigation over this complex controversy began in 1990 and is still on going as of the date of this writing. See, *In Re MDL-1824 Tri-State Water Rights Litigation*, 644 F.3<sup>rd</sup> 1160 (2011, Eleventh Cir.).

92 See, Georgia Claims a Sliver of the Tennessee River, New York Times, February 22, 2008,

against North Carolina to the apportionment of the Catawba River.<sup>93</sup> News accounts and scientific studies attest to shifting climates and rising seas that will affect both demands on and uses of our water resources.

Interest in these water issues is growing in Congress as well. The House Committee on Science and Technology has already held hearings looking into the need for more coordinated federal approach to research and development. The sense of mood is evident from Chairman Bart Gordon (D-Tenn.) who has stated, “[c]onstraints on water supplies are taking a toll on society, our economy, and the environment. Water is too valuable a resource for us to manage in a crisis-by-crisis fashion.”<sup>94</sup> Plainly, this game is already underway and Louisiana needs to play a much more active role.

## V. CONCLUSIONS AND RECOMMENDATIONS

Louisiana is a state rich in water resources, so much so that it has taken them for granted in many ways. We now stand on the threshold of a new era in which freshwater will be recognized as a scarcer and more valuable resource. It will also increasingly be viewed and managed as a regional or national resource. To promote the welfare of its people and economy and discharge its natural resource stewardship and public trust duties, the state needs to recognize the enormity and urgency of this challenge and opportunity and should consider the following recommendations:

1. Louisiana needs to systematically review the entire body of its current water and policies and assess if and to what degree they reflect the state’s present and future needs and priorities. At the least, this should include its laws regarding surface waters, groundwater, public and private ownership of waters, banks and water bottoms, mineral ownership, and reclamation.
2. With regard to surface waters specifically, the state needs to assess, explicate, and, where necessary, change or clarify the rights of riparians and others to use the surface waters of the state.
3. Louisiana should actively and closely monitor national and regional developments, such as the recently settled *South*

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93. *South Carolina v. North Carolina*, 131 S. Ct 855 (2010).

94. *Twenty-first Century Water Planning: The Importance of a Coordinated Federal Approach*, 111th Cong. 8 (2009) (statement to House Comm. on Sci. & Tech.), available at <http://www.gpo.gov/fdsys/pkg/CHRG-111hhr47553/html/CHRG-111hhr47553.htm>.

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*Carolina v. North Carolina* case,<sup>95</sup> and use them as a template for framing and articulating its rights, needs, and values. It should be prepared to engage in those where appropriate and be a leader in regional watershed planning and management. By way of illustration, the state should play a greater role in the efforts to lower nutrient levels in the Mississippi River and reduce the hypoxia problem in the Gulf of Mexico.

4. Louisiana should be aggressively making its need for specific aquatic resources clear and acting to secure or defend them. Examples of this include: (a) demanding the development of water and sediment budgets for the Mississippi River and linking those to its plans to rehabilitate Louisiana's coast; (b) working to ensure that the interstate waters and sediments we receive are suitable in quality and quantity for the state's vital interests; and (c) aggressively exercising the rights the state has under laws such as the Coastal Wetlands Planning, Protection, and Restoration Act to demand that navigation, flood control, and irrigation projects under federal control be conducted in way consistent with the comprehensive plans to restore coastal Louisiana.

The things touched on in this paper, if nothing else, suggest that water law, in general, and riparian law, in particular, need to be brought into the twenty-first century. This will be no small undertaking, but it is one the state cannot afford to ignore. No state is in a better position to lead and benefit from the development of the emerging "water economy" and no state is presently less ready. It is very much the business of us all to help change that.

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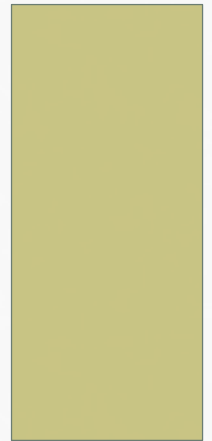
95. *South Carolina v. North Carolina*, 131 S. Ct. 855 (2010).

**Appendix H**  
Protecting State Waters Within  
the Commerce Clause  
**Page 72**

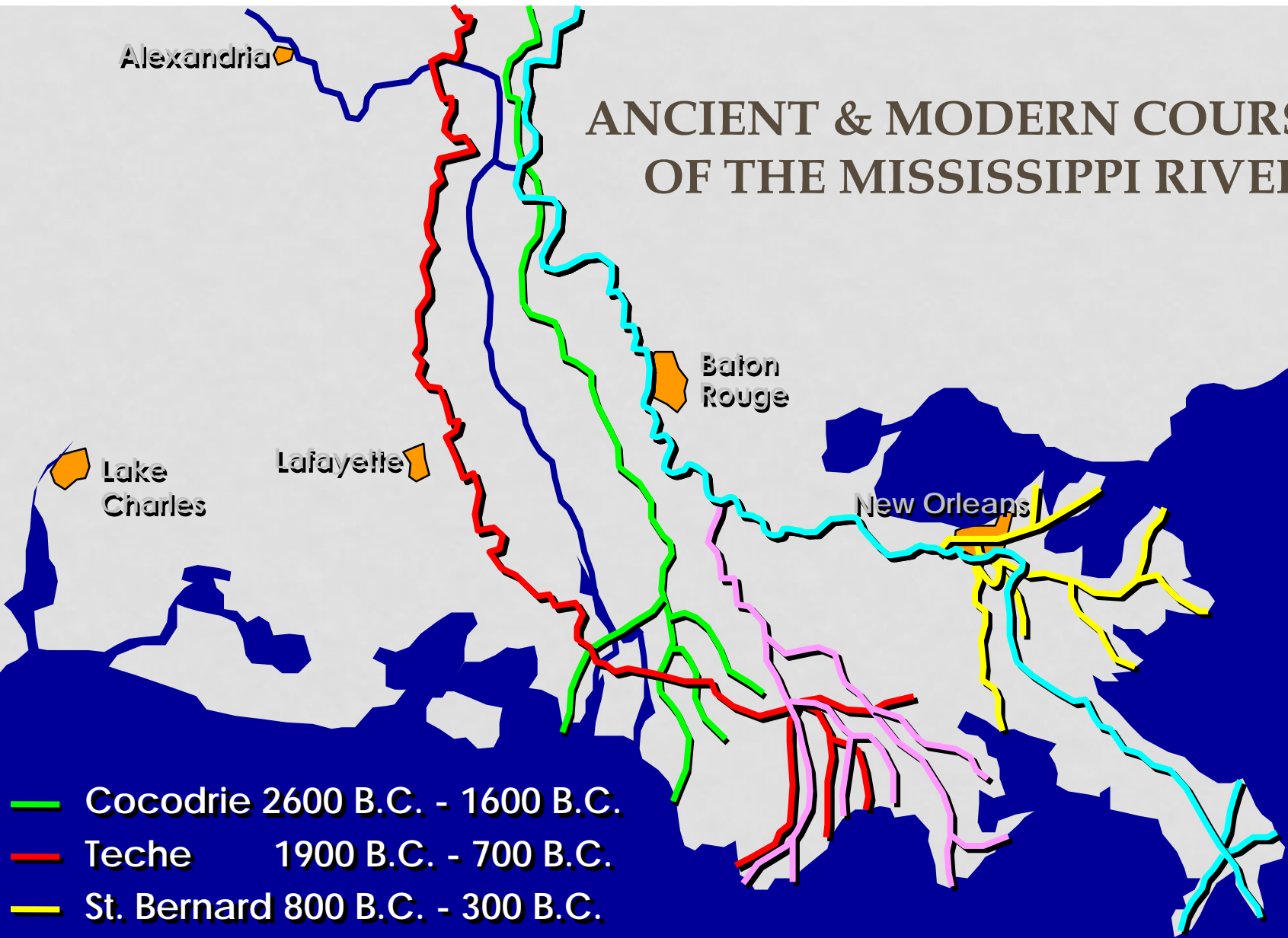


**ESCAPING THE SPORHASE MAZE:  
PROTECTING STATE WATERS  
WITHIN THE COMMERCE CLAUSE**

MARK DAVIS AND MICHAEL PAPPAS,  
TULANE LAW SCHOOL



# ANCIENT & MODERN COURSES OF THE MISSISSIPPI RIVER



- Cocodrie** 2600 B.C. - 1600 B.C.
- Teche** 1900 B.C. - 700 B.C.
- St. Bernard** 800 B.C. - 300 B.C.
- Lafourche** 65 A.D. - 1300 A.D.
- Modern** 900 A.D. - PRESENT

“ A reliable supply of fresh water is critically important to the long-term success of the Plan [Louisiana Master Plan for Coastal Restoration and Protection]. ”

Louisiana Ground Water Resources Commission, “Managing Louisiana’s Groundwater Resources with Supplemental Information on Surface Water Resources,” March 15, 2012

“ Constraints on water supplies are taking a toll on society, our economy and the environment. Water is too valuable a resource for us to manage in a crisis-by-crisis fashion ”

Congressman Bart Gordon, Chairman  
House Committee on Science and Technology  
March 4, 2009

**BusinessWeek**

## **There Will Be Water**

**T. Boone Pickens thinks water is the new oil—  
and he's betting \$100 million that he's right**



“There is not enough water available in Texas to supply future water needs....Water in these quantities [12-13 million acre-feet per year] appears...to be available from the Mississippi River...in Louisiana” .

The Texas Water Plan, Summary, page 12  
(November 1968 ).

THE ADVOCATE

**Vote on sale of water  
looms  
Toledo Bend plan  
draws criticism**

**BY MARK BALLARD**  
Capitol news bureau  
January 03, 2012

# LOUISIANA WATER LAW-TODAY

- Constitution
- Civil Code
- Mineral Code
- Revised Statutes
- Jurisprudence
- Compacts under Federal Law
  - Red River
  - Sabine River



# WATER UNDER LOUISIANA'S CONSTITUTION

## **Article IX Section 1.**

“The natural resources of the state, including air and water, and the healthful, scenic, historic, and esthetic quality of the environment shall be protected, conserved, and replenished insofar as possible and consistent with the health, safety, and welfare of the people. The legislature shall enact laws to implement this policy.” ,

# Water under Louisiana's Constitution

The Louisiana Supreme Court says the Article IX, Section 1 imposes a “**public trust**” duty of environmental protection on all state agencies and officials.

*Save Ourselves Inc., v Louisiana Environmental Control Commission.* 452 So. 2d 1152, 1156 (1984).

# WATER UNDER LOUISIANA'S CONSTITUTION

- **Article 9, Section 3.** Prohibits alienation of the beds of navigable waters (except for reclamation of eroded lands)

# WATER UNDER LOUISIANA'S CONSTITUTION

- **Article VII, Section 14.** Prohibits Donations of State Property

# SURFACE WATERS

- **Civil Code Art. 449.** Declares the “high seas” to be a common thing that may not be owned by anyone.
- **Civil Code Art. 450.** Declares “such things as” running waters, waters and bottoms of natural navigable water bodies, territorial seas and sea shore to be public things.

# SURFACE WATERS

- **RS 9.1101.** Declares the water and beds of bayous, rivers, lakes, streams, lagoons, lakes and bays (not privately owned on August 12, 1910) to be owned by the state.

# SURFACE WATERS – LOUISIANA RIPARIANISM (NO ALIENATION)

- **Civil Code Article 657-** *Owner of an estate bordering on running water may use it as it runs for the purposes of watering his estate or for other purposes.*
- **Civil Code Article 658-** *The owner of an estate through which water runs...may make use of it while it runs over his lands. He cannot stop it, or give it another direction and is bound to return it to its original channel where it leaves his estate.*

# SURFACE WATERS – REASONABLE USE RIPARIANISM – LIMITED ALIENATION

- *Jackson v Walton*, 2 La. App. 53 (1925). (Non riparian allowed to withdraw water under contract with riparian as long as other riparians not injured. Water would still drain to water course).



# SURFACE WATER – REGULATED RIPARIANISM

- Act 955 (2010). Allows the state to enter into cooperative endeavor agreements for use of running surface waters for non riparian and consumptive use. (Expires 12/31/12 unless extended).

# GROUND WATER

Treated as fugitive resource subject to the laws of capture under jurisprudence and Mineral Code.

No restrictions on place or purpose of use.

(RS 31.4 and *Adams v. Grigsby*, 152 So. 2d 619 (1963))

# LOUISIANA WATER LAW-THE FUTURE

- “Sustainability is Non-Optional—Louisiana’s water budget...is not infinite. ... We have no choice but to sustain our critical water supply.”
- “these findings provide further evidence of the need for the state’s current water management efforts to evolve into a more robust, comprehensive plan.”

Louisiana Ground Water Resources Commission,  
“Managing Louisiana’s Groundwater Resources with  
Supplemental Information on Surface Water  
Resources,” March 15, 2012

# ON THE EVE OF THE WATER ECONOMY AND COMPREHENSIVE WATER MANAGEMENT

- New Water Uses emerging
- Greater local water shortages
- Growing pressure for water export
- Growing awareness of the asset value of water
- Declared intention to manage water more comprehensively
- Growing interest in using water more widely in Louisiana and restricting out of state uses

# POSSIBLE DRIVERS FOR A NEW APPROACH TO WATER APPROACH

- Water is a unique natural resource that is essential to life and prosperity
- Running water and ground water are owned by the State in trust.
- Water cannot in its natural state be bought or sold (in general) and sales out of state should be restricted.
- Water needs to be managed for the public welfare of the state and its inhabitants
- Water conservation is a good idea.

# ENTERING THE SPORHASE MAZE

1978 Nebraska Law. Restricted pumping and transport of Neb ground water for out-of-state use w/o permit.

Permit Conditions:

- Not unreasonable.
- Not contrary to conservation and use of ground water.
- Not detrimental to public welfare
- Receiving state allows export to Neb.

# SPORHASE v. NEBRASKA

## 485 U.S. 941 (1982)

- Strikes down Nebraska law as burdening interstate commerce under dormant commerce clause.
- Holds all water—ground and surface—to be an article of commerce.
- Narrows realm of state actions to those that do not discriminate against interstate commerce or that conserve water for “times of severe shortage” (i.e. essential for survival, *City El Paso v Reynolds* (563 F. Supp. 379 (1983))).

# THE LEGACY OF SPORHASE

What Sporhase means:

States need to carefully consider any restrictions on water export or preferences for in-state water use



# THE LEGACY OF SPORHASE

- What Sporhase does not mean:
  - Sporhase does not reallocate power in our federal system
  - Sporhase does not strip the states of their traditional role in defining and characterizing property
  - Sporhase does not strip states of their traditional control over water resources
  - Sporhase does not mean that there can be no restrictions on water export or on the time/place/type of water use

# THE LEGACY OF SPORHASE

The Sporhase doctrine is not fully developed

- The Sporhase opinion
  - Particular to Nebraska's statute
  - Left a number of issues for future development
- Its progeny
  - El Paso I
  - El Paso II
  - Tarrant
    - still a live controversy with potential to impact Louisiana

# WORKING WITHIN THE CONFINES OF SPORHASE

Sporhase leaves states with four important considerations to ensure water regulations do not run afoul of the Dormant Commerce Clause

- State characterization of water resources
- Generally applicable water restrictions
- Documentation water shortage
- Water compact language

Best practices in light of these considerations need to be part of the water planning in any state, and in particular for Louisiana's coastal future

# STATE CHARACTERIZATION OF WATER RESOURCES

Before *Sporhase*, states' characterizations of water as a state-owned resources insulated water restrictions from Dormant Commerce Clause challenges

- See *Hudson County Water Co. v. McCarter*, 209 U.S. 349 (1908) (state's ownership of water sufficient to justify New Jersey's prohibition on interstate transfer of surface water)

# STATE CHARACTERIZATION OF WATER RESOURCES

Sporhase rejected Nebraska's argument that its groundwater was state-owned and thus was not an article of commerce

- Characterized Nebraska's state ownership as "a legal fiction" because Nebraska commoditized and transferred water for municipal water supplies
- Emphasized the interstate nature of the water at issue, which was part of the interstate Ogallala Aquifer

# STATE CHARACTERIZATION OF WATER RESOURCES

After Sporhase, does state characterization matter?

- Yes...
  - Sporhase recognized that states have “greater ownership interest” over water than they do over other natural resources (like minnows or game birds);
  - Observed that state ownership “is not without significance” and “may not be irrelevant to commerce clause analysis”;
  - And held that state ownership informs the determination on whether restrictions are reasonable or unreasonable burdens on commerce
- But...
  - Ownership theories alone did not insulate Nebraska’s water restrictions from Dormant Commerce Clause analysis
  - “If Congress chooses to legislate in this area under its commerce power, its regulation need not be more limited in Nebraska than in Texas and States with similar property laws.”

# STATE CHARACTERIZATION OF WATER RESOURCES

## Best Practices

- States cannot rely solely on state-ownership principles to escape Dormant Commerce Clause inquiry
- Possible-- Strong state-ownership practice may impact the court's commerce clause analysis
- At Least-- Strong state-ownership practice makes water restrictions more likely to survive commerce clause challenges

# GENERALLY APPLICABLE RESTRICTIONS

Sporhase shows that the scope of a restriction greatly impacts its legitimacy under a Dormant Commerce Clause analysis

- Evenhanded restrictions evaluated by balancing test of burden imposed versus benefits to state
- “Explicit barriers to commerce” between states receive strict scrutiny for narrow tailoring to legitimate interest



# GENERALLY APPLICABLE RESTRICTIONS

“Evenhanded” versus “explicit barrier to commerce” –  
how to tell the difference

- Evenhanded– A state can burden interstate transfers differently than intrastate transfers, as long as it also restricts intrastate transfers
- E.g. in Sporhase requirements “that the withdrawal of the ground water requested is reasonable, is not contrary to the conservation and use of ground water, and is not otherwise detrimental to the public welfare” were found reasonable because there were also restrictions on in-state transfers

# GENERALLY APPLICABLE RESTRICTIONS

“Evenhanded” versus “explicit barrier to commerce” –  
how to tell the difference

- Explicit barrier to commerce–
  - A complete ban on export of water
  - A condition making export of water practically impossible
    - E.g. in Sporhase a reciprocity requirement made it impossible to export to Colorado because Colorado banned all export
  - A restriction without an in-state corollary
  - Regulation with discriminatory effect and purpose
  - Pure economic protectionism

# GENERALLY APPLICABLE RESTRICTIONS

Best practices: pursue evenhanded regulation

- Employ in-state corollaries to export restrictions
- Root restrictions in traditional water regimes, which tend to be even-handed
  - Riparian principles restricting use to riparian tracts or reasonable distances from a stream
- Link restrictions to factors other than state lines
  - Watershed-based or basin-based restrictions
  - In-stream flow requirements for ecology
  - In-stream flow requirements for navigation

# DOCUMENTING WATER SHORTAGE

A documented record of water shortage makes restrictions less likely to run afoul of the Dormant Commerce Clause

- In Dormant Commerce Clause inquiry, the main focus is whether a restriction is “economic protectionism” versus “health and safety regulation”

# DOCUMENTING WATER SHORTAGE

In *Sporhase*, the court repeatedly examined documentation of scarcity:

- In upholding evenhanded regulations, the Court emphasized evidence of shortage:
  - designation of groundwater control areas
  - declarations of shortage
  - restrictions and monitoring of in-state water use and transfers
- In finding the reciprocity requirement was not narrowly tailored, the Court emphasized a lack of evidence that
  - “the State as a whole suffers a water shortage” ,
  - “the intrastate transportation of water from areas of abundance to areas of shortage is feasible regardless of distance”
  - “the importation of water from adjoining States would roughly compensate for any exportation to those States”

# DOCUMENTING WATER SHORTAGE

Documentation of scarcity gives states more leeway in shaping evenhanded regulation

- “We are reluctant to condemn as unreasonable, measures taken by a State to conserve and preserve for its own citizens this vital resource in times of severe shortage.”

# DOCUMENTING WATER SHORTAGE

For strict scrutiny, documentation of scarcity is critical

- To survive strict scrutiny, restrictions statute must be narrowly tailored to serve legitimate interest
  - Fatal lack of documentation in Sporhase (discussed above)
  - A "demonstrably arid" state may be able to marshal evidence that a total ban on exports is narrowly tailored
- Successful documentation in Maine v. Taylor
  - Maine statute banning import of live baitfish survived strict scrutiny because Maine documented that there was no less discriminatory means of avoiding the import of parasite harmful to wild fish

# DOCUMENTING WATER SHORTAGE

Shortage must create a health and safety concern; not merely an economic concern

- Sporhase-- a state legitimately restricts water when “protecting the health of its citizens- and not simply the health of its economy”
- El Paso I-- “[A] state may discriminate in favor of its citizens only to the extent that water is essential to human survival. Outside of fulfilling human survival needs, water is an economic resource.”
- El Paso II-- recognizing that a state could invoke a limited preference for public welfare concerns other than economic ones (e.g. health, safety, recreational, aesthetic, and environmental interests)



# DOCUMENTING WATER SHORTAGE

Particular challenge for Louisiana:

How to demonstrating shortage in a “wet” state?

- Document decrease from historical levels
- Document increased consumption
- Climate change projections
- The ties between freshwater and coastal environment
- Hydrological and geophysical characteristics of particular surface and ground water sources
  - e.g. recharge rates for particular aquifers

# DOCUMENTING WATER SHORTAGE

## Best Practices:

- Document shortage as much as possible
- Focus documentation on the health and safety concerns that water restrictions address
  - Healthy, safety, recreational, aesthetic, environmental
- Create a record linking the tailoring of the regulation to the health and safety concerns
  - E.g. why is intrastate transport of water not sufficient to address concerns?

# WATER COMPACT LANGUAGE

When waters are subject to a compact, the validity of restrictions will focus on the compact language rather than the Sporhase Dormant Commerce Clause inquiry

- See Tarrant

Water compacts can insulate restrictions from Dormant Commerce Clause challenges

- Because Congress must approve a compact, it operates as federal law and thus cannot interfere with interstate commerce

# WATER COMPACT LANGUAGE

## Best practices

- Know the compact language well, and shape regulations in light of the terms and nature of the compact
- Rely on a compact to the extent possible because that gives states more flexibility

# BUILDING WATER RESTRICTIONS TO SERVE COASTAL FRESHWATER NEEDS

- Louisiana's strong characterization of water as state-owned is helpful, but likely not sufficient to insulate restrictions from commerce clause review
  - It may help to justify the restrictions, however
- Louisiana's water restrictions should be evenhanded; they need not treat out-of-state uses the same as in-state uses, but there should be corollary in-state restrictions
  - If possible, link restrictions to criteria other than state lines
- Louisiana has the challenge of demonstrating shortage
  - Restrictions need to highlight the importance of freshwater to coastal environments; highlight health and safety concerns
- Operate under a compact if possible
  - This allows greater flexibility