Texas Water Development Board

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TO: The Honorable Craig Estes, Co-Chair, Joint Interim Committee to Study Water Desalination
The Honorable Todd Hunter, Co-Chair, Joint Interim Committee to Study Water Desalination

FROM: Carlos Rubinstein, Chairman

DATE: July 2, 2014

SUBJECT: Committee Testimony Follow Up from June 30, 2014

The Committee requested the following information relating to average rate payer costs for existing desalination water.

The cost estimates below are sourced from comparing water rates before and after construction of desalination plants. Costs shown may include other infrastructure or rate increases unrelated to desalination. An assumed volume of 6,500 gallons was used for an average monthly use.

- El Paso: adds $3.40 per month (a 22 percent increase)
- Brownsville: adds $0.30 per month (a 1.5 percent increase)
- North Alamo: adds $1.65 per month (a 7 percent increase)
- San Antonio: expected to add $1.21 per month (a 5 percent increase)
- San Diego, California: expected to add $5 to 7 per month (a 7 to 10 percent increase)

The numbers below are average unit project costs as reflected in the state water plan and generally include all infrastructure (such as pipelines) to bring projects online. Please note that while this data serves as a comparison of average cost, it does not reflect the differences relative to water availability, and more importantly, reliability. Such factors must also be considered in determining the best option to provide additional water supplies and to what degree the selected water management strategy or strategies result in developing a more drought resilient source of water.

- Seawater desalination: $2,076 an acre-foot ($6.37 per 1,000 gallons)
- New major reservoir: $1,014 an acre-foot ($3.11 per 1,000 gallons)
- Brackish groundwater desalination: $978 an acre-foot ($3.00 per 1,000 gallons)
- Other surface water: $862 an acre-foot ($2.64 per 1,000 gallons)
- Reuse: $770 an acre-foot ($2.36 per 1,000 gallons)
- Groundwater: $685 an acre-foot ($2.10 per 1,000 gallons)
- Municipal conservation: $310 an acre-foot ($0.95 per 1,000 gallons)

Committee members' questions about biennial reports TWDB sends to the Legislature on seawater desalination.

The TWDB provides recommendations to the Legislature as part of preparing our biennial report on seawater desalination. The Board in past reports has highlighted the amount of funding that would be necessary to facilitate construction of a potential first seawater desalination plant(s) in Texas as well as funding for studies and pilot projects to advance seawater desalination in Texas.

The last biennial report (2012) included the following:

(1) $3.5 million a biennium to conduct more research and piloting to advance seawater desalination in Texas,
(2) $9.5 million in grants to support the construction of a $22.5 million seawater desalination plant for Brownsville, and
(3) $5 million in grants to support the construction of a $13.5 million seawater desalination plant for the Laguna Madre Water District.

Fixed costs for water development projects in the San Antonio area, such as groundwater desalination plants, seawater desalination plants, and other strategies.

Costs for strategies in Region L:

- Seawater desalination: $2,284 an acre-foot ($7.00 per 1,000 gallons)
- New reservoir: $1,879 an acre-foot ($5.76 per 1,000 gallons)
- Groundwater import: $1,523 an acre-foot ($4.67 per 1,000 gallons)
- Groundwater desalination: ~$1,500 an acre-foot ($4.60 per 1,000 gallons)
- Municipal conservation: $648 an acre-foot ($1.99 per 1,000 gallons)
- Groundwater: $644 an acre-foot ($1.98 per 1,000 gallons)

Information on cost data relative to new LCRA off-channel reservoirs

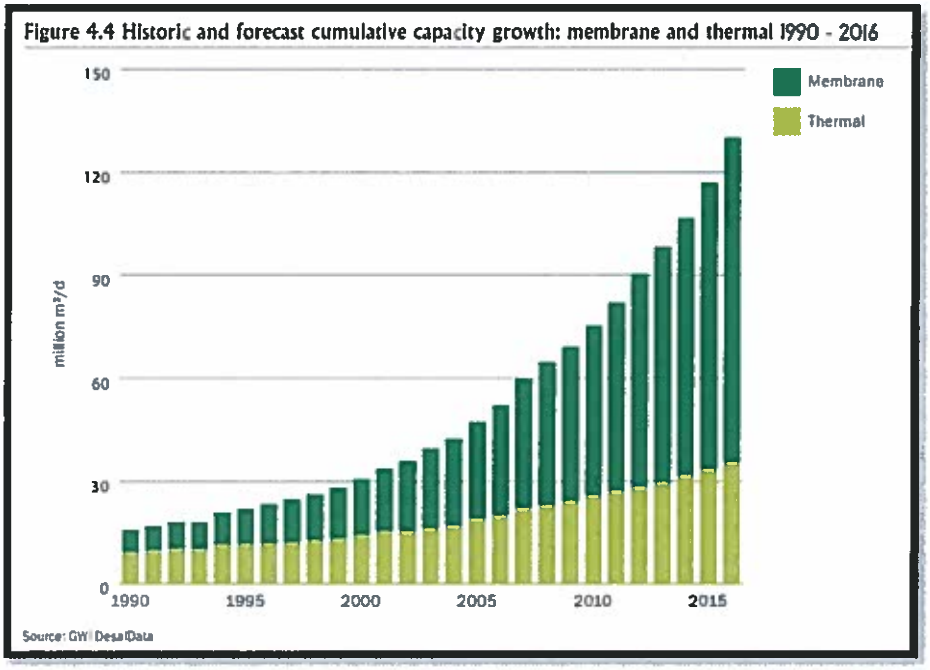
The updated cost estimate for the 40,000 acre-foot storage and 90,000 acre-foot per year firm yield project with the LCRA is $214.9 million (breakdown listed below). The TWDB fund application is for $250,000,000 and includes other costs such as bond counsel and issuance cost.

- Construction Costs: $152,800,000
- Engineering, Legal, and Contingency: $30,400,000
- Land Acquisition: $10,800,000
- Relocations, Surveying, and Permitting: $20,900,000

Total Costs $214,900,000

The Committee also requested data relative to worldwide reliance of desalination. Attached is a graph that highlights that growth from 1990 – current.

Attachment: Graph highlighting growth from 1990 - current



Source: Global Water Intelligence Desaldata (http://desaldata.com/)

1 million cubic meters per day = 264 million gallons per day