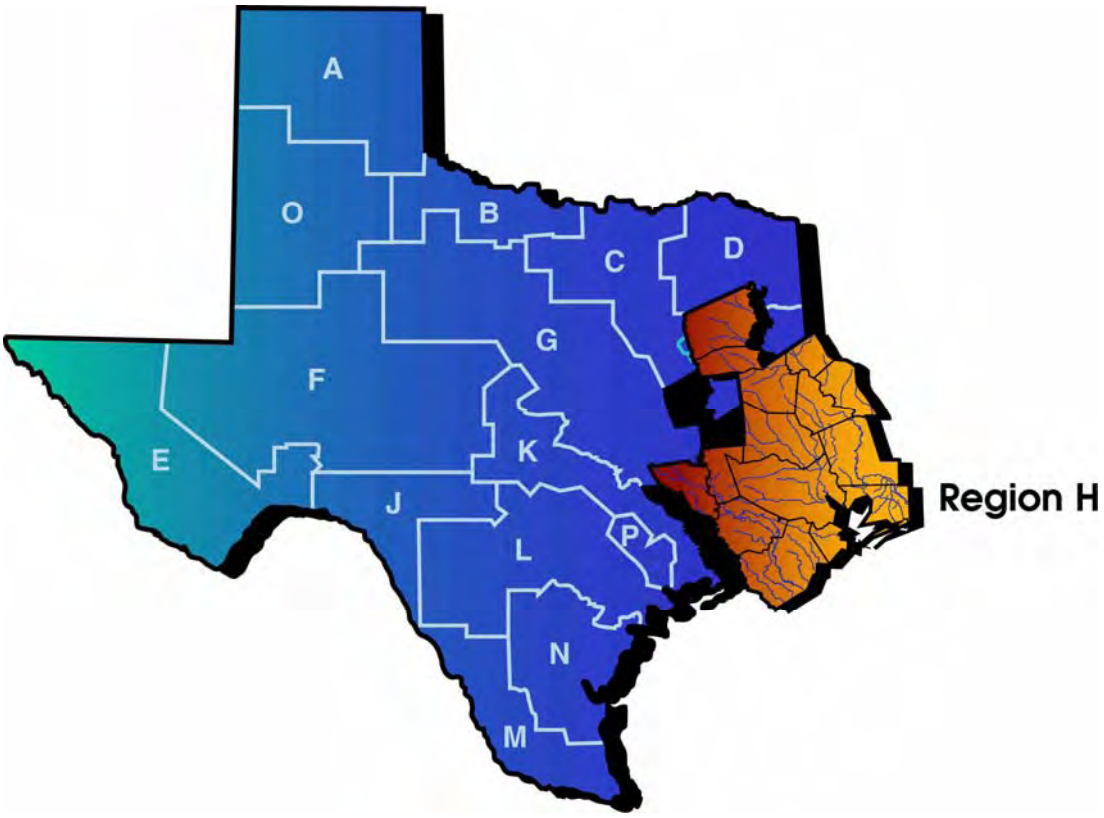
REGION H
WATER PLANNING GROUP



MEETING MATERIALS
August 6, 2008

Region H Water Planning Group
10:00 AM Wednesday
August 6, 2008
San Jacinto River Authority Office
Lake Conroe Dam
1577 Dam Site Rd.
Conroe, Texas

Agenda

1. Introductions.
2. Review and approve minutes of May 28, 2008 meeting.
3. Receive public comments on specific issues related to agenda items 4 through 13. (Public comments to be limited to 3 minutes per speaker).
4. Accept the resignation of James Murray as a voting member of the Region H Regional Water Planning Group representing Industries.
5. Consider and take action on the nomination of Ms. Glynna Leiper to serve as a voting member on the Region H Regional Water Planning Group representing Industries and replacing James Murray.
6. Accept the resignation of Jason Fluharty as a voting member of the Region H Regional Water Planning Group representing Electric Generating Utilities.
7. Consider and take action on the nomination of Mr. Ted Long to serve as a voting member on the Region H Regional Water Planning Group representing Electric Generating Utilities and replacing Jason Fluharty.
8. Receive presentation by Pudge Willcox, General Manager, Chambers Liberty County Navigation District, on status of current activities related to development of a proposed surface water treatment plant in West Chambers County and the proposed plan amendment to the 2006 Region H RWP.
9. Consider and take action, if needed, on the proposed plan amendment related to Item 8 above.
10. Receive presentation by Melinda Silva with Brown & Gay Engineers on the status of current and planned activities associated with the North Fort Bend Water Authority.
11. Receive update from Matt Nelson with the TWDB on the status of ongoing activities related to the Boards Draft Report “Water Demand Projections for Power Generation in Texas”.
12. Receive presentation from Consultant on the current status and progress of regional water planning.
13. Receive updates by local water agencies or other interested parties regarding any water related initiatives or projects currently underway or planned.
14. General public comments. (Public comments to be limited to 3 minutes per speaker)
15. Agency communications.
16. Next Meeting: TBD
17. Adjourn.

Agenda Item 2

Review and approve minutes of May 28, 2008 meeting.

MINUTES
REGION H WATER PLANNING GROUP MEETING
10:00 A.M.
MAY 28, 2008
SAN JACINTO RIVER AUTHORITY OFFICE
LAKE CONROE DAM
1577 DAM SITE ROAD
CONROE, TEXAS

MEMBERS PRESENT: Roosevelt Alexander, John Baker, John R. Bartos, John Blount, Robert Bruner, Reed Eichelberger, Mark Evans, Jason Fluharty, Jack Harris, Bob Hebert, Robert Istre, Ronald Neighbors, Jimmie Schindewolf, Jeff Taylor, William Teer, Steve Tyler, C. Harold Wallace, Mike Uhl, Danny Vance, and Pudge Willcox.

DESIGNATED ALTERNATES: Tom Michel for Marvin Marcell, and Glynna Leiper for James Murray.

MEMBERS ABSENT: John Howard, James Morrison, James Murray, and Marvin Marcell.

NON-VOTING MEMBERS PRESENT: Temple McKinnon and Rebecca Hensley.

PRESIDING: Jeff Taylor, Chairman

CALL TO ORDER PUBLIC HEARING AT 10:05 A.M.

Ron Neighbors introduced the members of the Scoping Committee and gave a summary of the committee's work. Mike Reedy gave an overview of the scope of work and TWDB planning grant application for development of the 2011 Region H Regional Water Plan. He discussed Task 0 – Task 10, the major issues pertaining to same, and the need for supplemental funding. Jeff Taylor discussed the June 13, 2008 deadline to submit scope to TWDB. Temple McKinnon commented on the application process and contract for same.

RECEIVE PUBLIC COMMENTS

Ken Kramer with the Lone Star Chapter of the Sierra Club commented on the scope of work and complimented the Region H website. He voiced support for the supplemental funding request related to water conservation and encouraged the use of demand management to meet monthly or daily shortages. He also encouraged evaluation of successful water conservation plans in other regions to see how they compare with plans in Region H. He stated that the Sierra Club opposes Bedias Reservoir and that other strategies would be better.

Dan Davis expressed his appreciation for Region H's work. He expressed support for Bedias Reservoir and explained that it would mitigate issues related to the use of Lake Conroe surface water. He discussed the role of water conservation in future planning. He encouraged the legislature to fund research with the objective of determining an acceptable method of using treated effluent for direct injection into potable water treatment plants. Mr. Davis explained that

he was a member of the Lake Conroe Communities Network and the Walden Community Improvement Association, and that he was a director on Montgomery County MUD 8, but that he was testifying in his individual capacity.

Jackie Chance commented on the environmental flows into Galveston Bay and the reduction of same when the groundwater conversion takes place and emphasized the need to study potential impacts. He encouraged the construction of more reservoirs and requested that TCEQ request drought contingency plans and water conservation plans from smaller systems also.

Jerry Fannin requested that Madison County have a representative on Region H. He expressed his concern regarding consideration of Bedias Reservoir as a potential management strategy.

Gerald Jozwiak, a Madison County resident, stated that he opposed the construction of Bedias Reservoir and wants it removed from Region H Plan completely. He commented on the wetlands, hardwood forests, wildlife, and the negative economic impacts on agriculture that this reservoir would have on their community. He echoed previous comments on the need to reduce the demand for water through conservation. He stated that additional reservoirs would not be needed if Montgomery County residents reduced their deman through conservation.

Art Henson, County Judge for Madison County, expressed opposition to Bedias Reservoir and requested that the impacts on agriculture and the local tax base be considered in planning for surface water. He requested a seat on the Region H Planning Group and stated that a formal request would be forthcoming.

Mike Reedy summarized written comments received from Ronald Rushing, Senator Robert Nichols, Representative Brandon Creighton, Angela Fannin, and Dan Davis.

ADJOURN PUBLIC HEARING AT 10:55 A.M.

CALL TO ORDER REGULAR MEETING OF THE REGION H RWPG AT 11:00 A.M.

CONSIDER A MOTION TO AUTHORIZE THE REGION H PLANNING GROUP SCOPING COMMITTEE TO FINALIZE AND APPROVE A PLANNING GRANT APPLICATION FOR DEVELOPMENT OF THE 2011 REGION H REGIONAL WATER PLAN AND SUBMIT TO THE TWDB ON BEHALF OF THE REGION H WPG

There was additional discussion related to Bedias Reservoir. Jeff Taylor inquired as to the status of Bedias. Mike Reedy stated that it had been removed as a management strategy, but has been included as an alternate strategy. Jeff Taylor reminded the audience that currently 100% of Region H demands are met without using alternate strategies. Mike Reedy explained that for the future scope, new demands will be considered and strategies will need to be considered if new shortages are revealed. John Bartos and Jeff Taylor discussed the procedure for choosing

strategies. Danny Vance discussed the 19 designated reservoir sites and the fact that the designation expires in 2015.

Further discussion ensued regarding various issues raised during the public comment period and how they would be considered in the scope as presented. A motion was made by Ron Neighbors to approve the scope of work as presented and to authorize the Scoping Committee to finalize and approve a planning grant application for development of the 2011 Region H Regional Water Plan to be submitted to the TWDB; seconded by John Bartos. The motion carried unanimously.

MINUTES OF FEBRUARY 6, 2008 MEETING

A motion was made by Danny Vance to approve the minutes of the February 6, 2008 meeting; second by Jack Harris. The motion carried unanimously**.**

PUBLIC COMMENTS ON AGENDA ITEMS 4 – 10

Jerry Fannin commented regarding a potential power plant that was considering locating in Madison County with a projected demand for groundwater of 8,100 acre-feet per year. He asked if the Region H Planning Group had any impact on this project. Mr. Taylor explained that the Region H Planning Group serves a purely planning role and that any data related to future water demands is incorporated into the regional plans.

CONSIDER A MOTION TO INCLUDE THE NORTH FORT BEND WATER AUTHORITY AS A NON-VOTING MEMBER OF THE REGION H WATER PLANNING GROUP

After brief discussion, motion was made by Tom Michel to include the North Fort Bend Water Authority as a non-voting member of the Region H Water Planning Group; seconded by John Blount. The motion carried unanimously.

RECEIVE PRESENTATION FROM JEFF TAYLOR RELATED TO CITY OF HOUSTON SOURCE WATER PROTECTION PROGRAM

Jeff Taylor introduced Dannelle Belhateche who gave an overview of the City of Houston's initiative to protect source water quality. She discussed the Safe Drinking Water Act and the multi-barrier approach to public health protection. She then discussed the City of Houston's Source Water Protection Program that includes a Source Water Protection Policy and a Source Water Quality Management Strategy. Also discussed was Houston's drinking water sources and water quality of same. Potential stakeholder groups were discussed and participation requested. Jeff Taylor elaborated on their goals and the need for community involvement. Robert Bruner commented on sedimentation in Lake Houston and the need to educate homeowners regarding herbicides, chemicals, and their personal impact on contamination.

RECEIVE PRESENTATION FROM KATHY JONES ON THE CURRENT GROUNDWATER REGULATORY PLAN FOR THE LONE STAR GCD

Kathy Jones gave an overview of the current regulatory program of the Lone Star Groundwater Conservation District. She discussed the long-term water outlook for Montgomery County and current demands on the aquifers. She discussed the current population and demand projections. Also discussed was the District Regulatory Plan (Phase I and Phase II), including the strategies and status of same. She also touched on LSGCD's support of the Water IQ campaign and other print media (to be released in June 2008) that will promote community awareness of water conservation.

RECEIVE BRIEFING BY PUDGE WILCOX ON A PROPOSED AMENDMENT TO THE 2006 REGION H RWP

Pudge Wilcox briefed everyone on an amendment being proposed to the 2006 Region H Water Plan by the Chambers-Liberty County Navigation District. He explained that in order for CLCND to request funding from the TWDB, CLCND's proposed project to construct a 2.5 MGD surface water treatment facility to provide wholesale potable water to the area of West Chambers County and Southwest Liberty County must be included in the 2006 Region H Water Plan. He discussed the ongoing negotiations and stated that they are almost complete. Temple McKinnon discussed the amendment process and the criteria that must be met. Jeff Taylor inquired as to the funds needed and the availability of same for amendment. Mr. Reedy addressed questions concerning the process for a full plan amendment or minor amendment and the costs related to each.

RECEIVE PRESENTATIONS FROM CONSULTANT ON THE CURRENT STATUS AND PROGRESS OF REGIONAL WATER PLANNING

Mike Reedy with TCB and Mike Personett with KBR updated the group on the current status and progress of regional water planning. Mike Reedy discussed the environmental flows investigation and the impacts of recommended water management strategies on Galveston Bay. John Howard asked for the definition of "full diversion" as used in the meeting materials. On Task 3 – Interruptible Supplies, Mike Personett addressed the individual strategies and the availability of firm surface water supplies. Chris Krueger then gave a summary on surface water, both municipal and industrial demands, and the availability of permitted and unpermitted interruptible supply. Mike Personett concluded by discussing the questions to be addressed with the next phase of analysis.

RECEIVE UPDATES BY LOCAL WATER AGENCIES OR OTHER INTERESTED PARTIES REGARDING ANY WATER RELATED INITIATIVES OR PROJECTS CURRENTLY UNDERWAY OR PLANNED

Temple McKinnon brought everyone's attention to Tab 12 of their meeting materials, which included agency communications. Temple discussed her memo to the board of the TWDB dated April 21, 2008 concerning anticipated amendments to qualify projects for state water plan funding. She also addressed earlier comments regarding water demand projections for power generation in Texas. She then discussed the process for entities to submit a statement of interest for federal funding under the Texas Environmental Infrastructure Program.

Rebecca Hensley had no update regarding the TPWD.

GENERAL PUBLIC COMMENTS

Jackie Chance emphasized that conservation needs to be the most important effort considered for future water planning. He suggested revising rates for water usage to an inclining block structure in an attempt to cut demands.

AGENCY COMMUNICATIONS

NEXT MEETING

August 6, 2008
San Jacinto River Authority
Lake Conroe Dam
1577 Dam Site Road
Conroe, Texas 77304

ADJOURNED AT 1:35 P.M.

Agenda Items 4 and 5

Accept the resignation of James Murray as a voting member of the Region H Regional Water Planning Group representing Industries.

Consider and take action on the nomination of Ms. Glynna Leiper to serve as a voting member on the Region H Regional Water Planning Group representing Industries and replacing James Murray.

TEXAS OIL & GAS ASSOCIATION

June 13, 2008

Mr. Jeff Taylor, Chair
Region H Water Planning Group
c/o San Jacinto River Authority
P.O. Box 329
Conroe, Texas 77305

Re: Nomination of Ms. Glynna Leiper as a Member of Region H Water Planning Group

Dear Mr. Taylor:

The purpose of this letter is to nominate Ms. Glynna Leiper as a member of the Region H Water Planning Group to replace Mr. James Murray as the individual representing the petroleum refining industry.

Texas Oil and Gas Association (TxOGA) is a trade association which represents the interests of the petroleum industry, including petroleum refining, in the state of Texas. As one measure of the importance of the petroleum refining industry in this area, I note that more than 10% of the total petroleum refining capacity in the United States lies within the 15 counties in Region H.

Following the passage of Senate Bill 1 (SB1) by the 1997 Texas Legislature, TxOGA was contacted by the Texas Water Development Board and asked to submit a nomination for representation on the Region H Water Planning Group that was being organized under SB1. At that time, TxOGA nominated Mr. James Murray, an employee of the Exxon Baytown Refinery, to represent the petroleum refining industry in the 15-county area of Region H. Mr. Murray was subsequently appointed to the Region H Water Planning Group and has served on that group since its inception.

Recently, Mr. Murray has informed us of his intention to retire from ExxonMobil in early 2009 and, consistent with a smooth transition, to resign from the Region H Water Planning Group. Given the importance and large usage of water by the petroleum refining industry, TxOGA continues to believe it is appropriate that our industry be represented on the Region H Water Planning Group. Consequently, we are pleased to nominate Ms. Glynna Leiper as a replacement for Mr. Murray.

304 West Thirteenth Street • Austin, Texas 78701-1823 • Telephone: 512/ 478-6631 • Fax: 512/ 472-3859

Ms. Glynna Leiper is an employee of ExxonMobil in Baytown, Texas in Harris County (one of the counties covered by Region H). She has been employed by ExxonMobil for more than 11 years and works in the Environmental Department. She supports the Baytown Refinery in a variety of environmental activities and has particular expertise in the water area. We believe Ms. Leiper will bring valuable insight in her participation in the Region H Water Planning Group.

If you have any questions, please feel free to call me at (512) 478-6631. I look forward to hearing from you.

Robert L. Looney

President
Texas Oil & Gas Association

RLL:ad

Agenda Items 6 and 7

Accept the resignation of Jason Fluharty as a voting member of the Region H Regional Water Planning Group representing Electric Generating Utilities.

Consider and take action on the nomination of Mr. Ted Long to serve as a voting member on the Region H Regional Water Planning Group representing Electric Generating Utilities and replacing Jason Fluharty.

From: Fluharty, Jason [mailto:Jason.Fluharty@nrgenergy.com]
Sent: Friday, May 23, 2008 2:21 PM
To: Jeff Taylor; Jace Houston
Cc: Long, Ted
Subject: Resignation from Region H Water Planning Group

Please accept this notice for my resignation as Voting Member representing Electric Generation in the Region H Water Planning Group. I have accepted a new position within my company and will no longer be directly working with water supply for the company's electric generating stations. I have thoroughly enjoyed my time as part of Region H and wish you much success in the future.

As such, I would like to nominate my current Region H alternate, Mr. Ted Long, as my replacement as Voting Member to the Water Planning Group.

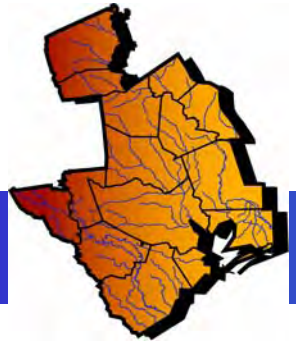
Best Regards,

Jason Fluharty

NRG Energy

Agenda Item 12

Receive presentation from Consultant on the current status and progress of regional water planning.

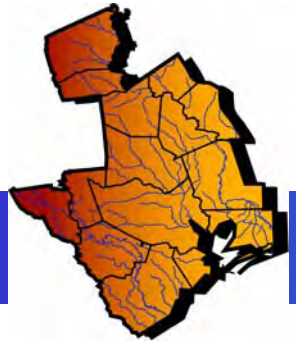


Region H
Water Planning Group

Region H Water Planning Group

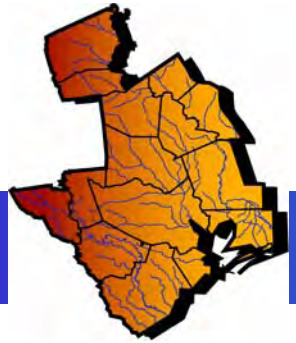
Consultants Report

August 6, 2008



Region H
Water Planning Group

Environmental Flows Investigation



Environmental Flows

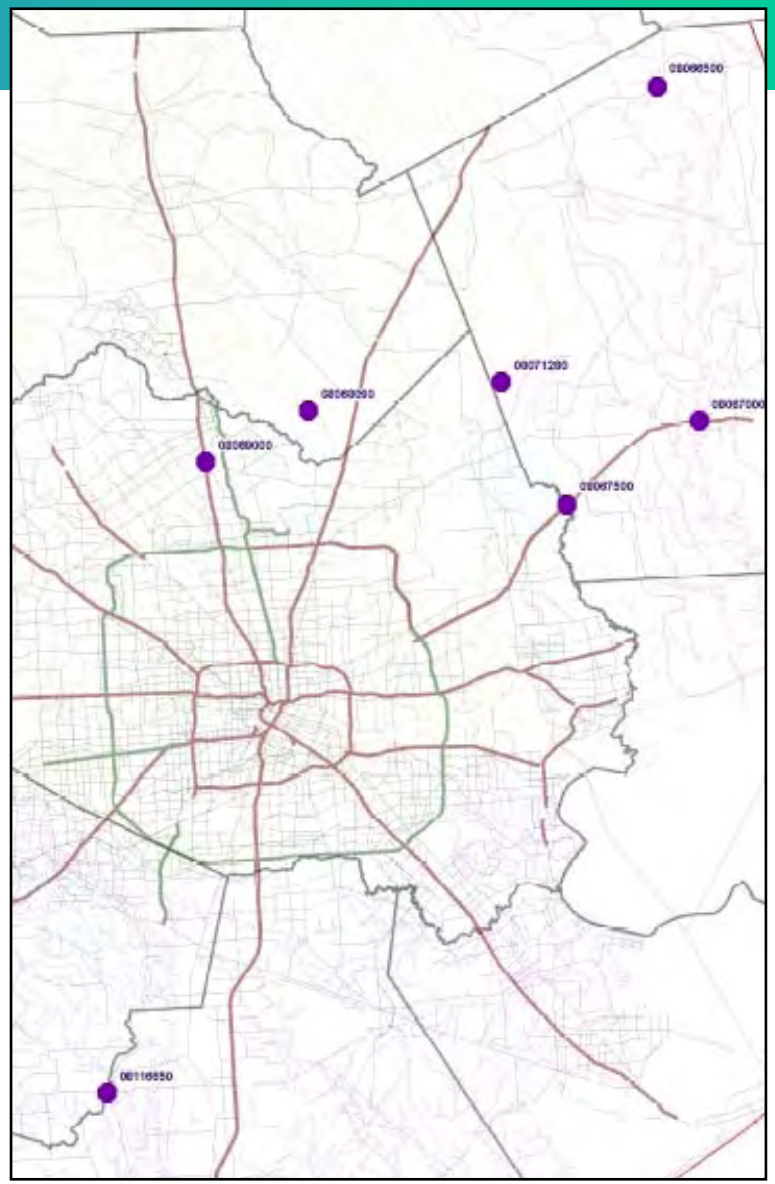
- Bay and Estuary Study
  - Completed strategy model runs
- Instream Flows Study
  - Identification of critical stream segments for WMS impacts
  - Determination of Lyons flow conditions
  - Field evaluation of instream flow conditions

- Critical Stream Segments Within Region H
  - Developed from list provided to TWDB for "Streamflow Assessments" study (26)
  - Seven segments identified in the Brazos, San Jacinto, San Jacinto-Trinity, and Trinity Basins selected for field study
  - Determined impacts from each strategy on the 26 segments to identify which segments receive the greatest impacts from strategies

- Field Study
  - Identified segments with:
    - Access for field study
    - Readily available streamflow measurement (USGS)
    - Reliable flow output in WRAP
  - Compared observed flows to Lyons flows developed for each segment and recorded pertinent ecological information
  - Channel Flow Status – TCEQ SWQM Procedures
    - High: < 5% Channel Substrate Exposed
    - Moderate: 5-25% Channel Substrate Exposed
    - Low: >25% Channel Substrate Exposed

Environmental Flows
Instream Flows Study

- Trinity River
- Cedar Bayou
- San Jacinto River
  West Fork
- Cypress Creek
- Luce Bayou
- Brazos River



Trinity River at Romayor
CP 8TRRO

8TRRO (T)	Lyons	Observed
Flow (cfs)	1097.7	1000.0
Stage (ft)	12.2	11.2

Lyons flows given for July. Lyons stage estimated from USGS data.

- Moderate Channel Flow Status
- No potential wetlands recognized
- Small riparian corridor observed

Trinity River at Liberty
CP 802

802 (T)	Lyons	Observed
Flow (cfs)	1217.4	<10,000
Stage (ft)	5.9	5.5

Lyons flows given for July. Lyons stage estimated from USGS data.

- Moderate Channel Flow Status
- No potential wetlands recognized
- Small riparian corridor observed

Cedar Bayou near Crosby
CP 9CBCR

9CBCR (T-SJ)	Lyons	Observed
Flow (cfs)	3.8	0.6
Stage (ft)	7.5	6.3

Lyons flows given for July. Lyons stage estimated from USGS data.

- Low Channel Flow Status
- No potential wetlands recognized
- No riparian corridor observed

Luce Bayou near Huffman
CP A3979A

A3979A (SJ)	Lyons	Observed
Flow (cfs)	12.1	0.2
Stage (ft)	9.0	7.6

Lyons flows given for July. Lyons stage estimated from USGS data.

- Low Channel Flow Status
- Potential fringe wetlands recognized
- Potential riparian corridor observed

W Fork San Jacinto near Porter
CP 1004

1004 (SJ)	Lyons	Observed
Flow (cfs)	39.8	23.0
Stage (ft)	10.9	10.4

Lyons flows given for July. Lyons stage estimated from USGS data.

- Moderate Channel Flow Status
- Potential wetlands recognized in sloughs
- Some potential riparian corridor observed

Cypress Creek near Westfield
CP 1009

1009 (SJ)	Lyons	Observed
Flow (cfs)	40.2	30.0
Stage (ft)	3.9	3.4

Lyons flows given for July. Lyons stage estimated from USGS data.

- High Channel Flow Status
- No potential wetlands recognized
- No riparian corridor observed

Brazos River near Rosharon
CP 532801

532801 (B)	Lyons	Observed
Flow (cfs)	1118.1	208.0
Stage (ft)	9.2	4.8

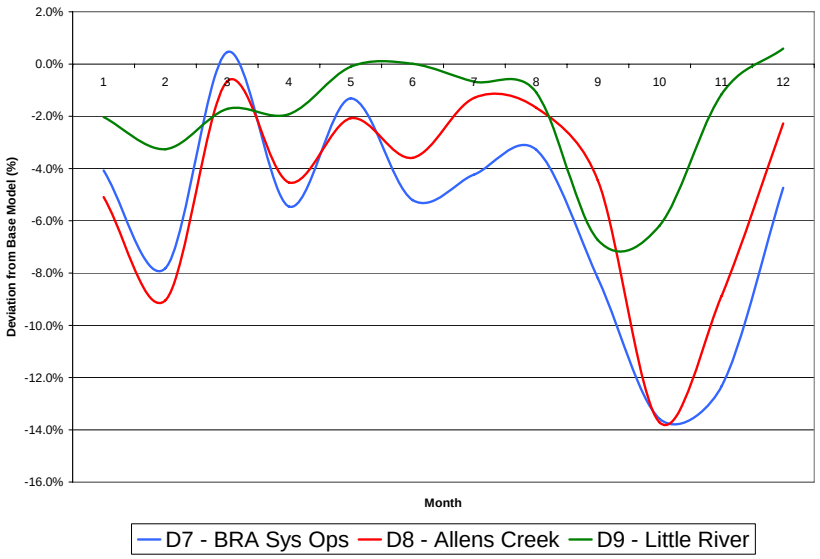
Lyons flows given for July. Lyons stage estimated from USGS data.

- Low Channel Flow Status
- No potential wetlands recognized
- No riparian habitats observed

- WMS Impacted Stream Segments
  - Which stream segments are most impacted (higher/lower flows) from each WMS
  - Based on percent change in total median flow rates from strategy mode to Baseline D Model
  - Includes increases and decreases in stream flow due to import and export of water supplies
  - Modeled strategies had greatest impacts on six identified segments in Brazos and San Jacinto River Basins.

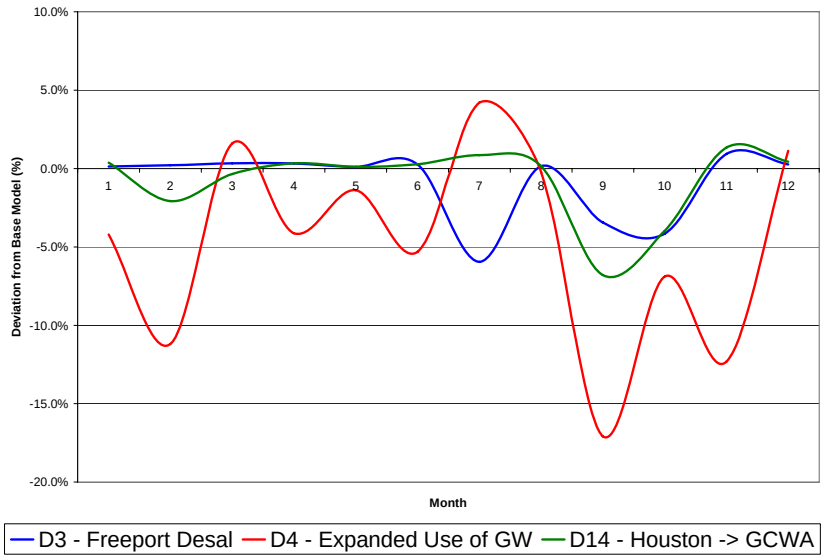
Brazos CP 532801

- Allens Creek: -11.9%
- BRA Sys Ops: -5.7%
- Little River: -4.1%



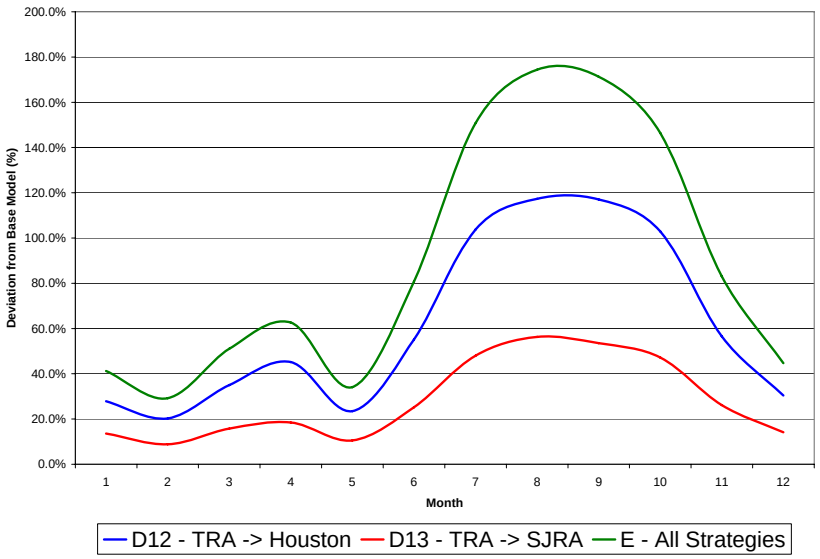
Brazos CP CON238

- Expanded GW: -7.0%
- Freeport Desal: 0.7%
- Houston -> GCWA: 0.7%



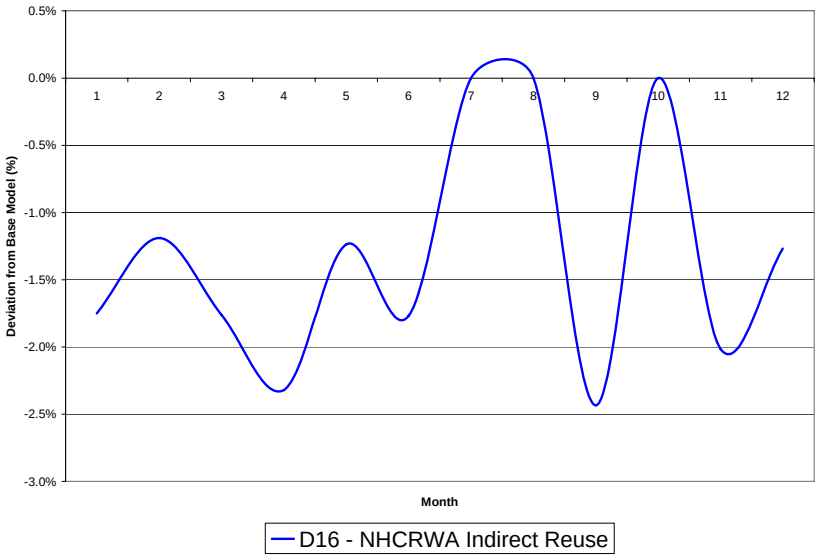
San Jacinto CP SPSP

- All Strategies: 82.5%
- TRA -> Houston: 56.7%
- TRA -> SJRA: 25.4%



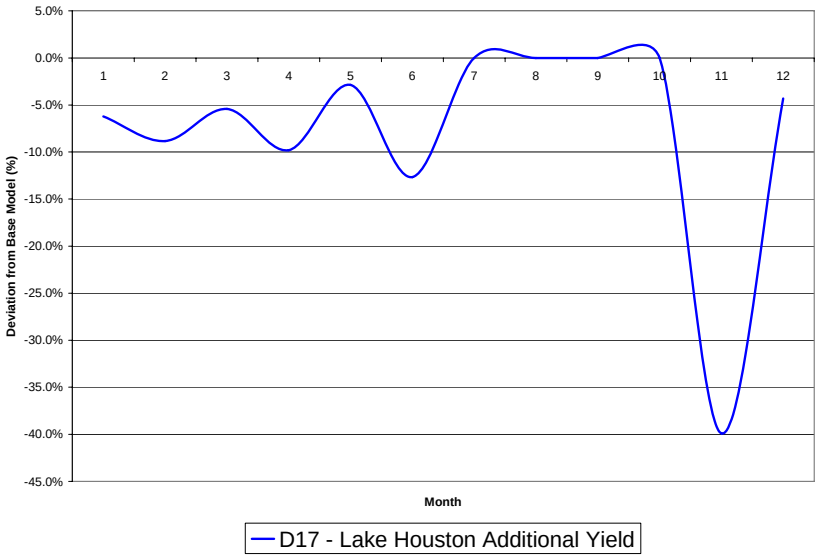
San Jacinto CP 1009

- NHCRWA Reuse: -1.5%



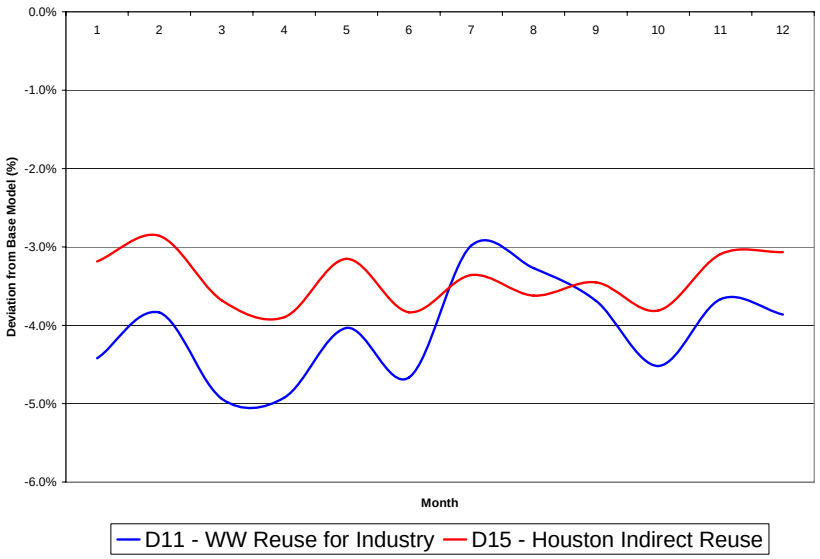
San Jacinto CP A4964A

- Lake Houston Yield: -19.2%



San Jacinto CP A5191P

- Industrial Reuse: -4.5%
- Houston Indirect Reuse: -3.6%

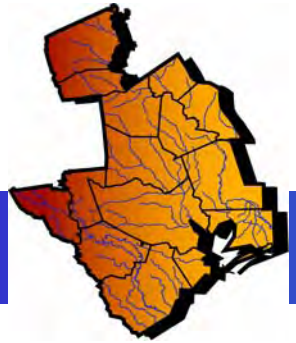


Summary

- Calculated Lyons flows conditions exceeded observed conditions for all stations visited.

- Channel flow status at conditions less than the Lyons flow were found to range from “Low” up to “High” status.

- Segments were identified with the greatest impacts from individual strategies
  - TRA -> Houston: + 56.7%
  - Lake Houston Additional Yield: -19.2%



Region H
Water Planning Group

Impact of Drought Management Strategies on Surface Water Reservoirs in Region H

Task 2 – Drought Management

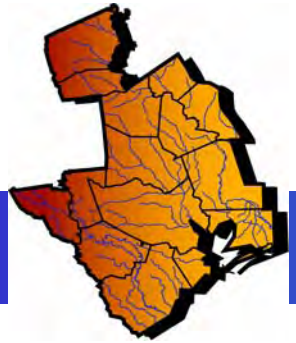
Key Question:

Can a strategy of implementing drought response measures (e.g., staged curtailment of water demands) within Region H during critical drought periods be used in lieu of strategies to develop additional water supplies to meet projected demands?

Scope of Work:

A. Assess the scope and efficacy of drought contingency planning within Region H.

B. Evaluate the relative impact of drought management strategies to existing and future water supplies in Region H.



What is drought management?

Drought Management 101

Drought Impacts on Water Utilities:

- Reduced water supply
- Increased water demand
- Stress on water utility infrastructure
- Deterioration of source water quality
- Financial

Key Principals of Drought Contingency Planning:

- Drought and its impacts on both supply and demand can be anticipated.
- Drought response measures and implementation procedures can be defined in advance of drought.
- Through timely implementation of drought response measures it's possible to avoid, minimize, or mitigate the risks and impacts of water shortages and other drought-related water supply emergencies.
- All water demands are not of equal value or importance. Some can be considered essential to public health and safety or to the economy. Others are non-essential or discretionary.

Common Elements of Drought Contingency Plans:

- Criteria and procedures for triggering and terminating drought response measures
- Successive stages of drought response (3-4 is typical)
- Predetermined drought response measures:
  - Supply management (e.g., temporary use of alternative source)
  - Demand management (e.g., restrictions on non-essential water uses)
- Procedures for plan implementation and enforcement
- Public information (notification) and education

Efficacy of Drought Response Measures:

Focus of current study is on demand management measures, specifically:

Demand Curtailment - Temporary curtailment or restriction of water use in response to temporary and potentially recurring water supply shortages or other water supply emergencies (e.g., capacity limitations, equipment outages).

NOT

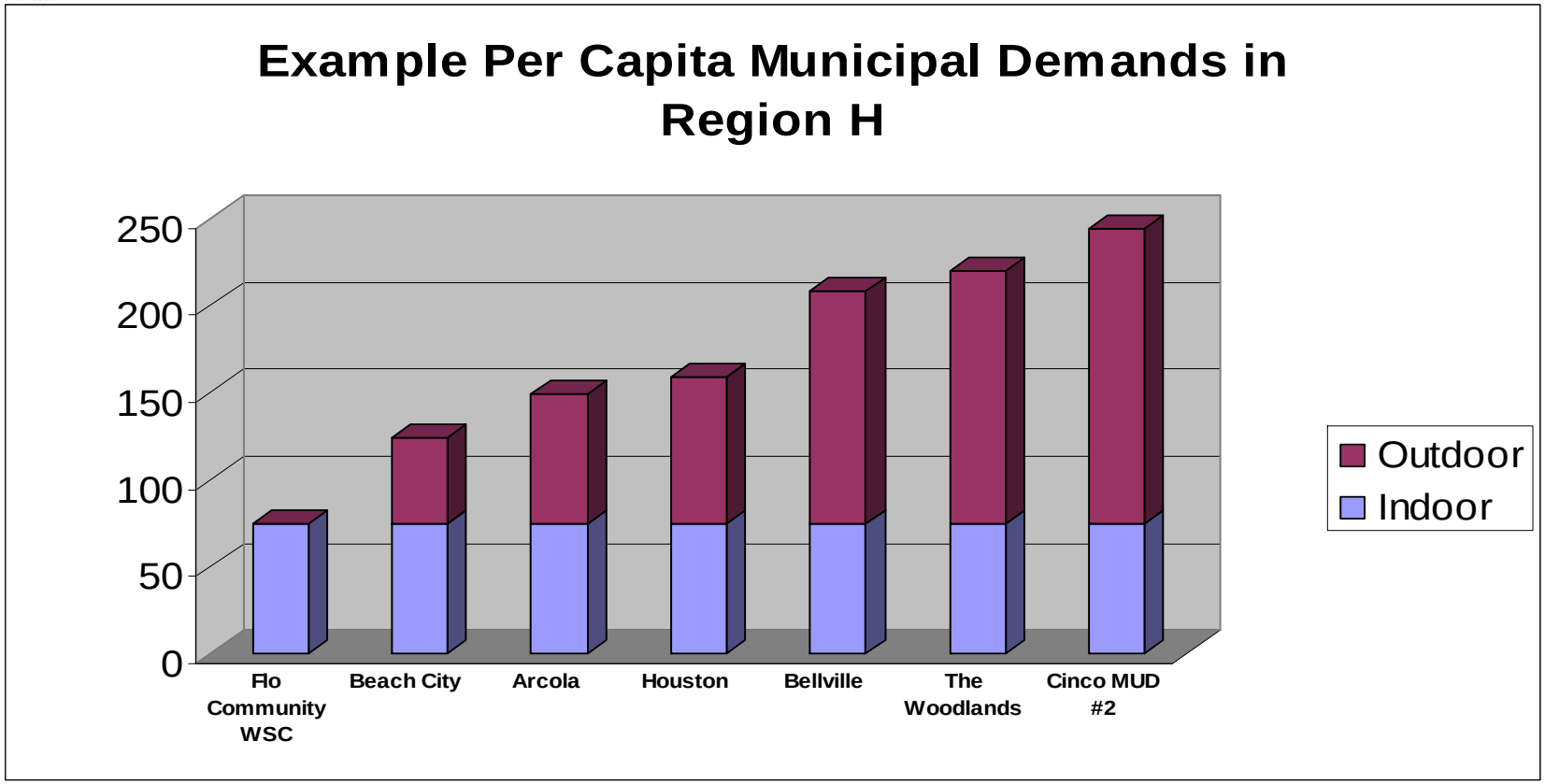
Conservation - Lasting, long-term reductions in water use through improved efficiency and reduced waste.

Demand Curtailment:

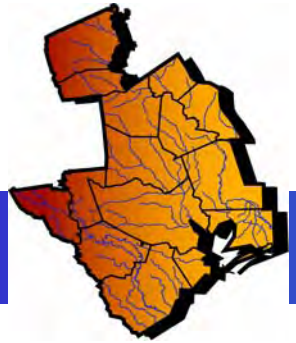
- Prescriptive restrictions or bans on non-essential water uses and waste:
  - Voluntary/mandatory restrictions on landscape irrigation, car washing, ornamental fountains, etc.
  - Prohibitions on waste
- Pricing to penalize excessive water use
- Rationing – per capita or household allocations

Predicting the efficacy or effectiveness of demand curtailment measures is very difficult because:

- Water use is highly variable within and among communities due to climatic, demographic, and socioeconomic differences
- Degree of enforcement
- Drought response in a municipal water use setting is largely behavioral and is often affected by:
  - The degree to which the public believes there is a problem
  - Perceptions about enforcement
  - Peer pressure
  - Community spirit



Note: The actual split between indoor and outdoor water use in these communities is not known. This is offered simply as an illustration for the variability of seasonal (i.e., outdoor) water use among different communities.



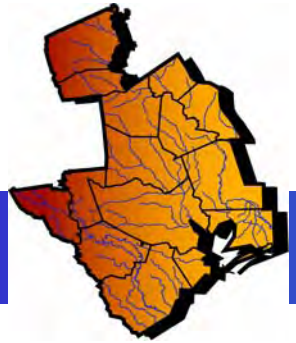
Region H
Water Planning Group

Drought Management 101

Drought Contingency Stage	Entity	Demand Reduction Target	Drought Contingency Stage	Entity	Demand Reduction Target
Stage I	City of Houston, TX	10%	Stage II	City of Houston, TX	10%
	Galveston, TX	0%		Galveston, TX	10%
	Santa Barbara, CA	10%		San Diego, CA	20%
	Peoria, AZ	5%		Peoria, AZ	10%
	South Florida Water Management District (SFWMD), FL	0%		South Florida Water Management District (SFWMD), FL	15%
	Denver, CO	10%		Denver, CO	30%
Stage III	City of Houston, TX	15%	Stage IV	City of Houston, TX	20%
	Galveston, TX	10%		Galveston, TX	20%
	San Diego, CA	40%		San Diego, CA	>40%
	Peoria, AZ	15%		Peoria, AZ	TBD
	South Florida Water Management District (SFWMD), FL	30%		South Florida Water Management District (SFWMD), FL	45%
	Denver, CO	50%		Denver, CO	66%

Literature Review:

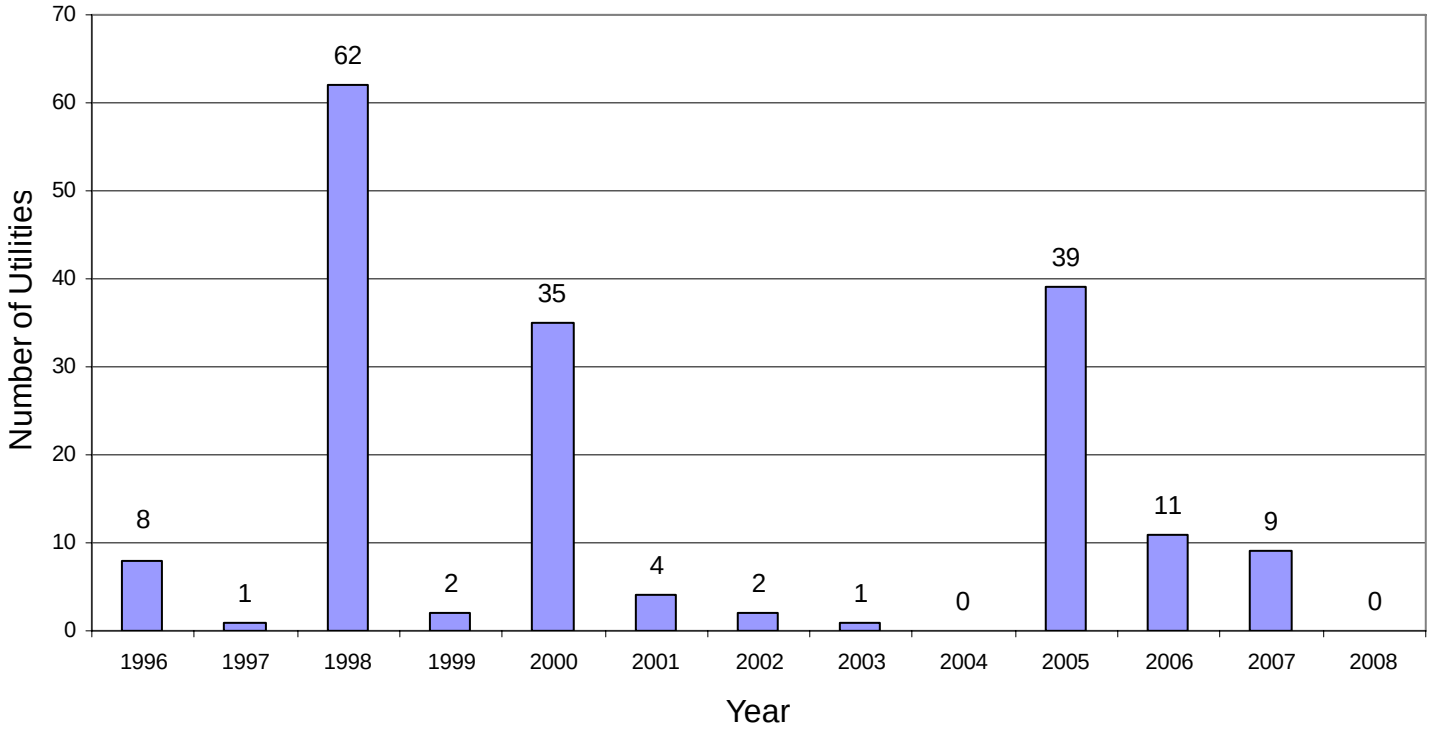
- Study of 21 Virginia localities revealed overall reductions in residential water use were highly dependant on the intensity level of information and enforcement.
  - 0 – 7% for Voluntary Measures
  - 0 – 22% for Mandatory Measures
- 8 municipal water providers studied in Colorado indicated that Voluntary Restrictions were of little value during drought conditions in 2002.
- During drought conditions in 2002 – 2003, the Denver Water Board failed to cut demand reductions by 30%. Overall consumption dropped by an estimated 22%.
- Studies of the 1984 drought in Corpus Christi showed that Voluntary Restrictions had little effect while Mandatory Restrictions were successful in reducing demands by 31%.



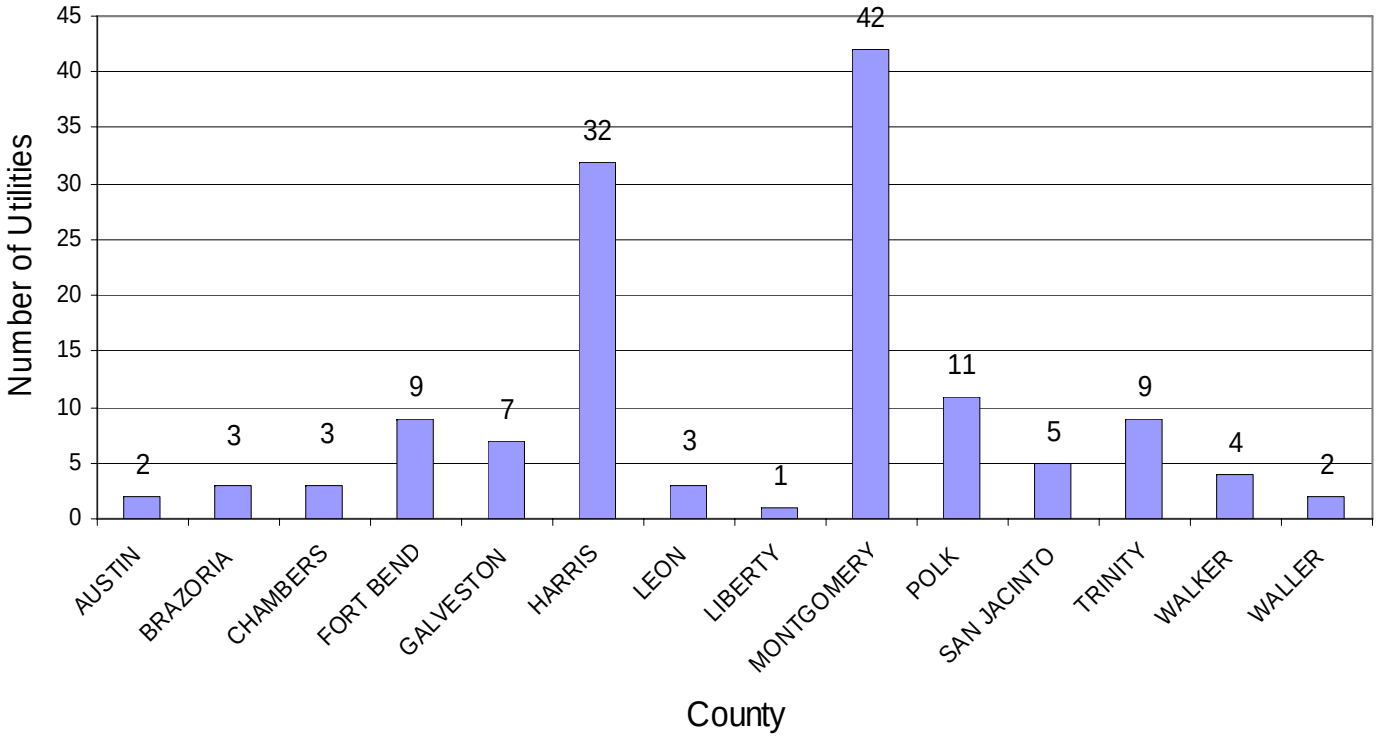
Region H
Water Planning Group

Profile of Region H Water Utilities on TCEQ Impact List

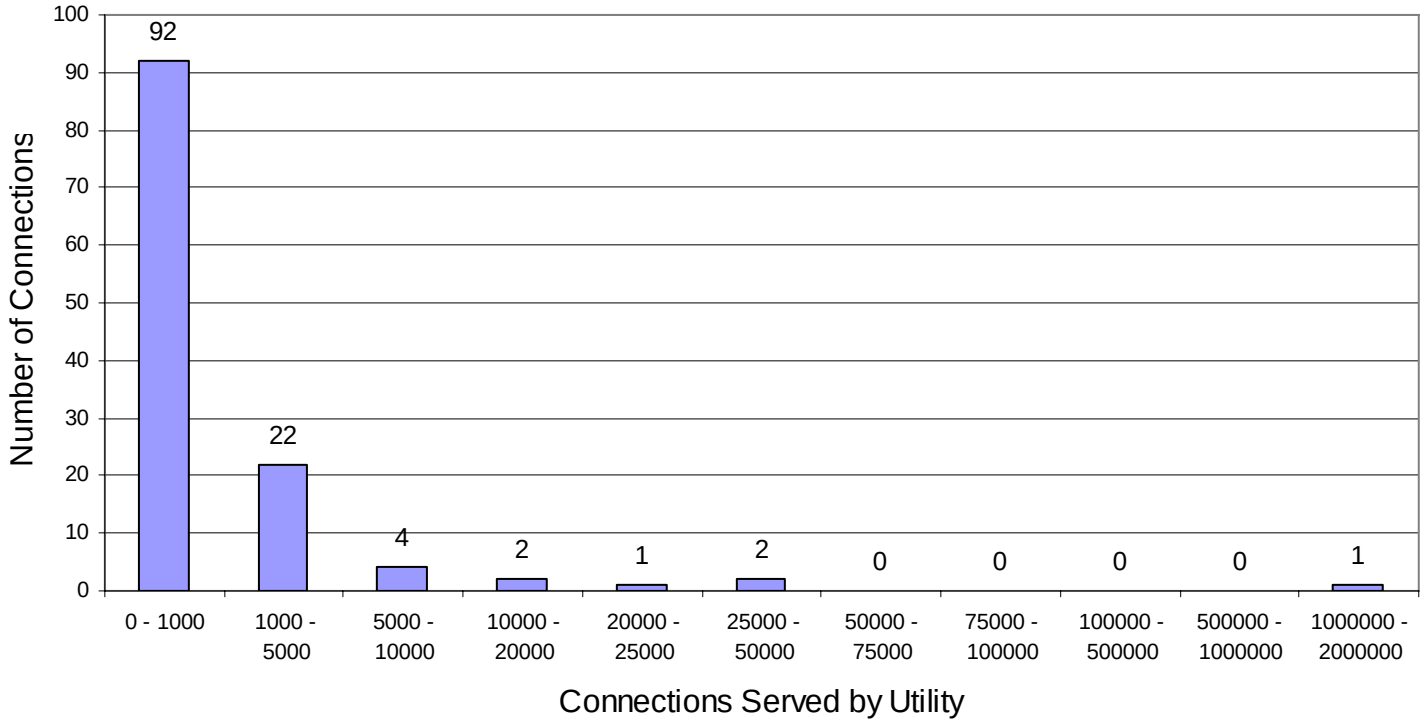
Number of Utilities in Region H on TCEQ Drought Impact List by Year



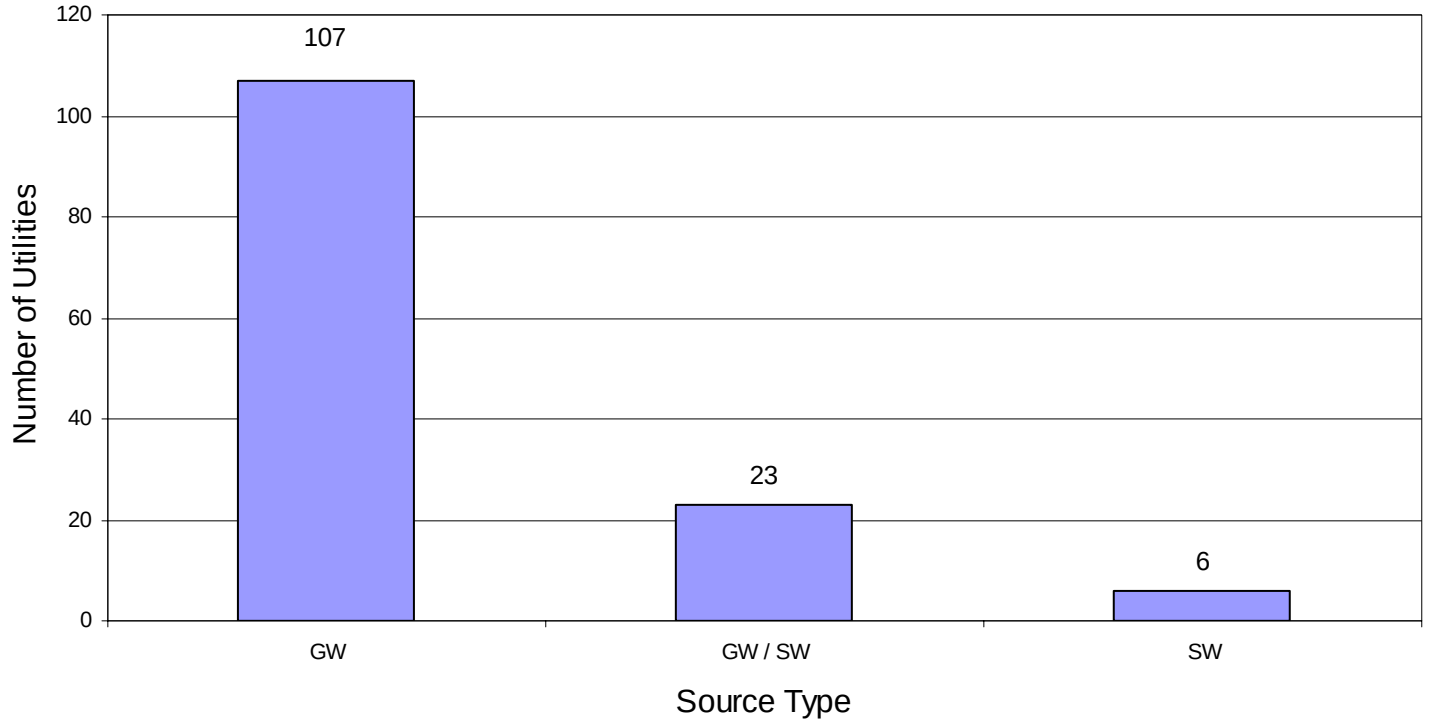
Number of Region H Utilities by County In TCEQ Drought Impact List (Between 1996 and 2008)



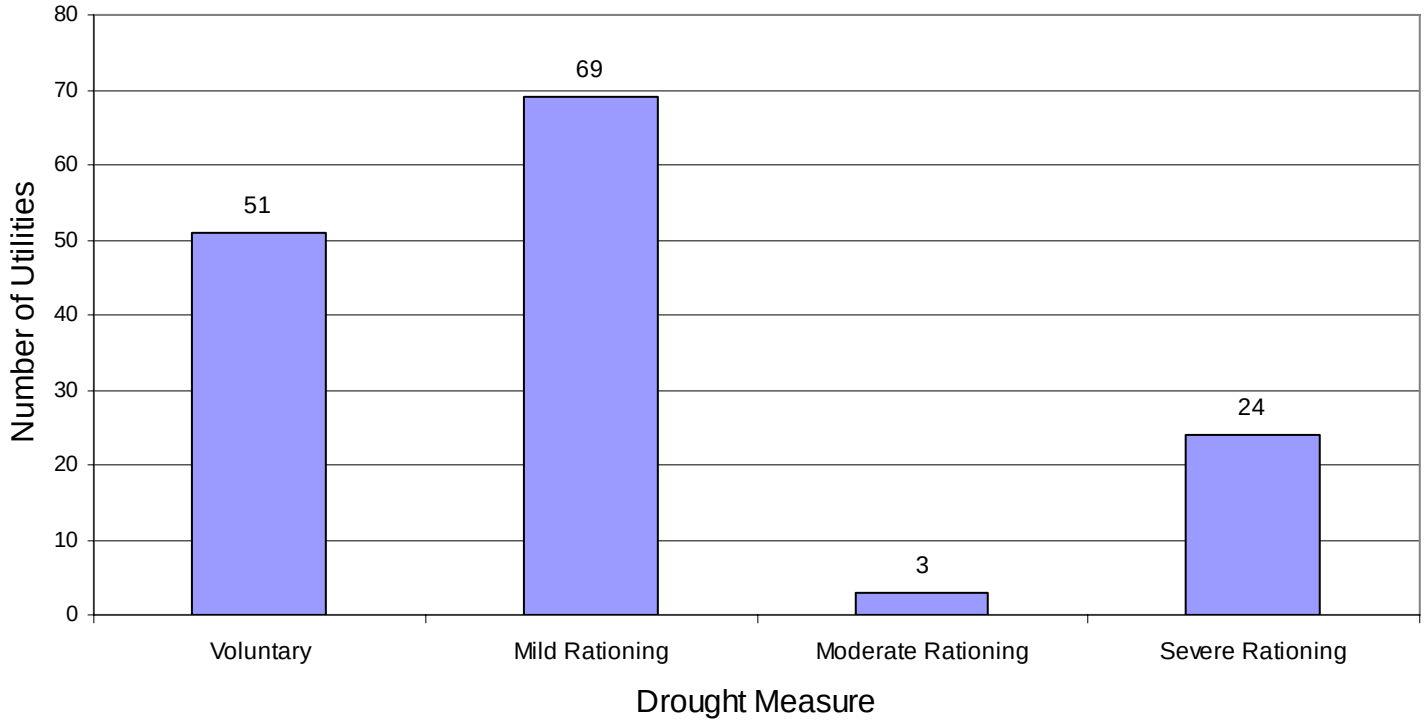
Size Distribution of Region H Water Utilities on TCEQ Drought Impact List

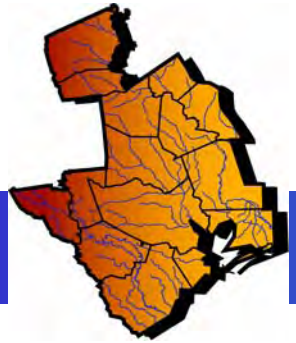


Number of Region H Utilities on TCEQ Drought Impact List by Type of Water Source



Level of Drought Response Implemented by Region H Utilities included on TCEQ Drought Impact List





Region H
Water Planning Group

Evaluation of Impacts of Drought and Drought Response Measures on Region H Water Supplies

Drought Management 101

Impact of Drought Management Strategies on Existing and Future Water Supplies in Region H:

- Using TCEQ Water Availability Models, evaluate impact of drought conditions on Lake Livingston, Lake Houston, and Lake Conroe and on the proposed Allens Creek Reservoir:
  - Without drought response measures (base case)
  - With drought response measures
  - Quantify the difference
- Requires definition of drought contingency plan scenarios:
  - Triggering conditions for successive drought response stages
  - Assumptions re: reductions in water demand during each stage

Drought Management 101

Municipal Drought Contingency Plan Scenario:

- Focus on municipal water demands supplied from Lake Livingston, Lake Houston, Lake Conroe and Allens Creek Reservoir
- Use triggering criteria and demand reduction goals from the City of Houston's drought contingency plan:
  - 24 month water supply → 10 percent reduction
  - 18 month water supply → 15 percent reduction
  - 12 month water supply → 20 percent reduction
- Model with demands for 2010, 2030, and 2060
- Apply reductions only to seasonal water use (May through September)

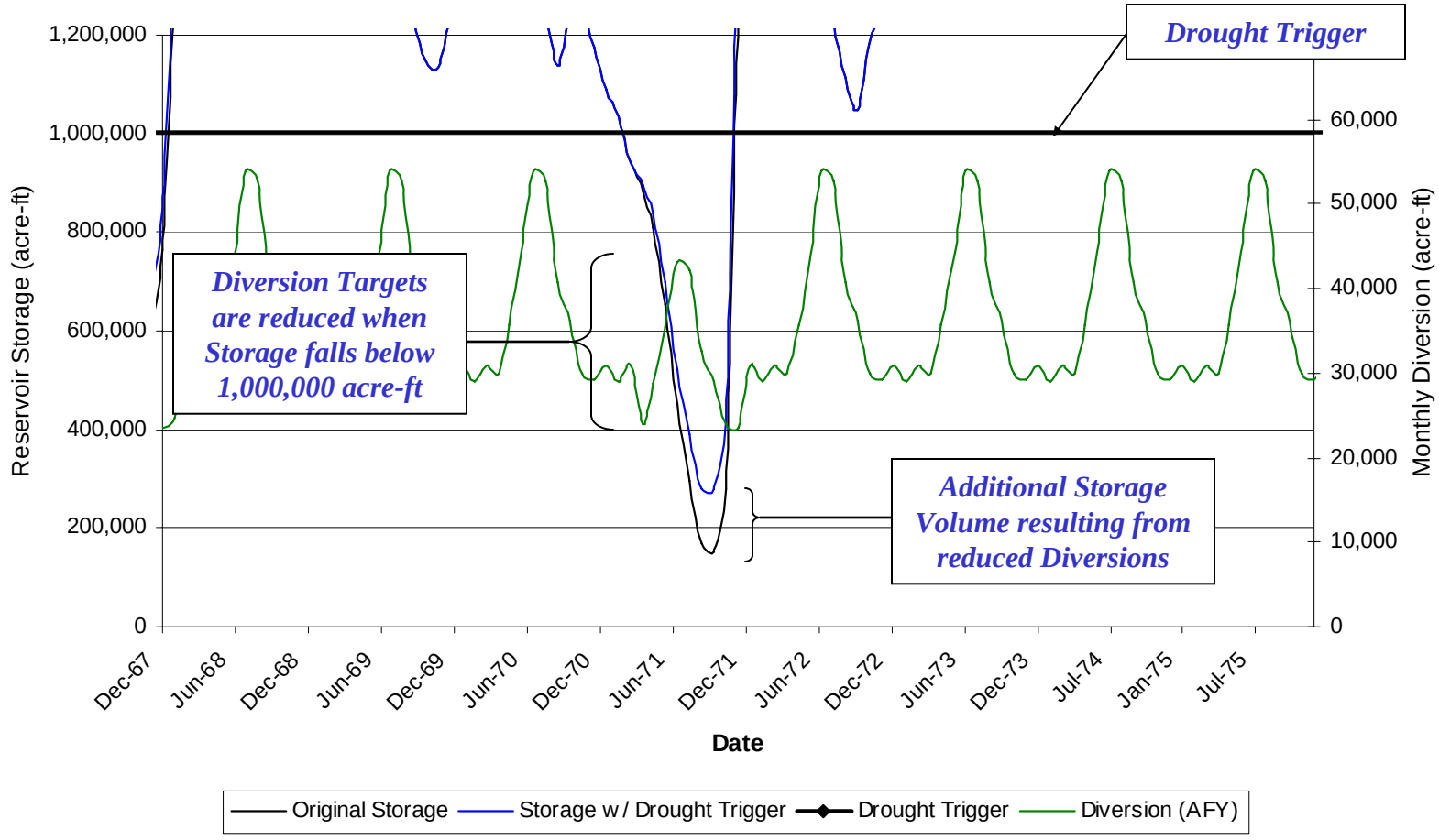
Agricultural Drought Contingency Plan Scenarios:

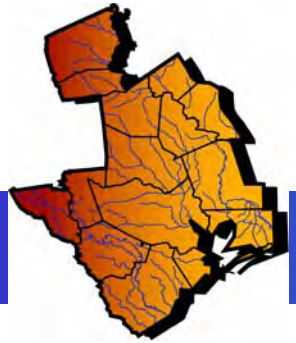
- "Dry-year option" concept – cessation of some portion (e.g., 25%, 50%) of irrigation during defined hydrologic events
- Focus on agricultural water demands supplied from Lake Livingston, Lake Houston, Lake Conroe and Allens Creek Reservoir
- Test various triggering criteria
- Model with demands for 2010, 2030, and 2060

Region H
Water Planning Group

Drought Management 101

Drought Trigger Example





Region H
Water Planning Group

Drought Management as a Water Management Strategy

Task 2 – Drought Management

Observations:

- Traditionally, water policy and planning in Texas has focused primarily on "supply-side" strategies, that is, supply and/or infrastructure development to meet projected demands during critical drought periods.
- State and regional water planning requires that water management strategies be developed for all indentified water needs (i.e., shortages) except for "…those needs for which there are no feasible strategies."
- While water conservation may be recommended to meet all or a portion of an indentified need, the concept of temporary curtailment of demand during defined drought events has not received close examination as a water management strategy.
- In essence, integrating drought management into water planning suggests a risk management, rather than a risk avoidance approach to balancing water supply and demand.

Task 2 – Drought Management

Questions:

- Is it better (i.e., lost costly and/or more environmentally benign) to periodically curtail water demand than to develop new sources and/or infrastructure to meet all water demands during relatively low-probability drought events?
- Will the public (i.e., water users) accept a strategy of periodic curtailment of water demand?
- Are there any water management strategies in the current Region H plan that could be eliminated with adoption of a drought management strategy?

Agenda Item 13

Receive updates by local water agencies or other interested parties regarding any water related initiatives or projects currently underway or planned.

Hello Texas Living Waters Stakeholder Nominees,

I know some of you are still waiting to find out if you got named as a stakeholder. I do apologize for not getting this list out to you all sooner- I have been overwhelmed with phone and email inquiries about this which is a good problem to have!

Whether you were named or not, we want to thank each and every one of you for your interest in this process and your willingness to serve in the stakeholder capacity. If your name appears on one of the lists below, we are thrilled to see you get appointed and look forward to working with you in any way we can as this process proceeds. If your name is not on the list, we are certainly disappointed, but we do very much hope you will stay tuned-in and play an active part in the very important role of public input. There will be many opportunities for input, including but not limited to providing input to the stakeholder groups concerning flow recommendations and to the Texas Commission on Environmental Quality as they develop flow standards.

Here is a rundown of what took place at the second meeting of the Environmental Flows Advisory Group. Please don't hesitate to contact me with any questions you may have.

1. Call to Order:

Present:
Sen. Kip Averitt, Co-presiding officer
Sen. Glenn Hegar
Rep. Mike Hamilton, Co-presiding officer
Rep. Jodie Laubenberg
Bryan Shaw, Texas Commission on Environmental Quality
Joe Crutcher, Texas Water Development Board

Not Present:
Karen Hixon, Texas Parks and Wildlife Department
Sen. Kenneth Brimer
Rep. Dan Gattis

2. Adoption of boundaries for the bay/basin areas:

At their first meeting back in February, Group members received a proposed map of the bay/basin areas from the Texas Water Development Board. At yesterday's meeting, a revised map was up for adoption that included some changes.

The first change is that the **Canadian, Red, Sulphur and Cypress river basins** are now designated on the map. The timing for addressing environmental flows needs for these areas is still to be determined.

The second set of changes to the map is to the coastal portions of two areas-- the Brazos River/Bay area, and the Colorado & Lavaca rivers/Matagorda

Bay area. The revised map shows that East Matagorda Bay and what appears to be all of Matagorda and Wharton counties are now included in with the Colorado & Lavaca rivers/Matagorda Bay area. The Cedar Lakes and most of the San Bernard River appear to now be included with the Brazos area. Looking slightly north, Drum Bay, Christmas Bay, Bastrop Bay and Oyster Lake also appear to now be included with the Brazos area. Here is a link to the adopted map: http://www.tceq.state.tx.us/assets/public/permitting/watersupply/groups/sb3_priority_basins.pdf

3. Statewide Science Advisory Committee named:

Sen. Averitt noted that there had been some discussion amongst the Group concerning conflict of interests issues re: potential contracts that individuals might have or might receive in the future. Sen. Hegar noted the importance of individuals fully disclosing everything so all was transparent. He also noted that although this is a nine person committee, the message must be sent that all interests/people must be included in the process. He said the same should be true with the stakeholder groups- that broad input and participation was both needed and wanted. The lists below were voted on without discussion. All were adopted unanimously by the members present.

Robert Brandes, Ph.D., P.E.
Franklin Heitmuller
Robert Huston
Paul Jensen, Ph.D, P.E.
Mary Kelly
Fred Manhart
Paul Montagna, Ph.D
George Ward, Ph.D
James Wiersema, Ph.D

4. Trinity & San Jacinto rivers/Galveston Bay area Stakeholders:

1. Ag- Irrigation: **George A. "Pudge" Willcox**
2. Ag- Free Range Livestock: **James K. Brite, Jr.**
3. Ag- Confined Animal Feeding Operation: no one
4. Recreational Water Users- coastal rec/anglers: **William Goldston**
5. Recreational Water Users- businesses supporting water recreation: **Lori Gernhardt**
6. Municipalities: **Ramon Miguez**
7. Soil & Water Conservation Districts: **Edward Seidensticker**
8. Industry- Refining: **James E. Murray III**
9. Industry- Chemical Manufacturing:**James Kacktick**
10. Industry- Electric Generation: **Jason Fluharty**
11. Industry- Paper/Timber (replaced with mining): **Adam Sinclair**
12. Commercial Fisherman: **Tracy Woody**
13. Public Interest Groups: **Terry Anderson**
14. Regional Water Planning Group: **Paul Nelson, Jim Parks and Jeff Taylor**
15. Groundwater Conservation Districts: **Lloyd Behm, Kathy Jones, and Thomas Michel**
16. River Authorities: **Jace Houston, James Oliver, and Danny Vance**
17. Environmental: **Glenda Callaway, Ken Kramer, and John Bartos**

5. Sabine & Neches rivers/Sabine Lake area Stakeholders:

1. Ag- Irrigation: **Kenneth Dixon**
2. Ag- Free Range Livestock: **C.R. Sherron**
3. Ag- Confined Animal Feeding Operation: **Rodney Newman**
4. Recreational Water Users- coastal rec/anglers: **Christopher Bean**
5. Recreational Water Users- businesses supporting water recreation: **Chester Moore**
6. Municipalities: **Jody Pucket and Keith Bonds**
7. Soil & Water Conservation Districts: **Jerry Nichols**
8. Industry- Refining: **Kathleen Jackson**
9. Industry- Chemical Manufacturing: **Joe Arnold**
10. Industry- Electric Generation: **W. G. Carter**
11. Industry- Paper/Timber (replaced with mining): **Katharine Davis**
12. Commercial Fisherman: **Sinclair Oubre**
13. Public Interest Groups: **David Roemer**
14. Regional Water Planning Group: **Kelly Holcomb and Bob Stanton**
15. Groundwater Conservation Districts: **Walter Glenn and David Alford**
16. River Authorities: **Jerry Clark, Robert Strodder, and Monty Shank**
17. Environmental: **Jeanie Turk and Bruce Drury**

After the passage of these groups, Sen. Hegar noted the importance of each of these groups working to establish a set of ground rules. He noted there are lots of ways to have facilitators and recommended facilitators with some experience with water and environmental issues. He underlined the importance of this for the health of the process. Sen. Averitt noted that TCEQ might be able to help with this.

6. Proposal of Standardized Nomination Form:

Previously the Group had accepted nominations through letter form, but for ease of processing, it was determined that a standardized form would be helpful. The Group voted on and unanimously accepted a form which they asked to be made available to the public on all three agency websites. The Texas Commission on Environmental Quality has posted these forms here:

http://www.tceq.state.tx.us/permitting/water_supply/water_rights/eflows/group.html

The Group respectfully requested that anyone who has submitted a nomination letter please resubmit their name using one of these forms.
Note: One of two Recreational Water User categories seems to have been left off of the form. We plan to contact them concerning this omission.

7. Adjustment of Environmental Flows Timelines:

As most of you are aware, the process has been slow in getting up and running. To get things back on track, the Group pushed back the process timelines for all bay/basin areas by 9 months. The new schedule, which was adopted unanimously, is as follows:

Sabine/Neches area and Trinity/San Jacinto area:

Aug 1, 2008: appoint stakeholders (now done)
Dec 1, 2008: stakeholders establish their bay/basin science team
Dec 1, 2009: b/b science teams submit flow recommendations
June 1, 2010: stakeholder and EFAG comments due to TCEQ
June 1, 2011: TCEQ adopts flow standards

Colorado/Lavaca area and Guadalupe/San Antonio area:

June 1, 2009: appoint stakeholders
Oct 1, 2009: stakeholders establish their bay/basin science team
Oct 1, 2010: b/b science teams submit flow recommendations
Apr 1, 2011: stakeholder and EFAG comments due to TCEQ
Apr 1, 2012: TCEQ adopts flow standards

Nueces area, Rio Grande area and Brazos area:

June 1, 2010: appoint stakeholders
Oct 1, 2010: stakeholders establish their bay/basin science team
Oct 1, 2011: b/b science teams submit flow recommendations
Apr 1, 2012: stakeholder and EFAG comments due to TCEQ
Apr 1, 2013: TCEQ adopts flow standards

Canadian area, Red area, Sulphur area, and Cypress area:

Timing for these areas yet to be determined

********** (meeting adjourned)**********

One thing that did not happen at the meeting that we expected to is a that **the Group did not name a nomination deadline for the next two bay/basin areas to be addressed--** the Colorado & Lavaca rivers/Matagorda bay area stakeholders and the Guadalupe, Mission, Aransas, San Antonio rivers/San Antonio Bay system area. Since they did push back the deadline for appointments by nine months to June 1, 2009, we might guess that the nomination deadline might be sometime around April, 2009.

Thanks again to each of you,
Jennifer

NWF's mission is to inspire Americans to protect wildlife for our children's future.

Jennifer Ellis - Outreach Coordinator
Phone: 512-476-9805 | Fax: 512-476-9810 | ellis@nwf.org
National Wildlife Federation
Gulf States Natural Resource Center
44 East Avenue, Suite 200

Austin, Texas 78701
www.nwf.org

Panhandle Groundwater Conservation District

201 W. THIRD ST., P.O. BOX 637
WHITE DEER, TX 79097
PHONE: (806) 883-2501
FAX: (806) 883-2162
www.panhandlegroundwater.org

June 3, 2008

Mr. Jeff Taylor, P.E.
City of Houston Dept. of Public Works & Engineering
Regional Planning Group H
611 Walker, 25th Floor
Houston, TX 77002

Re: Monitoring Water Conservation Strategy Implementation

Dear Chairman Taylor:

The Water Conservation Advisory Council (Council) has been working diligently to address the charges given to it by the 80th Legislature in Senate Bill 3 and House Bill 4 (80R). As you know, one of the Council's charges is to monitor the implementation of water conservation strategies by water users included in the 16 regional water plans. The Council has no way of directly obtaining this information because the Council is a group of volunteers that lack the resources to collect the necessary information. To address this legislative directive, the Council requests your Region's assistance in obtaining th e vital information needed regarding implemented water conservation practices in your area.

Council needs to obtain the following data in order to respond to this legislative charge:

1. A list of the conservation strategies included in the Region's current Water Plan;
2. The expected water savings on an annual basis for each conservation strategy listed in number one above;
3. A list by water user of the amount of water saved on an annual basis by each conservation strategy implemented; and
4. A list of additional conservation strategies being considered by your region.

We believe that your Regional Planning Group is best qualified and situated to provide this crucial information and we respectfully request that your regional water planning group respond to the Texas Water Development Board (TWDB) with the most accurate information available, by October 1, 2008, and each even numbered year thereafter. Because the TWDB staff is providing some staff assistance to the Council, this information could then be easily forwarded to the Council for inclusion in the Council's biennial report to the Texas Legislature.

The Chairs of Regions A and C have already requested our respective consultants to include this task in our additional funding requests to the TWDB. We need to clearly understand how much conservation is actually being implemented, since almost every regional group has significant conservation strategies contained in their plan.

Thank you for your assistance with this project. Please feel free to contact me with any questions or concerns.

Sincerely,

C E Williams

C.E. Williams, Chairman
Texas Water Conservation Advisory Council

CC: Kevin Ward, Executive Administrator, TWDB

CITY OF SUGAR LAND
UTILITIES

June 23, 2008

Region H Water Planning Group
c/o
Mr. Mike Reedy
TCB - Houston
5757 Woodway Drive, Suite 100
Houston, TX 77057

Dear Mr. Reedy:

The City of Sugar Land, in Fort Bend County, has updated its water planning and projection data and is actively pursuing several water supply strategies that we are requesting be updated and/or included in the Region H Regional Water Plan.

The City has just completed a major update to its standing Water Master Plan (WMP), including revised projections for water use and updated water supply strategies for itself and its ETJ. Our WMP update has provided us with updated demand information projected through our ultimate build-out. This data is significantly different than the projections for Sugar Land and its ETJ communities currently contained in the Region H data.

Additionally, the City has just had its Groundwater Reduction Plan (GRP), the roadmap by which we indicate to the Fort Bend Subsidence District how we will meet their mandated conversion to surface water, officially approved this year. Based on our conversion needs, the City is pursuing several treated surface water projects, non-potable surface water projects and treated effluent projects that collectively form a new set of water supply strategies. These projects range from the construction of a surface water treatment plant, to supplying raw surface water and/or treated effluent to fill amenity lakes, supply landscape irrigation needs, and fulfill similar non-potable uses. The City, in conjunction with the Fort Bend County WCID 1, is currently working through a permit amendment request with the TCEQ to utilize raw surface water for non-potable projects, and is conducting feasibility studies for a series of planned effluent reuse projects. These strategies are not currently identified or included in Region H's data.

Because this information was not available during Region H's last round of planning, the City would like to present the updated demand information available from the WMP, and

the new water supply strategies identified by the GRP, for inclusion in the Region's current round of planning. We can provide the information to the Region in whatever

form you wish, and would like to talk to your staff or consultants regarding coordinating this update.

Thank you for your time and efforts, and I look forward to discussing these items with you. I can be reached at 281-275-2450 at any time.

Sincerely,

SuEllen Staggs
Director of Utilities

FORT BEND COUNTY WATER CONTROL AND IMPROVENT DISTRCT NUMBER ONE

P. O. BOX 1349
Sugar Land, Texas, 77478-1349

July 15, 2008

Region H Water Planning Group
c/o Mr. Mike Reedy
TCB - Houston
5757 Woodway Drive, Suite 100
Houston, TX 77057

Dear Mr. Reedy:

The Fort Bend Water Control & Improvement District No. 1 (District), in partnership with the City of Sugar Land (both of Fort Bend County), has updated its water planning data and is actively pursuing several water supply strategies that we are requesting be updated and/or included in the Region H Regional Water Plan.

The City has just completed a major update to its standing Water Master Plan (WMP), including revised projections for water use and updated water supply strategies for itself and its ETJ. One of the primary suggested strategies they identified was the use of raw surface water for a variety of non-potable uses throughout the City and District Boundaries. Towards that end, the City entered into a contract with the District for use of the majority of its surface water rights, held under COA 11-5170. These non-potable projects will assist the City in meeting its groundwater reduction mandate, as set forth by the Fort Bend County Subsidence District.

The District is currently working through a permit amendment request with the TCEQ to utilize its water right for multiple take points and for expanded uses. Concurrently, the City is conducting feasibility studies for a series of planned effluent reuse projects. These strategies are not currently specifically identified or included in Region H's data.

Because this information was not available during Region H's last round of planning, the District would like to present the updated project information for inclusion in the Region's current round of planning. We can provide the information to the Region in whatever form you wish, and would like to talk to your staff or consultants regarding coordinating this update.

Thank you for your time and efforts and we look forward to discussing these items with you.

Sincerely,

Andrew V. (Buddy) Blair
President

Agenda Item 15

Agency Communications

TEXAS WATER DEVELOPMENT BOARD

July 11, 2008

Mr. Jeff Taylor, P.E.
Chairman, Region H
c/o City of Houston Dept. of Public Works and Engineering
611 Walker, 25th Floor
Houston, Texas 77002

Re: Interviews regarding drought contingency measures and regional planning

Dear Chairman Taylor: Jeff

The Texas Water Development Board (TWDB) is sponsoring a study to examine advantages, disadvantages and issues associated with incorporating drought contingency measures as water management strategies in the regional and state water planning processes. TWDB has retained the consulting team of BBC Research & Consulting (BBC), Morningside Research and G.E. Rothe, Inc. to conduct this study.

During the next month, the BBC team will be conducting telephone interviews with the chair of each of the Regional Water Planning Groups (RWPGs). After completing the interviews with the chairs, the BBC team will also conduct a telephone survey of 100 members of the RWPGs and other stakeholders.

We request that you assist us by participating in the telephone interviews and by encouraging other members of your RWPG to participate in the subsequent telephone survey if they are chosen as part of the sample. While specific comments from the interviews and surveys will not be attributed to particular individuals, overall draft results from the study will be published for public comment – likely in early 2009. The Scope of Work for this research contract is available through a link under *'What's New'* at: http://www.twdb.state.tx.us/wrpi/index.htm

Please contact Mr. Matt Nelson of my staff at (512) 936-3550 if you have any questions or concerns regarding this study.

Sincerely,

Carolyn L. Brittin
Deputy Executive Administrator