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Abbreviations used in the Report

Ac-ft/yr	Acre-feet per year
BRA	Brazos River Authority
CLCND	Chambers-Liberty Counties Navigation District
COH	City of Houston
GBEP	Galveston Bay Estuary Program
GBF	Galveston Bay Foundation
GBFIG	Galveston Bay Freshwater Inflows Group
GCWA	Gulf Coast Water Authority
MGD	Million gallons per day
MWP	Major Water Provider
RWPG	Regional Water Planning Group
RHWPG	Region H Water Planning Group
SB1	Senate Bill 1 from the 1997 State Legislature
SJRA	San Jacinto River Authority
TNRCC	Texas Natural Resource Conservation Commission
TPWD	Texas Parks and Wildlife Department
TRA	Trinity River Authority
TWDB	Texas Water Development Board
WUG	Water User Group

Water Measurements

Acre-foot (AF) = 43,560 cubic feet = 325,851 gallons

Acre-foot per year (ac-ft/yr) = 325,851 gallons per year = 893 gallons per day

Gallons per minute (gpm) = 1,440 gallons per day = 1.6 ac-ft/yr

Million gallons per day (mgd) = 1,000,000 gallons per day = 1120 ac-ft/yr

County Codes used in the Tables

8	Austin County
20	Brazoria County
36	Chambers County
79	Fort Bend County
84	Galveston County
101	Harris County
145	Leon County
146	Liberty County
157	Madison County
170	Montgomery County
187	Polk County
204	San Jacinto County
228	Trinity County
236	Walker County
237	Waller County

Basin Codes used in the Tables

6	Neches River Basin
7	Neches-Trinity Coastal Basin
8	Trinity River Basin
9	Trinity-San Jacinto Coastal Basin
10	San Jacinto River Basin
11	San Jacinto-Brazos Coastal Basin
12	Brazos River Basin
13	Brazos-Colorado Coastal Basin

7.1 Public Involvement in Developing the Region H Water Plan

The Region H approach to public involvement has been to secure early participation of interested parties so that concerns could be addressed as the plan is being developed. From its initial deliberations, the Region H Water Planning Group (RHWPG) has made a commitment to an open planning process and has actively solicited public input and involvement in developing the elements of the regional water plan. This has occurred while realizing that long-term planning, even for a topic so vital to public well-being as water supplies, does not often capture the attention of the public or the news media in a major media market. The existence of a drought in Texas for the past several years has been the most visible attraction for public attention. Nevertheless, the RHWPG has shouldered the responsibility of reaching out to communicate with the general public and especially with those segments of the population who will be most affected by the results of the regional water plan. This has been accomplished by pursuing several avenues to gain public involvement.

Regional Water Planning Group as Stakeholder Representatives

The first line of public involvement occurs through the membership of the Region H Water Planning Group. Each of the members of the RHWPG represent an interest category, such as river authority, agriculture, small businesses, general public, etc. Most of these members have organizational linkages to the community. These linkages, such as professional organizations or citizens groups, are the first avenue for taking information to the public and for receiving input to the RHWPG.

The RHWPG has met monthly on the first Wednesday of each month so that interested parties can plan to attend and follow the proceedings. Through the summer of 2000, the RHWPG has been meeting twice a month, on the first and third Wednesdays, to deliberate on potential water management strategies as well as other topics. The RHWPG maintains minutes of its meetings and places them on the Texas Water Development Board Internet website.

Joint meetings of the Region H Water Planning Group and members of neighboring planning groups aid in coordinating the work that is underway and identifying any concerns or issues that need to be addressed. A joint meeting of Regions H and I (East Texas) was hosted by Region I in September 1999. A second meeting with Region I was hosted by Region H in April 2000. Both of these meetings followed a format of brief presentations on behalf of each RWPG, and then ample time for discussion. A third joint meeting was held August 16, 2000. This meeting was hosted by Region H and included representatives from two neighboring regions: Region I and Region G.

Public Meetings during Plan Development

In addition to the July 1998 public hearing initiating the planning effort, the Region H Water Planning Group committed in its scope of work to hold a series of public meetings/hearings at four points in the planning process. All but one of these meetings was held in the evening at four locations for each series. An afternoon meeting is planned for September 2000. Meeting

formats encouraged discussion of the issues. Summaries of the meetings and lists of attendees were prepared and distributed to the RHWPG and others; they are included as an appendix to this report.

In March 1999, meetings were held in South Houston, Huntsville, West Houston, and White's Memorial Park in Chambers County. This series of meetings was held as soon as practical as an opportunity to advertise the planning effort to the public and to solicit public concerns or issues that needed to be dealt with when developing the water plan. A questionnaire was developed and distributed at this series of meetings.

In May 1999, meetings were held in South Houston, West Houston, Huntsville, and Wallisville Heritage Park in Chambers County. The purpose of this series of meetings was to present the population and water demand projections to be used in planning for Region H and to receive comments and requests for corrections or changes to the projections from attendees.

In February-March 2000, meetings were held in Huntsville, Alvin, the Greenway Plaza area of Houston, and at Wallisville Heritage Park in Chambers County. The topics of this series were available water supplies and areas with potential water shortages. Potential management strategies were introduced; environmental water needs also were discussed.

Public meetings are planned for September 2000 in Huntsville, Alvin, East Houston, and White's Memorial Park in Chambers County. This series will serve as the public hearing on the draft Regional Water Plan.

Targeted Meetings during Plan Development

Through the efforts of RHWPG members and others, meetings were held with groups who were identified as likely to be interested in the regional water plan. The agricultural community, industry, and environmental groups were targeted for meetings with presentations about regional water planning, particularly water use projections and environmental water needs. Regular interaction with and updates to the Galveston Bay Freshwater Inflow Group provided a forum for communication with the environmental, commercial and recreational fisher groups. A workshop for local governments was organized and held in May 1999 to discuss in detail the population and water demand projections on which the regional water plan is based.

Public Notices and Press Releases

Media coverage was sought in conjunction with each series of public meetings. Paid meeting notices were placed in twelve newspaper providing service to all fifteen of the counties in Region H. Press releases were sent to nine outlets in television and radio and forty outlets in the print media. Press releases also were sent to organizations that might distribute the information through their newsletters.

Region H Update

A newsletter was developed to provide summary coverage of the development of the plan. In January 2000, about 550 units were mailed to a mailing list comprised of interested individuals, organizations, and local governments. The January Update dealt with SB-1 water planning in general and projected population and water demands for the region. A second Update was prepared in June 2000. Nearly 800 units were mailed out. The issue covered available water supplies and potential designation of streams of unique ecological value. A third issue of the Update was prepared in September to provide a brief summary of water shortages and water management strategies and to publicize the public hearing on the draft plan.

Texas Water Development Board Internet Site

The Region H Water Planning Group has taken advantage of the Internet site provided by TWDB on its home page (www.twdb.state.tx.us). Upcoming meetings, minutes of previous meetings, and contact information are posted. A copy of the Draft Region H Water Plan was posted on the TWDB site as well.

7.2 Summary of Public Meetings, March 1999

During March 1999, public meetings were held in the evening at four locations in Region H. Since Region H is a large region, the locations were selected to provide as convenient as possible access to the meetings for members of the interested public. Sites selected were: San Jacinto College-South (Houston and south); Bear Creek Park (Houston and west); White Memorial Park (east) and Walker County Courthouse (north). Paid meeting notices were placed in 12 newspapers in the region; press releases were sent to 42 papers, as well as radio and television stations. Region H Planning Group members also assisted by advising interested groups of the meetings.

The purpose of the meetings was to provide an update on Region H water planning and to get from attendees any of their interests or concerns about water supply in the region so issues can be dealt with up front rather than after the technical work is done.

Each of the meetings followed a similar format:

- Ms. Callaway opened the meeting and covered any necessary logistical information for that site, mentioned the questionnaires, and gave the format anticipated;
- Introductions were made;
- Mr. Taylor gave a slide presentation orienting attendees to the Senate Bill 1 planning process, Region H, and the water planning tasks;
- Questions were taken on Mr. Taylor's presentation;
- Comments were heard from those registering to speak;
- General discussion was pursued as time or interest of attendees allowed.

Comments received at those meetings are summarized below. Transcripts of the meetings are available upon request to the San Jacinto River Authority, the City of Houston, or Ekistics Corporation. Presentation slides are at Appendix A.

On the 8th of March, a total of 17 people attended the meeting at **San Jacinto College-South**. Of those, 6 were not Planning Group or consulting team members. One person made formal comments. He presented two issue areas of concern: the need for *conservation and wise use of water*; and the need for *freshwater inflows for the Galveston Bay Estuary* in order to preserve its ecological health and productivity.

On the 9th of March, 22 people attended the meeting held at the Texas Agricultural Extension Service facility at **Bear Creek Park**. Twelve of those were members of the interested public. Initially, only one person registered to speak, but after her comments, two others asked to speak. Issues raised were: the needs for *instream flows and freshwater inflows for Galveston Bay* and for those needs to be taken into account up front rather than after the fact; the need to *consider environmental water needs while planning for residential and other uses to avoid unintended consequences* (citing lessons to be learned from the Everglades); the need to **find a balance that maximizes ground water use relative to surface water use to achieve the lowest cost and leave as much surface water as possible for other uses.**

On the 11th of March, 39 people attended the meeting held at **White Memorial Park** near Anahuac in Chambers County, including a number of elected officials. There was also a lively discussion and question and answer period. Issues raised during discussion were: (1) Once the plan is developed and water management strategies identified, then projects to develop water and to seek funding with the TWDB have to be consistent with those strategies identified in the plan. This also applies to TNRCC permitting for water diversions and amendments to water rights permits. (2) Chambers and Liberty Counties are concerned about a perceived underrepresentation of their interests relative to the northern and more populous parts of the region. When vacancies on the Planning Group occur, they would like to have residents considered for appointment.

Four persons registered to make formal comments. In addition, written comments were submitted on behalf of a fifth person. Comments and issues raised were: The oyster industry in Galveston Bay is dependent on *freshwater inflows to the bay*, and recommends that the Region H Planning Group adopt the Texas Parks and Wildlife Department's recommended 5.2 million acre-feet of water per year as the target amount of needed inflows. Inflows should be of the same or similar quality and arrive on the same schedule as water that has historically come into the bay. *Dams interfere with transport of sediment and nutrients* which alters the quality of inflows.

Planning Group should recognize that Galveston Bay is not only a major oyster farming area, but a massive recreational area used by the population of the entire state. *Dynamics of freshwater inflows* need drawdowns in the rivers and their floodplains so vegetation can grow, then floods flush these nutrients out into the bay. Just having water flow down a normal river bed is not going to keep the bay healthy and the food chain going.

Projections of population and water demand are massive data sets, and the public needs time to understand and review them for errors. There is concern that Chambers and Liberty Counties have sufficient water supply, but *if future demands are not documented the water will be used to meet shortages elsewhere*.

Planning Group should consider that *Devers Canal*, owned and run by farmers (about 27,500 or 30,000 in 2007), *has applied to TNRCC for additional water rights. Farmers will need additional water, but can't project farming to 50 years*. Concerned that water will move from east to west because *representation on Planning Group is from the west*.

Attendees confirmed that White Memorial Park is a good meeting location for the eastern part of Region H.

On the 18th of March, 35 people attended the meeting held at **Walker County Courthouse** in Huntsville, including a number of elected officials. Walker County Judge Wagamon welcomed participants. No one registered to make formal comments; however, there were questions that suggested issues for consideration. (Please note that questions were being posed from the floor with attendant difficulty in recording.) These were:

- (1) A concern that **contaminated surface water might contaminate ground water**.
- (2) Questions about **reservoir reclamation** and about rights and practices with regard to reservoir-front property owners specifically relating to Lake Livingston. Answered by manager of Lake Livingston.
- (3) Question about the portion of **water in Lake Livingston owned by the City of Houston that is now being used**. Responded to by Lake Livingston manager: 55% being used now of 70% owned by City of Houston.
- (4) Question about **historical lake drawdown**. Answer: Lake Livingston level declined 5-3/4 feet in 1988.
- (5) Question about **drawdown if Houston takes 100% of their water** during a drought. Answer: with a drought as in the '50s, Lake Livingston would be a channel. Lake Conroe would be the same way. Without a 7-year drought, that's not going to happen. Both Livingston and Conroe are water supply reservoirs, rather than flood control or recreational facilities.
- (6) Question of whether planning effort will **address recreation uses** as well as drinking water. Response: Water supply is the main focus, but RWPG member Steve Tyler is interested in the issue of recreational water use and has already asked that it be included in the study. The socioeconomic effect on recreation of not meeting water demand will definitely be illustrated.
- (7) Question about **population projections cited by Ernie Rebuck** at an earlier meeting. Response by Rebuck: Texas population expected to double by 2050.
- (8) Question about using **return flows to recharge an aquifer**. Taylor pointed out the importance of return flows from the Dallas region to Lake Livingston. Seifert added that the part of agricultural return flows containing chemicals that might seep into the ground are filtered out before they reach an aquifer used for water supply and probably are not a problem. In the case of artificial recharge, water is treated to drinking water standards before it is pumped back into an aquifer.
- (9) Question about **recent publicity about drought**. Answer: There is a real drought situation from the Edwards Aquifer west. A speaker from the audience noted that testimony before a legislative committee had stated that soil moisture conditions west of the Edwards were drier than last year.
- (10) Follow-up question about **reservoir reclamation** to increase capacity and possibility of selling dredged soil for fill or farming. Answer: Reservoir reclamation is not currently in the scope of planning work because experience has indicated that dredging sediment out of a reservoir is not cost effective. The chemical makeup of dredged materials might be useful for some purposes if the cost of removing and hauling them were not so high. Hydrologic studies of Lake Conroe indicate that siltation has claimed only 13,000 acre-feet of storage. Lake Livingston has lost only 4-1/2 percent volume over 30 years, less than had originally be projected. Some areas near creeks in the upper part of the lake have had more siltation.

(11) Question about **12 reservoirs proposed in Trinity River Master Plan**. Answer: The 1997 State Water Plan included only 8 proposed reservoirs statewide. In Region H, only Allen's Creek on the Brazos River was in the Plan. A comment was made that Bedias Creek might still be viable, but that Tennessee Colony is not. A comment was made that more reservoir projects should be built. Adams recounted the cost of water for Lake Conroe in 1970 (\$300 per acre-foot) and the proposed Lake Creek Reservoir in 1990 (\$4500 per acre-foot) indicated why reservoirs are not being built. There were several comments about added costs and delays because of environmental concerns.

(12) Question about whether it would be better to have a few deep reservoirs rather than several shallow reservoirs because of **evaporation**. Response: The topography here makes deep reservoirs difficult. The average depth of Lake Livingston is 22 feet. Adams contributed that the evaporation out of Lake Conroe was 70-100 million gallons a day in the summer, and could go up to 180 million gallons per day.

(13) Comment from Southeast WSC illustrating **costs and delays** on expansion project stemming from concerns about **endangered species**: fruited sand verbena, Navasota lady's tresses, and the Houston toad. Project has been delayed 5 years and costs at \$3.5 million are more than double initial investment of WSC. Response: Some mitigation demands are extortion, but need to give some credit to environmental folks. The State has never allocated water for instream needs or for bay and estuary needs. There is a very productive bay at the bottom of the San Jacinto and Trinity Rivers that needs to be protected given all the population growth expected in the next 50 years. We need to take care of our streams. Texas Parks and Wildlife is doing a good job of that. This study will take those needs into account.

(13) Follow-up comment on **reservoirs**: This planning effort has divided the State into 16 regions to look at water needs taking into account the environment, agriculture, industry. There is specific language directing the project to look at reservoir sites. If new reservoirs are needed, the sites can be set aside so that will be available.

(14) Comment: First you need to do **conservation**. Then you look for new sources.

Callaway stated that SB1 water planning is to take all these factors into account up front so at the end we don't have projects that face obstacles that will cost more time and money and not have the water we need. Attendees supported continued use of the Walker County Courthouse for future meetings.

Table 7-1: Attendance at Public Meetings, March 1999**8 March 1999, San Jacinto College-South, Houston****Interested Public**

Ruth Anderson, Houston
 Steven Anderson, GBEP, Webster (Speaker)
 Carole Baker, Subsidence District,
 Friendswood
 Jace Houston, Subsidence District,
 Friendswood
 Charles Johnson, Dow, Freeport
 Tom Michel, Subsidence District,
 Friendswood

**Region H Water Planning Group
Members**

Jim Adams, SJRA, Conroe
 John Bartos, GBF, Houston
 Jack Harris, Brazoria County, Pearland

**Region H Water Planning Group
Members (continued)**

Carolyn Johnson, Dow-TCC, Freeport
 James Murray, Exxon, Baytown
 Ron Neighbors, Subsidence District,
 Friendswood
 Fred Perrenot, City of Houston, Houston
 Lance Robinson, TPWD-Coastal Fisheries,
 Seabrook (alternate)

Consulting Team

Glenda Callaway, Ekistics Corporation,
 Houston
 Mark Lowry, Turner Collie & Braden,
 Houston
 Jeff Taylor, Brown & Root, Houston

9 March 1999, Bear Creek Park, Houston (west)**Interested Public**

Bobby Adams, Turner, Collie & Braden,
 Houston
 Wayne Ahrens, Spencer Road PUD,
 Houston
 Dan Freeland, H2O Consulting, Houston
 Chris Hoffman, H2O Consulting, Houston
 Ryan Johansen, Johnson, Radcliffe &
 Petrov, Houston
 Gordon Landwormeyer, Spirit of North
 Harris County, Houston
 Alan Rendl, Spirit of North Harris County,
 Houston (Speaker)
 Pamela Rocchi, Harris County Pct. Four,
 Spring
 Linda Shead, Galveston Bay Foundation,
 Webster (Speaker)
 Andy Sturbenz, Brown & Root, Houston
 Ray Zobel, Cypress Creek United Civic
 Assn., Tomball (Speaker)

Karen Zurawski, This Week, Houston

**Region H Water Planning Group
Members**

Jim Adams, SJRA, Conroe
 Roosevelt Alexander, Brookshire
 Robin Green, City of Houston, Houston
 (alternate)
 David Jenkins, Stowell
 Jack C. Searcy Jr., Spirit of North Harris
 County, Houston

Consulting Team

Glenda Callaway, Ekistics Corporation,
 Houston
 Becky Olive, Turner Collie & Braden,
 Houston
 John Nelson, LBG-Guyton Associates
 John Seifert, LBG-Guyton Associates
 Jeff Taylor, Brown & Root, Houston

Table 7-1: Attendance at Public Meetings, March 1999 (continued)**11 March 1999, White Memorial Park, Anahuac****Interested Public**

Bobby Blake, Liberty County & City of Liberty, Liberty
 John Cheesman, Anahuac (Speaker)
 C. B. Cone, Trinity Bay Conservation District, Winnie
 Norman Dykes, City of Liberty, Liberty
 Bobby Edwards, Stowell
 W. S. Edwards, rancher/farmer, Stowell
 Judy Edmonds, Chambers Co. Commissioner Pct. 2, Anahuac
 Sue Hawthorne, Anahuac Progress, Anahuac
 Mark Huddleston, Chambers Co. Commissioner Pct. 1, Winnie (Speaker)
 Buddy Irby, Chambers Co. Commissioner Pct. 3, Mont Belvieu
 Guy C. Jackson III, Coastal Oyster Leaseholders Assn., Anahuac (Speaker)
 Guy Robert Jackson, Anahuac Chamber of Commerce, Anahuac
 John W. Jenkins, TRA/farmer, Hankamer
 Jim Kirkham, farmer, Anahuac
 Lloyd Kirkham, Liberty County Judge, Liberty
 Mike Kubik, Chambers County, Anahuac
 Maurice Locke, TRA, Liberty
 Ben H. Nelson, Smith Point (Written comments)
 Jerry Sparks, Winnie Area Chamber of Commerce, Winnie

Interested Public (continued)

Cynthia Stevenson, GBF, Houston
 Don Stevenson, Houston
 Michael Van Dyke, City of Liberty, Liberty
 Bill Wallace, Chambers Co. Commissioner Pct. 4, Baytown
 Jean Wallace, Chambers County, Baytown
 Kay Willcox, Anahuac
 Pudge Willcox, CLCND, Anahuac (Speaker)
 Laura Yarbrough, USDA-NRCS, Anahuac
 Billy Yarbrough, farmer, Liberty

Region H Water Planning Group Members

Jim Adams, SJRA, Conroe
 John Bartos, GBF, Houston
 James Murray, Exxon, Baytown
 David Jenkins, Stowell
 Michael S. Sullivan, Houston
 Ernest Rebuck, TWDB, Austin

Consulting Team

Glenda Callaway, Ekistics Corporation
 Mark Lowry, Turner Collie & Braden
 John Nelson, LBG-Guyton Associates
 Jeff Taylor, Brown & Root
 Ann Wood, Brown & Root

Table 7-1: Attendance at Public Meetings, March 1999 (continued)**18 March 1999, Walker County Courthouse, Huntsville****Interested Public**

Herschel Brannen, Trinity Farm Bureau, Trinity
Lee Brooks, First National Bank, Trinity
Pauline Coburn, RSWC, Huntsville
Jeff Coburn, Huntsville
Debra Daugette, City of Huntsville, Huntsville
Charles Elliott, Trinity
Tom Ferguson, Camp Olympia, Trinity
H. O. Halloais, Midway
Scott Heini, Trinity
Thomas A. Leeper, Huntsville
Phillip Morrison, Trinity
Richard Nira, The Huntsville Item, Huntsville
Johnny Poteet, City of Huntsville, Huntsville
Jim R. Sims, Trinity River Authority, Huntsville
Neal Smith, Trinity City Council, Trinity
Wayne Sorge, KSAM radio, Huntsville
Michael Straughan, The Huntsville Item, Huntsville
Charles S. Wagamon, Walker County Judge, Huntsville
Billy Jack Walker, Trinity City Council, Trinity
Julian Weslord, Trinity
Eugene West, Lake Livingston Tourism Council, Trinity
Frederick M. Weiwzieke, Riverside
Steve Widner, City of Huntsville, Huntsville
Boyd Wilder, City of Huntsville, Huntsville

Region H Water Planning Group Members

Jim Adams, SJRA, Conroe
Robert Bruner, Huntsville
Mark Evans, Trinity County Judge, Groveton
Jeff Henson, TPWD, Bryan (alternate)
Ernest Rebuck, TWDB, Austin
William Teer, Southeast WSC, Centerville
Steve Tyler, Trinity

Consulting Team

Glenda Callaway, Ekistics Corporation
Mark Lowry, Turner Collie & Braden
John Seifert, LBG-Guyton Associates
Jeff Taylor, Brown & Root

7.3 Summary of Public Meetings, May 1999

During the week of 10 May 1999, Region H hosted four public meetings on successive evenings. Since Region H is a large region, four locations were selected to provide as convenient as possible access to the meetings for members of the interested public. San Jacinto College-South (Houston and south); Bear Creek Park (Houston and west); and Walker County Courthouse (north) were repeated as meeting sites. White Memorial Park, which had been used as the meeting site for the eastern part of the Region in the first round, was reserved for school related activities in May and was not available. Wallisville Heritage Park allowed us to meet there.

The purpose of the meetings was to present the population and water demand projections to be used in planning for Region H and to receive comments and requests for corrections or changes to the projections from attendees. The meetings also served as an opportunity to provide an update on Region H water planning and to elicit any concerns attendees have about planning for water supply in the region. Meetings were relaxed, with questions and discussion encouraged.

Each of the meetings followed a roughly similar format:

- Ms. Callaway opened the meeting and introductions were made;
- Mr. Lowry gave a slide presentation on Region H population and water demands;
- Questions were taken during and after Mr. Lowry's presentation;
- Comments were heard from those registering to speak;
- General discussion was pursued as time or interest of attendees allowed.

Comments received at those meetings are summarized below. Transcripts of the meetings are available upon request to the San Jacinto River Authority, the City of Houston, or Ekistics Corporation. Presentation slides are at Appendix B.

On the 10th of May, a day with severe thunderstorms and localized floods a total of 12 people attended the meeting at the Texas Agricultural Extension Service facility at **Bear Creek Park** (which is located in a flood control reservoir). Of those, 3 were not Planning Group or consulting team members. One person made formal comments. She expressed concern that environmental water demands were not present in the data set and pointed out the need for *environmental flows for wildlife, forests, marshes and the bays*. She pointed out the *value of ecotourism to the economy* (and later submitted a newly completed guide to the Great Texas Coastal Birding Trail for the Upper Coast and reports discussing the economic value of birding). She applauded the attention being given to *rice irrigation demand*, and pointed out the use of some rice fields as wildlife habitat. She also discussed the need for *more water conservation* and encouraged local government to take an active approach and pass ordinances to prevent waste of water.

Responding to a question, Lowry pointed out that water demand with "expected conservation" is based on a law passed in 1991 mandating low flow plumbing fixtures and current requirements for water conservation plans. "**Advanced conservation**" will require additional efforts, and will be looked at as a management strategy in Region H water planning. In response to another question, Taylor pointed out that "**conservation pricing**" (higher prices for water) could also be

a viable advanced conservation measure. Taylor also pointed out that environmental water needs will be taken into account in the analysis of available water supply.

On the 11th of May, 23 people attended the meeting held at the **Walker County Courthouse** in Huntsville; 12 of those were members of the interested public. No one formally registered to speak; however, questions and discussion were forthcoming.

One question was whether the Texas State Data Center based its estimates on studies within each county. Lowry responded that the *Data Center methodology* involved sampling, but that information from all the counties was used.

In response to a question about water for cattle, Lowry said that there is a slight increase in *water for livestock* over time, but it is a very small percentage of the total water demand.

The mayor of Huntsville voiced a concern about *how the numbers would be used, how they would affect the city*, and wanted to know if *water would be allocated* according to these numbers. Lowry responded that the Texas Water Development Board (TWDB), in making loan and funding decisions, and the Texas National Resource Conservation Commission (TNRCC), in making permitting decisions, would look to the Regional Plan to determine if the requested action was consistent. He pointed out that an applicant could always provide data to justify a change from the Regional Plan. It was further pointed out that the Plan would be reviewed and updated every five years. It was also stated that the TWDB would be using the sum of the regional plans' projections to determine the water supply facility needs for the State. Everyone agreed that projections for larger aggregated areas (such as the State or the Region) would likely be more accurate than those for the smaller areas (such as small cities). On follow up, Lowry responded that Region H would not be using its plan to allocate existing water; it is focussing on how to meet any identified water shortages.

A question was raised about an *application by Dallas and Fort Worth to reuse their wastewater*, reducing the flow downstream. Lowry responded that there is considerable debate over proposals to reuse wastewater that has been returned to a stream, most of which is treated to a high, though not potable, quality. Rebeck pointed out that the 1997 Water Plan estimated that by 2030 about 10% of the water use in the Trinity Basin would be recycled water. Lowry added that even when water is reused, a portion is generally discharged back into a stream. The TNRCC will look at downstream impacts before they act on reuse applications.

A follow up to earlier questions was a concern about *how the Regional Plan would affect applications for funding* of things such as expanding a water plant if the Regional Plan didn't indicate a need, but the water plant owner had the water demand. Lowry reiterated that evidence of actual growth would be compelling. He said that a conflicting long term projection might be more difficult to support. Rebeck added that the Plan will be updated at five year intervals and that a process for amending at any time has been provided. Callaway added that the SB-1 planning process and the RWPGs continue beyond the initial planning phase. Lowry concluded that the current projections are a base from which to start and illustrate the type of data that will be needed if someone wants to change the projections.

On the 12th of May, 25 people attended the meeting held at **Wallisville Heritage Park** in Chambers County; 18 of those were interested public. There was a lively discussion centering on the need to incorporate information on *freshwater inflows* from the Trinity and San Jacinto Rivers and the *value of the estuary, including the value of Gulf of Mexico* catch and recreational use that is dependent on the estuary, into the plan. It was recommended that *National Marine Fisheries Service data* be sought. Lowry assured attendees that data is being sought from all quarters.

It was clarified that the comment period closing on 21 May applied only to the population and water demands that are the subject of this meeting. It was noted that a *one-page schedule of steps in the Region H planning process* would be helpful.

A question was raised as to how *environmental water needs* could be raised to equal priority with agricultural, municipal and industrial needs since that water demand category doesn't exist. Lowry said that this plan will look at the socioeconomic impact of not meeting needs such as environmental needs.

In response to questions he said this planning process will not be making *water allocations*, nor is it regulatory. The planning process will try to determine how much water is needed, how much is available, and if there are shortages, how they can be overcome.

There was discussion of need for a *socioeconomic study of the Galveston Bay/Trinity Bay ecosystem*. Callaway said several studies related to value of the bay system had been done, but not a comprehensive study of the value of the bay, and that would not be done as part of Region H planning, which will be using available data.

There was a comment that you could look at water supply and subtract from that supply for uses such as estuaries to arrive at an *"available" supply* and then match that to the water needs such as agricultural, municipal and industrial to determine if there is a deficit and then look at alternatives. This is the process that is being followed.

There was a comment that *population growth* could eventually lead to a situation where no more growth could be achieved without tapping into water needed for estuarine maintenance. The opinion was voiced that the human population would always win. Another attendee pointed out that without the *SB-1 planning process and these meetings*, the only people who would have access to the projections would be the "guys in the planning department," rather than rural people or the oyster industry. It was asked if the *assumption* was that there would be absolutely *no population control or population growth planning* of any kind. Lowry responded that he was not aware of any specific controls for limiting population. The TWDB projections do consider available land area for development or for redevelopment at higher population densities as a limiting factor. Lowry offered the opinion that putting the projections and economic impact numbers on the table will result in better decisions.

It was pointed out that *changes in technology* can result in huge changes in the projections. The example of decline in industrial water use following EPA mandated changes in treatment of cooling water was given.

There was a question about the impact of the Wallisville Saltwater Barrier on releases from Lake Livingston; would it cut off all flow. Lowry said there would be a determination made of the *freshwater inflow needs*, which may or may not be as high as the amount of water needed to keep the saltwater back; there would be some flow.

A comment was made that *back room deals* would be in control. Another comment was made about the Galveston Bay Freshwater Inflows Group working on the problem of how much, when and where freshwater inflows are needed. Putting that information out in the open makes it more difficult to do the back room deals. Another commentator pointed out that attending these meetings was important: to say that the bay's needs are important. Callaway responded that transcripts of the meetings are being made and summaries distributed to let the Regional Water Planning Group and others know what attendees think is important.

The issue of *water reuse in the upper basin* and its potential impact on the downstream area was raised. Lowry pointed out that TNRCC would be looking at downstream impacts when considering applications for reuse.

There was a comment opposing *transbasin diversions*. Rebeck commented with respect to the Sabine River and Toledo Bend Reservoir, which was a state participation project. The State put in half the money; payback of that money was based on two things: hydroelectric power and water supply. Well there is no water supply, because the wilderness people had enough political force to stop that part. The contract was rewritten to be based strictly on hydroelectric power.

There was a question about the percentage reduction in demand that is allowed for in the "*expected conservation*" case. The comment was made that nationally about 10% reduction could be achieved by things such as low flow plumbing fixtures; that should be an expected amount. The suggestion was made to take a closer look at what could be done to achieve aggressive or advanced conservation savings. Lowry said that would be looked at in the management strategies. A discussion of lawns and watering followed. A comment was made that 10% conservation savings on municipal use wouldn't have a significant impact on water needed for estuarine maintenance. Lowry responded that depended on the size of the population. The opinion was expressed that not wasting resources is a mind set our nation needs. Lowry agreed that 10% conservation off peak day use could make a significant difference in the amount of plant needed.

A question was raised about whether it is assumed that all the municipal water in *Liberty County* is provided by *groundwater* through 2050. Lowry responded that groundwater supply is being assessed. If groundwater is sufficient and of reasonable quality, then it would be assumed that Liberty County would stay on groundwater. If groundwater is not sufficient, then we'll be looking at management strategies. It might be possible for a larger city to increase its use of surface water so that Liberty County can continue to use groundwater.

Specific comments on the population projections and water demands were: (1) Anahuac is two square miles with a lot of public land in it. It is surrounded by the Trinity Bay Conservation District, which performs the same services--water and sewer. Anahuac will not get any bigger geographically, and probably won't see much population growth. (2) Why does Galveston County Other grow until 2050 and then drop off to 18,000 people? (3) Clear Lake Shores in Galveston County is basically an island, but is expected to almost triple in population; that doesn't seem realistic.

One formal comment was made on behalf of the Galveston Bay Estuary Program: supporting the *maintenance of freshwater inflows* to preserve habitat, and a request to consider the *quality of waters returned to the Bay*.

There was a question about the *definition of "mining"* for Region H. Lowry responded that mining is an activity that involves the development of mineral resources and may require the use of water for extraction purposes or for washing of whatever mineral it is. It could be coal, sulfur, limestone, gravel. In response to a question about the amount of water allocated to mining, Lowry said that in some cases water had to be pumped out of the aquifer to allow the mining to take place. In that case, return flow to a stream was probably near 100%, but it was a withdrawal from the aquifer.

Sullivan said that one indicator that the Planning Group cares what those in the eastern part of the region think is the fact that one of the four meetings being held in the entire Region is being held in Chambers County. He suggested that people in the eastern part of the region may have more political support than they realize, and requested that they continue to participate in the planning process.

On the 13th of May, 13 people attended the meeting at *San Jacinto College-South*. Of the eight members of the interested public, six were first time attendees. Responding to a question, Lowry said that *growth* in Fort Bend County might be expected to *"taper off"* eventually as population density increases and available desirable land is developed. Using the example of a utility district, Lowry said they typically experience rapid growth for 10-12 years, and then much slower growth as they approach full build out. He pointed out that cities have the ability to annex, so this tapering off of growth is less easy to see in the projections than it is for counties. The comment was made that as growth in the more populated areas slows down, it will move out to the less populated areas such as Madison County. Taylor added that this phenomenon is captured in the analysis of in- and out-migration for each county.

A question was raised about projections for the City of Pearland. (It was noted that city projections are allocated to each of the counties in which they are located.)

Responding to a question about *manufacturing water demand*, Lowry said that most large manufacturing is handled separately from the projection of population. Small commercial or manufacturing operations that receive their water from a municipal facility may be reflected in higher per capita water usage for those areas. Lowry noted that Butch Bloodworth of the TWDB

would be speaking about industrial demand at a meeting next week hosted by the Chemical Manufacturers Association.

Asked about the cause of *higher water usage under the "below normal rainfall condition,"* Lowry responded that it was primarily landscape irrigation. Although he did not have on hand an exact percentage difference in use, Lowry said it is not a large amount, but that the increased use occurs when a system is already taxed. Taylor pointed out that a "drought" condition is a worse case than "below normal", and that drought is used to determine safe yield of surface water reservoirs.

A comment was made that *water from rice fields* is usually pretty clean and *could be reused*. It was noted that agriculture is experiencing the same kind of movement to the outlying counties as is growth.

There was discussion of the *schedule* for submitting population and water demand projections to TWDB for approval.

On question about the *authority of the TWDB*, Callaway responded that their primary responsibilities are statewide planning and financing for water related projects. In answer to a follow up question, Taylor said that TNRCC permits water use.

The comment was made that TNRCC would eventually by default *control population and development* in the state, giving the analogy of sewer permits determining where growth could occur in a city. California was cited as an example of growth being water limited. Taylor said that was an elected official policy discussion. In his opinion the mind set in California is different from that in Texas. In Texas, he sees the likelihood that when total water demands are determined -- including environmental or recreational flows -- Texas will do something to obtain that amount of water. In California, public policy decisions made over the last 20 or 30 years have left them without enough water to meet demands for the next 15 years.

A comment was made that huge *technological advances* have occurred in seawater *desalinization*. As a result, desalinization is much more economical. Citing a Tampa contract recently bid, the cost of water from desalinization had dropped from \$6.00 per thousand gallons three or four years ago to \$2.00 per thousand gallons today. There was agreement that such technological changes would change all the equations. Given that, it was stated that interbasin transfers would not occur. Lowry pointed out that transportation was a big part of delivered cost, so desalinization would probably not supply Dalhart. Another speaker said that it might be as easy to desalinate in Freeport and pump it to Houston as to move water from Toledo Bend to Houston.

Lowry commented that water could then be moved from *Toledo Bend* to somewhere closer to them. Taylor said East Texas is realizing that it has a renewable resource that they could receive some compensation for if they let the process work. They're going to see that communities like Houston, Dallas and Fort Worth are going to go other places and get the water they need.

Another speaker commented that there is still a mind set in East Texas that they've got the water, so eventually people will come to them rather than to Houston.

There was a comment from a representative of a committee in Brazoria County that is looking at long range problems noting that water supply was one-half of their water problem but the other side was peak discharge (or *flooding*). He suggested that managing flood flows might provide additional local water supply. He added that the drainage district commissioners were not involved in or knowledgeable about Region H planning. Lowry pointed out that the charge to the RWPG was to develop a plan for supply of water rather than removal of water.

Commissioner Harris noted that Brazoria County was about to begin developing a county-wide drainage plan to address some of those concerns.

Table 7-2: Attendance at Public Meetings, May 1999**10 May 1999, Bear Creek Park, Houston (west)****Interested Public**

Pamela Rocchi, Harris County Pct. Four,
Spring
Page Williams, Sierra Club
Ray Zobel, Cypress Creek United Civic
Assn., Tomball

**Region H Water Planning Group
Members**

Jim Adams, SJRA, Conroe
Roosevelt Alexander, Brookshire

**Region H Water Planning Group
Members (continued)**

John Bartos, Galveston Bay Foundation,
environmental
Ron Hudson, City of Houston, Houston

Consulting Team

Glenda Callaway, Ekistics Corporation
Becky Olive, Turner Collie & Braden
Mark Lowry, Turner Collie & Braden
John Seifert, LBG-Guyton Associates
Jeff Taylor, Brown & Root

11 May 1999, Walker County Courthouse, Huntsville**Interested Public**

Debra Daugette, City of Huntsville,
Huntsville
Charles Elliott, Trinity
Don Farris, Madison County Commissioner,
Midway
Leigh-Anne Gideon, Huntsville Item,
Huntsville
Bill Green, Mayor, City of Huntsville
Mack Hurd, Westwood Shores MUD,
Trinity
Mike McClurg, Trinity Chamber of
Commerce, Trinity
Mrs. Mike McClurg, Trinity
Tim Paulsel, Walker County Commissioner,
New Waverly
Jim R. Sims, Trinity River Authority,
Huntsville
Mrs. Teer, Centerville
Frederick M. Weiwszike, Riverside

**Region H Water Planning Group
Members**

Jim Adams, SJRA, Conroe
Robert Bruner, Huntsville
Mark Evans, Trinity County Judge,
Groveton
Jeff Henson, TPWD, Bryan (alternate)
Ernest Rebuck, TWDB, Austin
William Teer, Southeast WSC, Centerville
Steve Tyler, Trinity

Consulting Team

Glenda Callaway, Ekistics Corporation,
Houston
Mark Lowry, Turner Collie & Braden,
Houston
John Seifert, LBG-Guyton Associates
Ann Wood, Brown & Root, Houston

Table 7-2: Attendance at Public Meetings, May 1999 (continued)**12 May 1999, Wallisville Heritage Park, Wallisville****Interested Public**

Steven M. Anderson, Galveston Bay Estuary
Program, Webster
H. M. Carleton, Wallisville
M. T. Carleton, Wallisville
Sue Hawthorne, Anahuac Progress, Anahuac
Guy C. Jackson III, Coastal Oyster
Leaseholders Assn., Anahuac
Tom Michel, Subsidence District,
Friendswood
Harris Miller, Trinity Bay Conservation
District, Anahuac
Ben H. Nelson, Smith Point
Joe Nelson, Smith Point
Sammy M. Ray, Texas A&M-Galveston
Linda Shead, Galveston Bay Foundation,
Webster
Jim Stansel, Texas A&M-Beaumont
Cynthia Stevenson, GBF, Houston

Interested Public (continued)

Vernon Turner, Trinity Bay Conservation
District, Anahuac
Kay Willcox, Anahuac
Pudge Willcox, CLCND, Anahuac
Laura Yarbrough, USDA-NRCS, Anahuac
Billy Yarbrough, farmer, Liberty

**Region H Water Planning Group
Members**

David Jenkins, Stowell
Michael S. Sullivan, Houston
Ernest Rebuck, TWDB, Austin

Consulting Team

Glenda Callaway, Ekistics Corporation
Mark Lowry, Turner Collie & Braden
John Seifert, LBG-Guyton Associates
Doris Davis, Brown & Root

13 May 1999, San Jacinto College-South, Houston**Interested Public**

Steven Anderson, GBEP, Webster
Don Braddock, Chocolate Bayou Water Co.,
Alvin
Jace Houston, Subsidence District,
Friendswood
Leo Jaehnig, Chevron Chemical Co.,
Baytown
Mike Palmer, Brazoria Co. Ag. Ext., Alvin
David W. Plaisance II, Clear Lake City
Water Authority, Houston
Joseph L. Slack, Lake Jackson
R. E. Tillman, Brazoria Co. Ag. Ext.,
Angleton

**Region H Water Planning Group
Members**

Jack Harris, Brazoria County Commissioner,
Pearland
Jarrett O. Woodrow, TPWD, Houston

Consulting Team

Glenda Callaway, Ekistics Corporation
Mark Lowry, Turner Collie & Braden
Jeff Taylor, Brown & Root

7.4 Summary of Public Meetings, February 28 – March 2, 2000

During the period February 28 – March 2, 2000, four public meetings were held by the Region H Water Planning Group (RWPG) to inform the public of progress in developing a regional water plan and to receive public comments. Meetings were held at widely dispersed locations to provide maximum accessibility to the residents of the region. The meetings are summarized briefly below. The presentation slides and handouts from these meetings are at Appendix C.

Walker County Courthouse, Huntsville, 28 February 2000

The Walker County meeting was not as well attended as in the past. Judge Wagamon said that the Texas Department of Transportation was holding a public meeting at the same time on important highway improvements.

After a brief presentation by Jeff Taylor, several speakers discussed the demand indicated in the Texas Water Development Board (TWDB) database for a power plant. It was noted that the plant could be one that settled in Grimes rather than Walker County or could be one that was proposed but has not yet materialized. Taylor suggested that the importance for water planning is that without that plant, groundwater likely is sufficient to meet future water demands in Walker County. If there is a power plant, a management strategy for additional surface water supplies will be needed.

There also was a discussion of the definition of “non-municipal.” Taylor explained that it is a demand not associated with a city, such as manufacturing, irrigation, mining, power and livestock. He suggested each of the attendees pick up the handouts for each of the 15 counties. The handouts contain all of the water use groups in that county and then the non-municipal categories that show water shortages.

As Taylor presented the analysis of freshwater inflow needs, he responded to a question about the meaning of “MaxH”. He said that MaxH stands for the maximum fisheries harvest to be achieved if everything is done right, a quantity of about 5.2 million acre-feet per year (maf/yr). Historically, the bay has received this amount about 66% of the time. The Galveston Bay Freshwater Inflows Group (GBFIG) has recommended that if the MaxH flow could be accomplished at least 50% of the time, then that would be acceptable. He noted that the historical average inflows are 10 maf/yr and the historical minimum flow is about 1.8 maf/yr. He added that it’s important to define not only how much, but the quality, seasonality and the locale of freshwater inflows into the bay.

Taylor then introduced the work to be done on management strategies to meet water shortages and sketched out the remaining schedule for preparing the draft regional water plan. He noted that comments or questions on any of the items from this meeting could be directed to Mr. Adams by April 1.

Taylor asked whether and how the drought affects livestock ranchers in Leon, Madison and Walker counties. He noted that the demand and supply numbers suggest that there is not problem in those counties. He said that the planning team needs to know if that is an issue.

Mr. Teer noted that the drought does have a very comprehensive effect on the cattle industry in Leon County, even though there is ample water available. Ranchers are dependent on natural rainfall to supply the stock ponds and to irrigate the pastures. They can't afford the groundwater.

Taylor responded that that's the type of message that a legislature needs to hear. That was one of the purposes of doing Senate Bill 1 planning at the local level. He said that there are few existing mechanisms to fund building groundwater supplies to service the livestock industry. However, he noted that doesn't mean it must be that way tomorrow. If that's the issue, if there is available groundwater and it's just a function of paying to get it to the end users, the cattle industry, that that ought to be noted in the plan.

An unidentified speaker commented that it sounds as if the water is needed for more than stock ponds. Mr. Teer clarified that ranchers need to grow the feed, the hay, and not everyone is equipped to irrigate their pastures and certainly can't afford public water. An unidentified speaker commented that during the last drought of record, many small cattle ranchers just got out of the business. Taylor said that if the State of Texas defines maintaining that industry as an important enough goal, then maybe funds can be found to accomplish that goal.

Callaway asked for an explanation of what was happening to uncommitted groundwater shown on the table for Fort Bend County. Taylor said that this anomaly was being caused by fluctuations in irrigation water demand, but that it did not represent a large amount of water. He noted that while Fort Bend has been considering a groundwater conservation district, these numbers do not assume that district exists. If that district is created and passes regulations restricting groundwater availability, then the water shortages indicated would increase.

Mr. Stout commented on the difficulty of increasing groundwater withdrawals in an area already experiencing subsidence. He noted that it would also be difficult to build a bunch of reservoirs. Taylor said that he was not going to presuppose the answer on management strategies, but that it ought to be possible to increase groundwater withdrawals in some areas and for some time periods. Mr. Adams added that Region H is looking at areas in which groundwater has not been mined in the past. As an example, Taylor said that the numbers show that The Woodlands has a shortage in the year 2050 of about 2 MGD, so if the decision were made to pump groundwater an additional 2 MGD, The Woodlands would have enough water. However, the County of Montgomery, has a shortfall of 52,000 acre-feet, or roughly 50 MGD, which is a significant shortage. He said that rather than looking just at The Woodlands, the RWPG needs to look at the county as a whole.

Nolan Ryan Center, Alvin, 29 February 2000

The Nolan Ryan Center was a new meeting site for Region H, and proved to be a popular location. The Alvin meeting had the highest attendance of the four meetings, and a large number

of attendees had not previously attended a Region H public meeting. Brazoria County Commissioner Harris opened the meeting.

Jeff Taylor began with a brief description of Region H water planning and the Senate Bill 1 process. He noted that handout materials provided details of his presentation on the analysis of water supply and demand for each of the fifteen counties. He said that the presentation this evening would cover all of Region H, but would focus on communities in Galveston, Harris, Fort Bend and Brazoria counties.

Taylor presented information on currently available water supplies, environmental water needs, and possible solutions – called water management strategies - to water shortages. An incorporated city or town, generally with a population of 1,000 or more, is defined as a “water user group.” Taylor said that in Region H, there are about 170 “water user groups.” Additionally, there are non-municipal water use categories: irrigation, manufacturing, mining, power, and livestock. The task is to define these demands and then look at how much supply is available to meet those demands. After the demand/supply comparison, the communities that are projected to have water shortages are identified, and these communities are the focus for developing strategies to fix the problems.

As an overview, Region H water demand is projected to grow to about 3.2 million acre-feet by the year 2050. Right now, in the 15 counties in Region H, current supplies of groundwater and surface water total about 3.5 million acre-feet. It would appear that there is no water shortage. However, the communities that need water are not necessarily the communities that have these water supplies. Regional water planning is addressing ways to ensure that user groups that need water can obtain water.

Taylor noted that of the more than 170 water user groups, over half of them have projected shortages in the long term (2050). Although Region H has substantial quantities of available water supplies, there will be localized shortages to be addressed. Region H will need to figure out how to move, transfer, or share, currently uncommitted water supplies to those entities that need them. He also noted that Region H, when compared to the other 15 regions in the State, has the most people and the largest water demand of any of the regions and is one of the biggest contributors to the State’s economy.

Taylor presented information in three broad categories: groundwater dependent counties that will have adequate groundwater to meet growth for the next 50 years; groundwater dependent counties that will not have sufficient groundwater supplies to meet growth needs; and surface water dependent counties. He presented information on specific communities and specific non-municipal water users.

He then presented information on water available to address the shortages. He noted that Leon and Madison counties were the only counties with substantial uncommitted groundwater supplies. He then reviewed surface water supplies available to the Region.

Taylor then addressed environmental water needs in Region H. He said that the State of Texas has recognized that bays and estuaries are important economic generators for the State. He noted that Galveston Bay is the second most productive estuary in the United States and contributes a lot of revenue to the Region. He recounted the work of the Galveston Bay Freshwater Inflows Group in addressing freshwater inflows needed for the Bay to sustain its productivity over the long term. He said that the average historical inflow to the Bay from all sources is about 10 million acre-feet per year, while the maximum harvest is achieved with 5.2 million acre-feet per year. The group is working with the RWPG to define how that need can be met.

A question was asked about whether the group was defining what they Bay needs and then backing into how much water is left to meet shortages. Taylor noted that looking at environmental flows is very different from looking at consumptive use shortages, and the management strategies are very different. While the issues are interrelated, they must be analyzed separately and then balanced together. He said that it probably would be at least another year before the Freshwater Inflows Group could recommend management strategies.

He said that the next step for the RWPG is to define management strategies to address the shortages and to address the Galveston Bay Freshwater Inflow Needs. The Senate Bill 1 process requires very specific information: who has the shortage, how much water is needed and exactly how will that amount of supply be met, with cost estimates. He provided a list of some of the management strategies that are being looked at. He itemized extending or expanding existing contract agreements; contractual transfers; developing new groundwater or surface water sources; wastewater reclamation and reuse; aggressive conservation programs; interbasin transfer of supplies; and other strategies that someone may define. He said that each of the water user groups were being asked to advise the RWPG if they have water supply plans they are already working on.

Upon question, Taylor explained that some communities in the lower Brazoria area were shown with water shortages even though the Brazosport Water Authority has adequate water supply because many of the communities need to extend or expand their contracts beyond their current terms and amounts. Others of those communities or industries are not customers of BWA.

Taylor responded to another question about growth in Brazoria County. He said that significant growth is occurring in the projections shown.

A question was raised about whether the Brazoria cities will stay on groundwater. Taylor replied that there is an assumption that Gulf Coast Water Authority option agreements are exercised over time. He pointed out that GCSA has option agreements with Pearland, Sugar Land, Missouri City, Fort Bend WCID No. 1 and Stafford. A speaker noted that Alvin is the only city that shows up on the map of shortages. Another asked if Alvin is projected to stay on groundwater, and Taylor responded affirmatively. On question about Manvel, Taylor replied that Manvel's supply is sufficient.

There was a discussion of the effects of continued groundwater pumpage in northern Brazoria County on subsidence in Fort Bend, Galveston and Harris counties. It was noted that a potential new subsidence district is an institutional change that is not currently in the Region H work.

There was a discussion about whether water supplies are physically available when water contracts are being extended or increased, particularly in the lower Brazoria area. Taylor said that supply reliability and availability during dry weather were taken into consideration. He pointed out that extending contracts is a tool to look at shortages to see if other management strategies, such as building reservoirs, need to be developed. He said it also alerts communities that they need to take care of contracting for their future water needs.

Another speaker questioned whether water quality had been looked at. Taylor said that in general the quality was looked at for groundwater, but not for surface water. He requested that anyone who has had problems with water quality, such as saltwater intrusion, contact the RWPG and let them know.

There was a question about other factors considered in determining surface water availability: Galveston Bay needs or water available in bayous or other streams. Taylor responded that all reliable supplies were included: reservoirs, and reliable river supplies. Supplies deemed unreliable were not included. Freshwater inflow needs are not yet accounted for, but will not affect the reliable supplies. Much of the flows to the Bay are stormwaters that are flowing through the reservoirs and are not controlled. In addition, return flows coming from treatment plants are inflows to the Bay. There are many streams and bayous that are not developed water supply sources that contribute freshwater to the Bay. Taylor reiterated that the aim of the water supply table is to define reliable supplies and use only those supplies to meet projected demands.

A question was raised about Brazos River flows. Taylor said that they include the natural flow of the river plus and releases contracted for from the Brazos River Authority. Another speaker noted that BWA does not have contracts with BRA, so their supply would be run of river, their permitted Brazos River supply. It was noted that BWA water comes through Dow reservoirs, increasing their reliability.

Taylor then laid out the schedule to complete the Regional Water Plan. He asked for comments if there are any concerns about the work. In response to questions, he said that tables with detailed information can be made available upon request.

A speaker questioned whether there was any thought of using reservoirs on small streams in the lower part of the region. Taylor responded that the management strategies are not complete yet. He said that reservoirs are being looked at from two perspectives: major reservoirs, such as the proposed Allen's Creek Reservoir with yield of about 100,000 acre-feet or 90-100 million gallons per day, and also smaller off-channel storage to improve reliability of water rights, particularly in the lower Brazos River. Taylor said that a hydraulic model of the lower Brazos indicates that of the total 800,000 acre-feet of water rights, only about 500,000 acre-feet are reliable. Who gets the water is based on seniority of water rights. Where and whether reservoirs on smaller streams would make sense would be determined by where the water shortages exist.

The question was raised about coordination with neighboring, particularly upstream regions. Taylor said engineers for both regions are using the same model. Mr. Rebeck from the Texas Water Development Board commented that the regional plans will all be integrated into a State Water Plan for submission to the Legislature. Taylor added that the TWDB is charged with resolving any conflicts between the regional plans.

One speaker commented that, with the tables as presented, most people wouldn't notice that water supplies are coming from entirely different watersheds. Taylor responded that the way the table looks could be changed. He said that as management strategies are developed, that type of concern would be more apparent.

There was discussion of moving Trinity River water down into Galveston and Brazoria counties or Brazos River water over to communities not now served. It was noted that conveyance facilities would be important. Taylor pointed out that the City of Houston currently supplies water in Fort Bend County and Galveston County. He said that Region H is entirely dependent on moving water to where it is needed.

Taylor noted that the regional water planning process is designed to have updates every five years. If there are institutional changes, such as new groundwater districts, or new subsidence district regulations, they will be taken into account in future updates to the regional plan. Rebeck noted that the RWPGs have the option to make recommendations for legislative changes.

In response to question about interbasin transfers, Taylor said that a law following on SB-1 provided that while interbasin transfers can occur, the water transfer becomes junior in its water right to all other permits. He suggested that in the short term future, interbasin transfers would be limited. He noted that in some river basins, there might be cases where no downstream water rights exist, and so a junior rights provision would have no effect. There was a discussion about whether this provision would be rescinded.

There was a question about increasing return flows in the water models. Taylor said that the models absolutely show increasing return flows and water usage increases.

Houston-Galveston Area Council, Houston, 1 March 2000

On behalf of Region H, Mark Lowry presented a brief description of SB-1 planning and then discussed the process followed to develop population and water demand projections, to identify major water providers and available water supplies and management strategies to meet water needs. He noted that regional water plans will be reevaluated at five-year intervals.

A speaker questioned whether the absence of available groundwater in Harris County reflects restrictions by the Harris-Galveston Coastal Subsidence District. Lowry responded that that is correct. He added that Fort Bend groundwater available does not reflect any restrictions from that Subsidence District because there are no existing restrictions. If regulations in Fort Bend

restrict groundwater in the future, then those restrictions would have to be accounted for in future updates of the regional water plan.

Another speaker asked if the HGCSO schedule for converting from groundwater to surface water is reflected in the projections for Harris and Galveston counties. Lowry said that schedule was taken into account.

Lowry then addressed the topic of environmental water needs, which are not categorized as a specific water user group, but are important to the region's economic livelihood. He noted that because of return flows, environmental flows cannot simply be added to water required for other needs to reach total water needs. He presented the recommendation from the Galveston Bay Freshwater Inflows Group.

A speaker questioned whether the data indicated that it is possible to have too much freshwater for maximum bay productivity. Lowry responded that was correct. He noted that location, seasonality, quality and amount are all important factors in determining inflows for bay productivity. He said that management strategies would need to be developed to meet those conditions.

Lowry presented a list of potential water management strategies being considered by Region H. He said the first strategy is extending or expanding current water supply contracts. He noted that water management strategies are important, because the TWDB will look for strategies in the regional plan when making financing decisions.

A speaker asked about the amount of water conservation that is taken into account in the water use projections, and the added amount that could be achieved with "aggressive" water conservation. Lowry replied that about 7-10 percent reduction in demand is built into the projections, and that another 10 percent might be achievable.

In response to question, Lowry said that an example of aggressive conservation would be an automatic lawn sprinkler program to reduce outside water usage. Another speaker suggested that pricing programs are very effective. Other methods included plumbing retrofit programs and residential and industrial water use audit programs. Lowry added that the City of Houston has had an aggressive conservation program aimed at detecting and repairing leaks in fountains or pools in its system.

A speaker asked if there were studies of the average amount of loss in city systems. Lowry responded that both TWDB and Texas A&M had active programs in that area. Ernie Rebeck added that TWDB has a staff person who will visit with cities to help them reduce leaks. He suggested that a 10 percent loss was probably a good target. Gary Oradat from the City of Houston said that their system is operating at about 15 percent pumpage loss from leaks. Another speaker said his community operates with about 12 percent pumpage loss. Mr. Oradat added that line breaks caused by cable contractors damaging or severing lines is a problem. He said that illegal taps remain a problem. Judge Bilski suggested that fire hydrants and fire event also affect pumpage loss.

Lowry concluded by giving the schedule for completing the regional water plan by January 5, 2001. He suggested that additional comments be sent to Jim Adams, the RWPG chair. Mr. Adams said that October is a realistic drop-dead deadline for comments.

A speaker asked if oyster and shrimp harvest is considered to be the critical factor in determining environmental flow in the Galveston Bay estuary. Callaway replied that inflow requirements were based on looking at six species that represent the entire ecological system. Mr. Adams added that the inflow needed for maximum oyster harvest might not be the same as for the maximum shrimp harvest.

There was a discussion of how median and average inflows to the bay were calculated from the 50 years of monthly data. There was a question about whether the difference between the recommended inflows and average inflows could be developed and diverted. Callaway responded that GBFIG is still working on that and other management questions.

Another speaker asked if the inflows data included return flows. Callaway responded that it did.

There was a discussion of water quality standards as they relate to rainfall, return flows and nutrients in the inflows.

Judge Bilski asked for further discussion of potential reservoir development, particularly the Allen's Creek project. Lowry responded that the RWPG had looked at potential reservoir sites, but has not yet looked extensively at particular reservoirs. Mr. Adams noted that Allen's Creek reservoir was likely to be included in the plan.

In response to a question, Lowry discussed the effect of the junior water rights provision on interbasin transfers as a management strategy.

Judge Bilski brought up the topic of groundwater conservation districts. She said that Austin County is looking at the possibility of joining with neighboring counties to form a district. She asked how that would be dealt with in the management strategies. Mr. Adams responded that it wouldn't be taken into account until the district is created. Judge Bilski noted that it would be good to know that there is consideration of the long-term needs, beyond 50 years, before any supplies are used elsewhere.

A speaker asked if it is the responsibility of the TWDB to make sure that one part of the state doesn't hold another part of the state hostage. Mr. Adams said that the TWDB is charged with resolving conflicts between the plans.

Wallisville Heritage Park, Chambers County, 2 March 2000

Chairman Adams opened the meeting. Mark Lowry made the presentation for Region H.

A speaker questioned the irrigation water use projections. Lowry said the Region H has revised the projections provided by the TWDB by looking at current usage information. The Region H projections are slightly higher than the original projections.

Mr. Sullivan asked Lowry for more comment on the shortage projected for Baytown in Chambers County. Lowry said that cities located in more than one county are separated into each of the counties. He said that the Baytown shortage probably could be met simply by extending and expanding the city's current contract for water supply.

One speaker commented that oysters are impacted by freshwater inflows more than other species because they cannot relocate. Lowry said that the GBFIG has requested that the RWPG not consider any strategies that would prevent the max harvest amount from being reached at least 50 percent of the time.

In response to question, Lowry said water supplies are being looked at during drought of record supply availability. Demand conditions are not drought of record, but are low rainfall with expected conservation.

In response to question about supplies for Winnie and Stowell, Lowry responded that their supplies were provided by the Lower Neches Valley Authority in neighboring Region I.

A speaker questioned whether Region H is looking at regionalizing cities that are on individual wells. Lowry replied that that was not part of the planning effort at this time. If there is enough groundwater to continue to serve the demands, no shortage is noted. In response to question, John Seifert added that groundwater quality is generally better to the west than to the east.

A speaker questioned the steps that Region H would take to address freshwater inflow needs. Lowry described the state's water availability modeling effort that will help address how freshwater inflow needs can be met.

A speaker suggested that scenarios of management strategies, similar to the effort undertaken by the Lower Colorado River Authority, for providing freshwater inflows need to be analyzed. Another speaker responded that estuaries are different and what works in one won't necessarily work in others. Another speaker said that the institutional process could work.

Jeff Taylor commented that the freshwater inflows analysis must take into account the movement of water between basins and flows from the coastal basins and all the things that make Galveston Bay unique. Any solution must address that.

A late arrival asked about water for agriculture. Lowry summarized his earlier presentation. A specific question was raised about how Harris County water users would be treated. Lowry responded that the RWPG would develop management strategies for any user group with an identified shortage.

A speaker asked if the zeroes in the tables indicate that there is not shortage. Lowry said that is the case. He said that negative numbers indicate a shortage that will require a management strategy.

There was a discussion of the classification of aquaculture operations as industrial rather than agricultural by the Texas Natural Resource Conservation Commission. Lowry confirmed that the RWPG was using the classifications as they exist. The speaker suggested that the classification for aquaculture needs to be changed because of discharge permitting requirements.

A speaker questioned the shortages shown for Liberty and Cleveland. Lowry responded that those cities need additional well and storage facilities to meet their demand.

A speaker commented on the fact that people will wait until the draft plan is produced to show up and object to something rather than attending the earlier meetings. Lowry said that an enormous attempt has been made to publicize the meetings, but at every meeting someone shows up who just heard about the regional water planning effort.

Table 7-3: Attendance at Public Meetings, February-March 2000

28 February 2000, Walker County Courthouse, Huntsville

Interested Public

Jim R. Sims, Trinity River Authority, Huntsville
 Bob Stout, The Woodlands Operating Co.
 Barbara Taylor, Riverside Water
 Basil R. Vincent, Lake Area Tourism Councils
 Charles Wagamon, Walker County Judge
 Frederick M. Weiwzieke, Riverside

Region H Water Planning Group Members

Jim Adams, SJRA, Conroe
 William Teer, Southeast WSC, Centerville

Consulting Team

Glenda Callaway, Ekistics Corporation
 Jennifer Elms, Turner Collie & Braden
 Daomean Lin, Turner Collie & Braden
 Mark Lowry, Turner Collie & Braden
 Becky Olive, Turner Collie & Braden
 John Seifert, LBG-Guyton Associates
 Jeff Taylor, Brown & Root

Table 7-3: Attendance at Public Meetings, February-March 2000 (continued)**29 February 2000, Nolan Ryan Center, Alvin****Interested Public**

Will Berry, PEDC, Pearland
 Phyllis Blankenberg, Alvin-Manvel
 Chamber of Commerce
 Matt Bochat, Brazoria Co. Extension Agent-
 Agriculture
 Don Braddock, Chocolate Bayou Water,
 Alvin
 Dave Buzan, TPWD
 Dick Carter, City of Alvin
 William Dulm...Jr., Rice Farmer, Alvin
 Paul Golden, Alvin
 M. G. Hoiseth, Alvin
 Aubrey Horner, C&R Drainage District #3
 Charles Johnson, Freeport
 Ricky Kubeczka, C&R Drainage District #3
 Hassan Moghaddam, Walsh Engineering,
 Inc., Pearland
 Mike Palmer, Alvin
 Lucy Pannell, Texas-New Mexico Power,
 Alvin
 Tom Reid, Mayor, City of Pearland
 W. Earl Ryan, Danbury Fish Farms
 Leroy Slacalek, Ft. Bend Farm Bureau
 Larry Stanley, Brazoria County
 Tom Stansel, Alvin
 Neal Stanton, Stanton's Shopping Center,
 Brazoria
 Doyle Swindell, Alvin
 Richard E. Tillman, Brazoria County
 Extension Service
 Clayton Trent, Trent WW
 C. J. Waller, L&W Excavation, Manvel
 W. Ross Werlla, Rosenberg
 Michael Wright, The Facts, Clute
 Jim Young, Guidry News

**Region H Water Planning Group
Members**

Jim Adams, SJRA, Conroe
 Jack Harris, Brazoria County Commissioner
 Carolyn Johnson, Dow/TCC
 Tom Manison, Friendswood
 Ernest Rebuck, TWDB
 Woody Woodrow, TPWD

Consulting Team

Glenda Callaway, Ekistics Corporation
 Bruce Davidson, Turner Collie & Braden
 Mike Garmon, Turner Collie & Braden
 Mark Lowry, Turner Collie & Braden
 John Nelson, LBG-Guyton Associates
 Jeff Taylor, Brown & Root
 Ann Wood, Brown & Root

Table 7-3: Attendance at Public Meetings, February-March 2000 (continued)**1 March 2000, Houston-Galveston Area Council****Interested Public**

Carolyn Bilski, Austin County Judge
 Joe Bilski, City of Sealy
 Jim Dannenbaum, Dannenbaum Engineering Co.
 Carl Masterson, Houston-Galveston Area Council
 Kenneth Roberson, HCUD #15, Houston
 A. Unterharnscheidt, Houston Canoe Club

Region H Water Planning Group Members

Jim Adams, SJRA, Conroe
 John Bartos, Galveston Bay Foundation, Houston
 James Murray, Exxon-Mobil, Baytown
 Gary Oradat, City of Houston

Region H Water Planning Group Members (continued)

Ernest Rebuck, TWDB
 C. Harold Wallace, West Harris County WSC
 Chad Norris, TPWD (alternate)

Consulting Team

Glenda Callaway, Ekistics Corporation
 Ed Copeland, Turner Collie & Braden
 Alan Potok, Turner Collie & Braden
 Mark Lowry, Turner Collie & Braden
 John Nelson, LBG-Guyton Associates
 Becky Olive, Turner Collie & Braden
 David Parkhill, Brown & Root
 Jeff Taylor, Brown & Root
 Ann Wood, Brown & Root

2 March 2000, Wallisville Heritage Park, Wallisville**Interested Public**

Henry Azar, CLCND, Mont Belvieu
 John B. Cheesman, Jr., CLCND, Anahuac
 Bobby Edwards, Aquaculture, Stowell
 Guy C. Jackson III, Coastal Oyster Leaseholders Assn., Anahuac
 Jim Kirkham, CLCND, Anahuac
 Kevin Ladd, Wallisville Heritage Park
 Linda Shead, Galveston Bay Foundation, Webster
 Kay Willcox, Anahuac
 Pudge Willcox, CLCND, Anahuac

Region H Water Planning Group Members

Jim Adams, SJRA, Conroe
 David Jenkins, Stowell
 Michael S. Sullivan, Houston
 Ernest Rebuck, TWDB, Austin
 Woody Woodrow, TPWD

Consulting Team

Glenda Callaway, Ekistics Corporation
 Ed Copeland, Turner Collie & Braden
 Mark Lowry, Turner Collie & Braden
 John Seifert, LBG-Guyton Associates
 Ann Wood, Brown & Root
 Jeff Taylor, Brown & Root

7.5 Public Review and Comment on Initially Prepared Plan

Identification of Libraries

The RHWPG contacted each of the County Judges in the region and requested their assistance in identifying the public library in each county that would be most appropriate for placing a copy of the initially prepared Draft Regional Water Plan for public review. The libraries selected, together with the County Clerk's office in each county, are listed in Table 7-4.

Public Notice and Press Releases

As required by Section 357.12 of the Texas Administrative Code, notice of the upcoming public hearings on the initially prepared Draft Regional Water Plan was provided by several means.

- Notice of the public hearings, written comment period, and location of copies of the Draft Plan for public review were posted in each county in the region. (See Figure 7-1.)
- Paid ads providing notice of the public hearings, written comment period, and location of copies of the Draft Plan for public review were placed in 14 newspapers in the region.
- In accordance with 31 TAC section 357.12(5)(A-E), direct notice by first-class mail was made to the following:
 - (a) 140 Mayors
 - (b) 15 County Judges
 - (c) 5 Special districts and river authorities in the region as identified by the Texas Natural Resources Conservation Commission (TNRCC)
 - (d) 1,347 Community water systems as identified by TNRCC
 - (e) 353 Water rights holders as identified by TNRCC

In addition, based on 31 TAC Sec. 357.5(h), direct mail notice of the public hearings was also given to 158 holders of water rights in designated special resource waters (Brazos River system).

The public hearings and elements of the Draft Regional Water Plan were chronicled in the June and September issues of the *Region H Update* newsletter mailed to approximately 800 individuals and organizations; press releases were issued to more than three dozen area newspapers, and television and radio stations. (Both the Houston Chronicle and the Huntsville Item assisted in the public information effort by carrying major front-page articles on water related issues in the weeks just before and during the public hearings.) The hearings also were posted on the TWDB website.

*Distribution of Documents for Review and Comment*

The six task reports that comprise the initially prepared Draft Regional Water Plan were placed in the designated public repositories listed in Table 7-4 on August 18, 2000. (The task report on public involvement was included at that time as an appendix to the Task 5 report.) These documents were also placed on the TWDB website. Subsequently, an Executive Summary was added to the documents available on the TWDB website.

Table 7-4: Public Repositories of the Region H Regional Water Plan**AUSTIN COUNTY**

County Clerk
 County Courthouse
 1 East Main
 Bellville, TX 77418

BRAZORIA COUNTY

County Clerk
 County Courthouse
 111 East Locust
 Angleton, TX 77511

CHAMBERS COUNTY

County Clerk
 County Courthouse
 Anahuac, TX 77514

FORT BEND COUNTY

County Clerk
 301 Jackson
 Richmond, TX 77469

GALVESTON COUNTY

County Clerk
 County Courthouse
 722 Moody
 Galveston, TX 77550

HARRIS COUNTY

County Clerk
 Harris County Administration Building
 1001 Preston Avenue
 Houston, TX 77002

LEON COUNTY

County Clerk
 Leon County Courthouse
 Centerville, TX 75833

LIBERTY COUNTY

County Clerk
 County Courthouse
 1923 Sam Houston
 Liberty, TX 77575

AUSTIN COUNTY

Gordon Library
 917 Circle Drive
 Sealy, TX 77474

BRAZORIA COUNTY

Angleton Public Library
 401 East Cedar
 Angleton, TX 77515

CHAMBERS COUNTY

Chambers County Library
 – Main Branch
 202 Cummings
 Anahuac, TX 77514

FORT BEND COUNTY

George Memorial Library
 1001 Golfview
 Richmond, TX 77469

GALVESTON COUNTY

Rosenberg Library
 2310 Sealy
 Galveston, TX 77550

HARRIS COUNTY

Houston Public Library
 1st Floor, Bibliographic Information Center
 500 McKinney
 Houston, TX 77002

LEON COUNTY

Leon County Library
 129 East Main
 Centerville, TX 75833

LIBERTY COUNTY

Sam Houston Regional Library
 and Research Center
 FM1011
 Liberty, TX 77575

Table 7-4: Public Repositories of the Region H Regional Water Plan (continued)**MADISON COUNTY**

County Clerk
101 West Main, Room 102
Madisonville, TX 77864

MONTGOMERY COUNTY

County Clerk
County Courthouse
301 N. Thompson
Conroe, TX 77301

POLK COUNTY

County Clerk
County Courthouse, 1st Floor
101 West Church
Livingston, TX 77351

SAN JACINTO COUNTY

County Clerk
County Courthouse
#1 Highway 150
Coldspring, TX 77331

TRINITY COUNTY

County Clerk
County Courthouse
1st and Main
Groveton, TX 75845

WALKER COUNTY

County Clerk
County Courthouse
1100 University Avenue
Huntsville, TX 77340

WALLER COUNTY

County Clerk
County Courthouse
836 Austin Street
Hempstead, TX 77445

MADISON COUNTY

Madison County Library
605 South May
Madisonville, TX 77864

MONTGOMERY COUNTY

Montgomery County Central Library
104 Interstate 45 North
Conroe, TX 77301

POLK COUNTY

Murphy Memorial Library
601 West Church
Livingston, TX 77351

SAN JACINTO COUNTY

Coldspring Library
220 South Bonham
Coldspring, TX 77331

TRINITY COUNTY

Blanche K. Werner Library
Highway 19
Trinity, TX 75862

WALKER COUNTY

Huntsville Public Library
1216 – 14th Street
Huntsville, TX 77340

WALLER COUNTY

Waller County Library -
Brookshire/Pattison
3815 Sixth Street
Brookshire, TX 77423

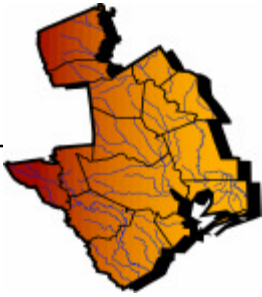


Figure 7-1 Public Hearing Notice

Notice of Public Hearing Region H Draft Regional Water Plan

A public hearing will be held at four locations in Region H to receive public comment on a Draft Regional Water Plan. The Region H Water Planning Group prepared the Draft Regional Water Plan as part of a 16-region statewide effort initiated by Senate Bill 1 in 1997, and administered by the Texas Water Development Board. Counties in Region H are: Austin, Brazoria, Chambers, Fort Bend, Galveston, Harris, Leon, Liberty, Madison, Montgomery, Polk (part), San Jacinto, Trinity (part), Walker, and Waller.

The Draft Regional Water Plan provides information on water needs and water supplies for communities, industry and agriculture and addresses environmental considerations for the 15-county Region H area. The Draft Plan identifies water management strategies to meet shortages. After comments are received and considered, the Region H RWPG will adopt the Regional Water Plan and submit it to the TWDB by January 5, 2001, to become part of the State Water Plan.

Hearing comments will be received at meetings held September 18 – 21, 2000. Comments may also be made in writing to Mr. Jim Adams, Chair, Region H Water Planning Group, P. O. Box 329, Conroe, Texas 77305. Written comments will be accepted at the offices of SJRA through September 26, 2000. A copy of the Draft Regional Water Plan will be available for review at the office of the County Clerk and in one public library in each county within Region H for 30 days prior to the hearing.

Monday, September 18, 7 p.m.
Nolan Ryan Center
Alvin Community College
Near Highway 35/Highway 6
Alvin, Texas

Wednesday, September 20, 3 p.m.
E. B. Cape Center
City of Houston Dept. of Public Works
4501 Leeland
Houston, Texas

Tuesday, September 19, 7 p.m.
Walker County Courthouse
1100 University Avenue
Huntsville, Texas

Thursday, September 21, 7 p.m.
White's Memorial Park
I-10 @ Hwy 562/61
Chambers County, Texas

The Region H Regional Water Planning Group meets on the first Wednesday of each month. For further information, contact Mr. Jim Adams, RWPG Chair, at SJRA, 936-588-1111, or Glenda Callaway at Ekistics Corporation, 713-520-9031. Information also is available at the TWDB website www.TWDB.state.tx.us.

7.6 Summary of Public Hearing and Written Comments, September 2000

Overview

The Region H WPG chose to hold a public hearing on its initially prepared Draft Regional Water Plan at four locations in the region. This allowed comments to be made for the record at sites and times that might be more convenient to the public than at one central hearing. The hearing sites were: Nolan Ryan Center at Alvin Community College, Walker County Courthouse, City of Houston E. B. Cape Center for Public Works Excellence, and White's Memorial Park in Chambers County. Three of the hearings were held at 7:00 p.m., and one (Houston) at 3:00 p.m.

Proceedings at each of the public hearing sites followed a similar format.

- Welcome and Introductions: Jim Adams, RHWPG Chair, welcomed attendees and made introductions at three of the meetings. Judge Charles Wagamon welcomed attendees and introduced elected officials at the Walker County Courthouse.
- A brief presentation by the consulting team: Jeff Taylor, Brown & Root, and Mark Lowry, Turner, Collie and Braden, alternated making the presentation, emphasizing the recommended management strategies. (Copies of presentation slides are included as Appendix D.)
- Formal comments or questions by attendees who registered to speak.
- Information on the written comment period and process for adopting the Plan: Glenda Callaway, Ekistics Corporation, emphasized that the RHWPG would be open to comments and questions throughout its process, but that comments to be included with the submission of the initially prepared Draft were needed by September 26.
- Informal dialogue: including discussion of responses that were known at the time.

Handouts for each meeting consisted of a copy of the Executive Summary, a copy of Appendix E to Task 5, and a copy of the presentation slides.

A certified court reporter prepared a formal record of proceedings at each hearing site in conjunction with a computer assisted real-time translation during the hearing. Summaries of formal comments are based on these proceedings. Attendance at the Public Hearing sites is shown in Table 7-5.

It was announced in the public notice and at each public hearing site that written comments on the initially prepared Draft Regional Water Plan would be accepted through September 26, 2000 for inclusion in the published draft plan. Sixteen written comments were received during that period. Three additional written comments were received after that date. Table 7-6 lists the individuals and organizations that provided written comments.

Table 7-5

ATTENDANCE AT PUBLIC HEARINGS, SEPTEMBER 2000

18 September 2000, Nolan Ryan Center, Alvin

Interested Public

Doug Balkum, Councilman, City of Alvin
 Corbin Ballast, City of Lake Jackson
 David Behm, Legacy Land Trust, Friendswood
 Don Braddock, Chocolate Bayou Water, Alvin
 Dick Carter, City of Alvin
 Jim Coate, Southwood Estates, Inc., Pearland
 Larry Drabek, Alvin
 Susan Drabek, Alvin
 David Finklea, Greater Houston Partnership, Houston
 Bob Garrett, Waters Davis Soil Cons. Board
 Jay Gilbert, Santa Fe
 Jimmie Gilbert, City of Pasadena
 Betty Hambright, Brookside Village
 Lydia Heard, Houston
 Ruth Hertel, City of Angleton
 Paul Hofmann, City of Alvin
 Stephanie Hrabar, Houston
 Mike Kelly, TBA Water, Houston
 Albert Kuchar, Rice Farming, Danbury
 Rodney A. Kuchar, Farming, Danbury
 Don Lane, BP, Alvin
 Troy Lewis, City of Alvin
 David Minze, Farming/Irrigation, Katy
 Gordon Myers, Gulf Coast Water Authority, Texas City
 Mike O'Day, O'Day Drilling Co., Pearland
 Mike Palmer, International Paper Co., Alvin
 Paul W. Rhodes, private utility co., Alvin
 Gerald Roberts, City of Angleton

Interested Public (continued)

Wayne Sabo, City of Manvel
 Paul Schumann, City of Sugar Land
 John Speer, Tigner Irrigation, Angleton
 David Spoer, Angleton
 Joe M. Sweeny, Alvin
 Michael Wright, The Facts, Clute
 Frank Tigner, Tom Tigner Ranch, Angleton
 Tom Tigner, Tigner Irrigation, Angleton
 J. R. Tyson, Councilman, City of Alvin
 Pris Weeks, EIH/EHCL, Houston
 Fred Werner, US Fish & Wildlife Service, Houston
 Nathan Zainfeld, Brookside Village
 Kenneth Zenahr, Danbury Fish Farms, Danbury

Region H Water Planning Group Members

Jim Adams, SJRA, Conroe
 Jack Harris, Brazoria County Commissioner
 Carolyn Johnson, Dow
 Tom Ray, BRA
 Ernest Rebuck, TWDB

Consulting Team

Glenda Callaway, Ekistics Corporation
 Mark Lowry, Turner Collie & Braden
 John Seifert, LBG-Guyton Associates
 Andy Sterbenz, Brown & Root
 Jeff Taylor, Brown & Root

Table 7-5 (continued)

19 September 2000, Walker County Courthouse, Huntsville

Interested Public

Joe Adams, San Jacinto County Judge,
Coldspring
W. B. Avery, Custom Marine & Machine,
Onalaska
Jim Beel, Conroe Bay Assn., Willis
Herschel Brannen, Trinity
Pat Brown, The Woodlands GREEN
Dave Buzan, Texas Parks & Wildlife Dept.,
Austin
Mark Chalker, landowner, Bedias
Mary Chalker, landowner, Bedias
Keith L. Cogler, TRA-retired, Huntsville
Bill Daugeette, City of Huntsville
Debra Daugeette, City of Huntsville
John N. Demel, Utility Dept., City of Panorama
Village
Lewis DeVore, Cove Marina, Riverside
Scott Ehni, landowner, Trinity
Bob Echert, Huntsville
Pat Echert, Huntsville
Dale Evans, Councilmember, City of Panorama
Village
Jeff Farris, Madisonville
B. J. Gaines, Jr., Walker County, Huntsville
J. J. Greeson, Custom Marine & Machine,
Onalaska
Wesley Grossie, Huntsville
Harry C. Hallows, farmer, Midway
Byran Hayes, Huntsville Item
R. D. Heppes, landowner, Huntsville
Mike Hornsby, Pyramid Cattle Co., Normangee
John Howard, rancher, Iola
David Kleimann, Montgomery County, Willis
Dan Lynam, Conroe Bay Assn., Willis
Jeff Markham, Markham Realty, Huntsville
Eddie Martinez, Westwood Shores MUD,
Trinity
Charles E. Morgan, P.E., Texas Dept. of
Criminal Justice, Buffalo
Walter Nelson, Huntsville
Phil Palmer, Waterwood MUD, Huntsville
Phil Patchett, City of Trinity
John Pulvino, landowner, Tinity
J. A. Remeny, Huntsville

Interested Public (continued)

Billy Richardson, TRA, Point Blank
Marie G. Ristroph, Spring Creek Watershed
Initiative, Pinehurst
Frank Robinson, Huntsville
George Russell, Sierra/TCONR, Huntsville
Sue Russell, Huntsville
Jerry Sirkin, Spring
Jim R. Sims, Trinity River Authority, Huntsville
Robert Stevens, Trinity River Authority,
Huntsville
C. Tyler, landowner, Trinity
Charles H. Wagamon, Walker County Judge,
Huntsville
John Webb, Dodge Oakhurst Water, Dodge
Mike Wegner, City of Huntsville
Frederick M. Weiwzieke, Riverside
Tom Weyer, City of Huntsville
Steve Widner, City of Huntsville
Boyd Wilder, City of Huntsville
Doris Williams, landowner, Bedias
Marvin Williams, landowner, Bedias
Gerald Wransity, The Woodlands

Region H Water Planning Group Members

Jim Adams, SJRA, Conroe
Jeff Henson, TPWD, Bryan (alternate)
Robert Bruner, Huntsville
Ernest Rebeck, TWDB, Austin
Steve Tyler, Trinity
Danny Vance, TRA, Arlington

Consulting Team

Glenda Callaway, Ekistics Corporation
Mark Lowry, Turner Collie & Braden
John Seifert, LBG-Guyton Associates
Jeff Taylor, Brown & Root

Table 7-5 (continued)

20 September 2000, E. B. Cape Center, Houston

Interested Public

Wayne Ahrens, Dannenbaum Engr.,
Houston
Dominic G. BeNoba, City of Houston
Tony Brown, Baytown Area Water Auth.,
Baytown
Dave Buzan, Texas Parks & Wildlife Dept.,
Austin
Marilyn Christian, Harris County Health
Dept., Houston
Kaye Corprew, Coats Rose, Houston
Jim Dannenbaum, Dannenbaum Engr.,
Houston
Mike Ellington, Town of Woodloch, Conroe
Dan Feldstein, Houston Chronicle
Charles Fredieu, City of Houston
Art Garden, Harris Co. MUD 81, Houston
Lisa Gonzalez, UHCL-EIH, Houston
Philip Goodwin, Skinner Nurseries, Houston
Stephanie Hrabar, Houston, Texas
Roger Hulbert, City of Houston
Bob Johnson, CH2M Hill, Houston
Jeff Jordan, Houston
Jim Kachtick, Greater Houston Partnership,
Houston
Carolyn Keenan, Houston
Todd Larson, Montgomery Watson,
Houston
Diane Lincoln, Mayor, Town of Woodloch
Brandt Mannchen, Houston Sierra Club
Les Mauldin, Creekside Nursery, Waller
Edward McCall, CDM, Houston
Dave Moldal, National Wildlife Federation,
Austin
Clint Moore, North Harris Co. Regional
Water Auth., Spring
Itc Nguyen, Houston
Tom Ramsey, Klotz Assoc., Houston
Robert Reynolds, Houston

Interested Public (continued)

Linda Shead, Galveston Bay Foundation,
Webster
Larry Smalley, Klotz Assoc., Houston
Joe Taylor, Quail Valley U.D., Missouri
City
J. W. Weatherford, Weatherford Farms,
Stafford
Blu Whipple, The Woodlands
Ray Zobel, Malcomson Road U.D., Tomball

**Region H Water Planning Group
Members**

Jim Adams, SJRA, Conroe
John Bartos, Galveston Bay Foundation,
Houston
Gary Oradat, City of Houston
Ernest Rebeck, TWDB, Austin
Gary Stobb, Harris Co., Houston

Consulting Team

Glenda Callaway, Ekistics Corporation
Mark Lowry, Turner Collie & Braden
David Parkhill, Brown & Root
Mike Reedy, Turner Collie & Braden
John Seifert, LBG-Guyton Associates
Andy Sterbenz, Brown & Root
Jeff Taylor, Brown & Root

Table 7-5 (continued)**21 September 2000, White's Memorial Park, Chambers County****Interested Public**

John B. Cheesman, Jr., Anahuac
Billy Edwards, Trinity Bay Soil & Water Cons. Dist., Stowell
Bobby Edwards, Stowell
Ford J. Frost, Houston
Sue Hawthorne, The Progress, Anahuac
John Jenkins, TRA, Hankamer
Charles Jones, Jones & Allen Farms, Winnie
R. Kit Jones, Trinity Bay Cons. District, Anahuac
David Paulissen, Trinity Bay Cons. Dist., Anahuac
David Plaisance, Clear Lake City Water Auth., Houston
Linda Shead, Galveston Bay Foundation, Webster
J. E. Sherman, Devers Canal, Devers
Reggie Sutton, aide to Sen. David Bernsen, Beaumont
Pudge Willcox, CLCND, Anahuac

Region H Water Planning Group Members

Jim Adams, SJRA, Conroe
David Jenkins, Stowell
Ernest Rebuck, TWDB, Austin
Danny Vance, TRA, Arlington

Consulting Team

Glenda Callaway, Ekistics Corporation
Mark Lowry, Turner Collie & Braden
John Seifert, LBG-Guyton Associates
Andy Sterbenz, Brown & Root
Jeff Taylor, Brown & Root
Brad Winkler, Brown & Root

Table 7-6

**Written Comments on Initially Prepared Plan
Received August 18 – September 26, 2000**

Hon. Joe Adams, County Judge, San Jacinto County
Pat Brown, The Woodlands
Hon. Susan Combs, Commissioner, Texas Department of
Agriculture, Austin
Eddy D. Edmondson, President, Texas Nursery & Landscape
Association, Austin
Myron J. Hess, Counsel, National Wildlife Federation, Gulf
States Natural Resource Center, Austin
Billy Howe, Associate Legislative Director, Texas Farm
Bureau
Hon. Troy Lewis, Mayor, and Hon. J. R. Tyson,
Councilmember, City of Alvin, on behalf of Mid-
Brazoria County Regional Water Planning Group
Brandt Mannchen, Sierra Club, Houston Regional Group
Les Mauldin, Creekside Nursery, Hempstead
Carlos H. Mendoza, Project Leader, Clear Lake Field Office,
U.S. Department of the Interior, Fish and Wildlife
Service
Craig Nisbett, P.E., Public Works Director, City of Lake
Jackson
Marianne Pape, Houston
Wayne J. Sabo, City Administrator, City of Manvel
Andrew Sansom, Executive Director, Texas Parks and
Wildlife Department, Austin
Linda Shead, P.E., Executive Director, Galveston Bay
Foundation, Webster
William C. Wade, Clute
Mary Ellen Whitworth, P.E., Executive Director, Bayou
Preservation Association, Houston
Marvin and Doris Williams, Bedias
Norman Young, Coldspring

Comments

September 18, 2000, 7:00 p.m., Nolan Ryan Center, Alvin. A total of 51 people attended the public hearing; three made formal comments. After the comment period, informal discussion addressed the need for funding to implement the Plan, clarification of the rule of capture for groundwater and water rights for surface water, and subsidence.

(1) Stephanie Hrabar, Ph.D., geologist, speaking for herself, said that she had spent nine hours reviewing the reports making up the draft Regional Water Plan.

- a. As a member of the lay public, she found the material difficult to comprehend.
- b. She was concerned that there was a lack of balance between the urban and rural and suburban interests.
- c. She objected to the lack of attention to water quality in the reports and is concerned about contamination of groundwater supplies.
- d. She requested a listing and description with contact persons for all agencies with jurisdiction/responsibilities for water in Region H. She also requested identification of the federal, state and local natural resource agencies with technical expertise that would be reviewing the documents.
- e. She is concerned that Harris County has no comprehensive land use plan and cannot understand how a 50-year water plan can be prepared for a county with no plan.

(2) J. R. Tyson, Councilmember, City of Alvin, speaking for the Mid-Brazoria County Water Planning Group, thanked the RHWPG for working with the Mid-Brazoria group and recognizing its planning effort. He said that the Alvin City Manager would comment further.

(3) Paul Hofmann, City Manager, City of Alvin, commented that the Mid-Brazoria group had been working for several months to do additional analysis of water supply and facility planning for that sub-regional area. He noted that a grant application to the Texas Water Development Board for facility planning had recently been approved.

- a. He asked that the RHWPG acknowledge in its Plan the fact that the Mid-Brazoria County Water Planning Group has been created.
- b. He noted that members of the Mid-Brazoria group are very interested in a reconsideration of population projections after the 2000 Census.

September 19, 2000, 7:00 p.m., Walker County Courthouse, Huntsville. A total of 64 people attended the public hearing in Huntsville; 15 gave formal comments or questions. After the comment period, informal discussion topics included water conservation measures and potential aquifer contamination from oil and gas wells.

(1) Marie Gibbens Ristroph, resident of Pinehurst spoke for herself and is affiliated with the Spring Creek Watershed Initiative. The Initiative is interested in preserving the waterway, preventing flooding and encouraging sustainable development.

- a. The Initiative is encouraging the use of cisterns, gray water usage, and the use of native plants to reduce irrigation needs.
- b. The Initiative wants to be involved in long range water planning.

(2) Phil Palmer, real estate and manager of Waterwood MUD, a resort subdivision on the north end of Lake Livingston, commented that the Lake is an important economic factor in the area.

a. He noted that the level of the Lake affects recreational activities and requested that the RHWPG strongly consider maintaining the level of Lake Livingston.

b. He commented that drops in the level of the Lake will affect property values and tax base resulting in tax increases.

c. He suggested that the 10 million people coming to the region will need a place to get away from it all and Lake Livingston should be given high regard as a recreational asset.

(3) George Russell, Sierra Club and Texas Committee on Natural Resources, Huntsville, suggested that transferring water from the Trinity River to the San Jacinto Basin was like taking money from savers and giving it to wasters.

a. He commented that there is no need for the Bedias Reservoir and no need to take water out of Lake Livingston to give to another basin.

b. He said that no interbasin transfers are needed; people should move to where there is water.

c. He said that people should not waste water, and pointed to urban landscaping practice as a big waster of water.

(4) Pat Brown, The Woodlands GREEN, spoke as a concerned citizen.

a. Is there a way to use groundwater for drinking water and lake water for other uses?

b. Do groundwater projections to 2050 take into account the increase in development and cement coverage over the recharge area of the aquifers?

c. She is concerned about borrowing water from other areas since as drought periods increase in the future, areas that have water now may need it for their own use.

d. She suggested that incentives might be given to users of large amounts of water to develop more water-efficient processes.

(5) John Pulvino, Lake Livingston homeowner, based his comments on the Executive Summary.

a. He asked how much analysis was given to tourism and recreation, since it was noted that this was an important part of the economy.

b. He said that it appeared that more analysis and concern was given to the southern part of the region than to the northern part.

c. He asked what was meant in the allocation of uncommitted supplies by the phrase "until the existing uncommitted MWP water supplies are exhausted."

(6) Scott Ehni, Lake Livingston landowner, Trinity, said some of his questions already had been answered.

a. He objected to the strategy of contracting for 200,000 acre-feet of water from the Lake Livingston to cover future water needs of a population that does not yet exist when property owners are currently using it and will be affected when water levels in the Lake decline; the cost should be calculated before selling the water.

b. He commented that people should be discouraged from moving someplace where there isn't enough water.

c. He is concerned about projected inflows and the impact Bédias Reservoir or any upstream reservoir will have on inflows to Lake Livingston and on lake level.

(7) Byron Hays, Huntsville Item, asked if any study had been done that exactly describes what the lake level at Lake Livingston will be given certain specific acre-feet that are retained in the lake-- where would the shoreline lie?

(8) Charles Morgan, Texas Department of Criminal Justice, Buffalo, is responsible for water for prisons in the area.

a. He asked if concentrations of prison populations (such as the five prisons with 13,000 prisoners in the Palestine area) were taken into account in calculating water demands.

b. He is concerned about determining if groundwater wells will continue to be dependable.

c. He asked if more water could be taken from Lake Houston and diverted west rather than taking more water from Lake Livingston.

d. He suggested that xeriscaping could conserve water and should be encouraged in the Plan.

e. He said that reclaimed wastewater could be used for irrigation and suggested that some reconsideration of Texas Natural Resource Conservation Commission rules might be needed.

(9) Mark T. Chalker is a landowner from Bédias, in northern Walker County.

a. He is concerned about the location of Bédias Creek Reservoir.

b. He would like to know the area to be covered with water.

c. Given the reservoir is planned for 2030, he wants to know when landowners would have to leave.

(10) Dave Buzan, Texas Parks and Wildlife Department, Austin, expressed appreciation to the RHWPG for their deliberations and for including freshwater inflow needs and ecologically unique stream segments in the Plan.

(11) Lewis DeVore, Cove Marina, Riverside, noted that his business depends on the pool level of Lake Livingston.

a. He is concerned by the lack of discussion about conservation in the Plan.

b. He asked if people have a right to waste water if they are willing to pay for it.

c. He asked if there could be allotments of water, with use over that amount carrying some sort of penalty.

(12) David Kleimann, Willis, spoke for himself and commented on several issues related to the Subsidence Districts.

a. He thinks conservation must be looked at seriously.

b. He is concerned that Groundwater Conservation Districts may become management districts.

c. He concerned about the loss of water from system leaks in Houston.

(13) Dan Lynam, Conroe Bay Civic Association, Willis.

- a. He wants to know how the lake levels for Lake Conroe will be affected.
- b. He asked if current conditions are going to be normal conditions.

(14) Herschel Brannen, Trinity County.

a. Referring to Task 5, Appendix E, he noted that projected growth for livestock and irrigation for Walker and surrounding counties is flat and asked why agriculture is not growing.

(15) John Webb, Dodge Oakhurst Water Supply.

- a. He wants to know if the Plan will affect groundwater in his area.

September 20, 2000, 3:00 p.m., E. B. Cape Center, Houston. A total of 47 people attended the public hearing in Houston; seven gave formal comments or questions. After the comment period, informal discussion topics included funding for implementation; groundwater rule of capture; Subsidence District issues; City of Houston rate structure; analysis of project environmental impacts; development of the State Water Plan from the regional plans; future of RWPGs; and why water shortages exist when there is a regional water surplus.

(1) Stephanie Hrabar, geologist, speaking for herself, thanked the people who took the time to serve on the RHWPG, especially the volunteers, and noted that interdisciplinary communication is difficult.

- a. She thinks that the documents are not clear.
- b. She thinks that both water and air quality are issues relevant to water supply that should be addressed.
- c. She commented that the rule of capture encourages mining of groundwater and ignores effects such as subsidence.
- d. She suggests including maps of the location of (1) active and abandoned surface mining activities for coal, uranium, salt and sulfur; (2) abandoned and productive oil and gas fields that have injections wells, disposal wells; (3) chemical disposal wells; (4) solid waste disposal sites.
- e. She commented that the Executive Summary introduction (p. 1) should mention that water supply is critical to public health.
- f. She is concerned that unique stream "segments" may not be the same as segments identified by TNRCC.
- g. She is concerned that TNRCC has responsibilities for water and was not represented on the RHWPG.

(2) Brandt Mannchen, speaking for the Houston Sierra Club, noted that he will also submit written comments.

- a. He suggests thinking outside the box and putting people where the water is, as well as considering the carrying capacity of a particular area.
- b. He is concerned that the recommended municipal conservation is very low.
- c. He is concerned that some natural areas were not adequately mentioned (Columbia Bottomlands and the Sam Houston National Forest) and suggested that additional streams in the

Sam Houston National Forest should be considered for designation segments with unique ecological value.

- d. He objected to the recommended strategy of the Bedia Reservoir and transfer to SJRA because of its impact on the Sam Houston National Forest.
- e. He objected to a proposal (not in the Draft Plan) to transfer water from Lake Livingston to Rock Creek in Grimes County that would pass through the Sam Houston National Forest.
- f. He objected to basing the study on unrealistic assumptions that cause a crisis mode response.
- g. He objected to the difficulty in obtaining a hard copy of the full document and to the 30-day comment period, suggested a 60-day comment period instead or at least 45 days.

(3) Dave Moldal, National Wildlife Federation, Austin, said that he would also submit written comments. He noted that NWF has 45,000 members in Texas and is committed to protecting the state's abundant fish and wildlife resources and are concerned about how water development affects those resources.

- a. He said that an effective water plan must strike a balance between human, commercial, and environmental water needs.
- b. He urged the RHWPG to give full and serious consideration to the environmental impacts of both existing and proposed water development projects.
- c. He applauded the RHWPG for recommending aggressive conservation for some municipalities, but suggested that it should be applied more broadly.
- d. He objected to the lack of analysis of what actions are needed to ensure sufficient freshwater inflows to Galveston Bay or in and near the tidal portion of the Brazos River.
- e. He said the Plan does not address impacts to water quality and the aquatic ecosystem from interbasin transfers and reservoirs and on private and commercial recreational activities, tourism and commercial fishery activities from the loss of freshwater inflows.
- f. He said that the Plan does not address drought management measures to limit demand during water short periods.
- g. He said that agricultural conservation measures should be extended beyond the three counties with water shortages.
- h. He objected to the lack of assessment of environmental impacts associated with reservoir construction for the three recommended reservoirs.
- i. He said that the Little River Reservoir conflicts with a potentially ecologically significant stream segment.
- j. He commented that the existence of a surplus of water for the region as a whole called into question undertaking projects that are very expensive and environmentally destructive before a comprehensive review of environmental water needs is undertaken.

(4) Dave Buzan, Texas Parks and Wildlife Department, Austin, thanked the RHWPG for its efforts and for including consideration of ecologically unique stream segments and freshwater inflows to bays in their water plan. He encouraged them to continue to consider those ecologically important systems and freshwater inflows to bays in their further deliberations.

(5) Les Mauldin represents Creekside Nursery, a wholesale nursery in Waller County, and part of an important economic sector of the State.

a. He does not find that the nursery/floral part of agriculture is accounted for in the Executive Summary.

b. He said that the USDA and the Texas Agriculture Code considers nursery/floral as part of agriculture rather than industrial, and the Water Plan should reflect that.

(6) Linda Shead, Galveston Bay Foundation, Webster, expressed appreciation for the inclusion of findings of the Galveston Bay Freshwater Inflows Group in the Plan and for the recommendation to continue funding that effort. She noted that freshwater and wetlands are crucial ingredients in the productivity of Galveston Bay, the State's most productive estuary.

a. She asked that the RHWPG continue to consider freshwater inflows to the bay, and also to consider the importance of instream flows and the value they add to habitat and recreation.

b. She applauded the RHWPG for including ecologically unique stream segments and suggested that they continue to consider additional designations as new data are collected.

c. She suggested that additional aggressive conservation could be pursued.

d. She noted that good and effective ways to quantify aesthetic and recreational and natural habitat values of the region's resources are needed.

e. She thanked the RHWPG for finding a creative way to include freshwater inflows in the report even though the TWDB did not include environmental water in their table formats.

f. She commented on the importance of finding a balance of interests, applauded the RHWPG for its efforts, and said that a balance or solution can't be found unless it is looked for.

(7) Jack Weatherford, Weatherford Farms, Stafford, asked for an explanation of how the Subsidence District fits into the picture of groundwater rule of capture.

September 21, 2000, 7:00 p.m., White's Memorial Park, Chambers County. A total of 24 people attended the public hearing at White's Park; three gave formal comments or questions. After the comment period, informal discussion topics included irrigation supply in Chambers County; projected rice crop acreage; changes and amendments to the Water Plan; junior water rights and 50-year in-basin needs provisions with respect to interbasin transfers; the City of Houston to Gulf Coast Water Authority contract; agricultural water conservation; and Allen's Creek Reservoir.

(1) Linda Shead, Galveston Bay Foundation, Webster.

a. The Foundation is pleased that the RHWPG took the initiative to address freshwater inflows to Galveston Bay, accepted the recommendations of the Galveston Bay Freshwater Inflows Group, and recommended funding to continue that effort.

b. She applauded the designation of ecologically unique stream segments and suggested that additional streams be considered for designation when data are available to assess their value, noting that no streams in Chambers County were designated.

(2) Bobby Edwards, Stowell, spoke on behalf of himself.

a. He is concerned because the Plans refers to "getting appropriate administrative procedures from the legislature.... " and he has had bad experiences with TNRCC using administrative procedures.

b. He has reviewed the Plan and has found no fatal flaw.

(3) David Paulissen, general manager of the Trinity Bay Conservation District, Anahuac, said that over the past few months TBCD has had demand requirements and projections independently prepared. He said that he had found no conflicts, but wanted to make sure that the RHWPG had a copy of the TBCD report. He thanked the RHWPG for their work.

Written Comments Received August 18 - September 26, 2000.

Sixteen written comments were received by 5:00 p.m. September 26, 2000. Three additional letters were received during the Texas Water Development Board review of the initially prepared plan. Copies of those submissions follow.

Responses to Public Comments Received

All commentors who provided address information will receive a letter of response thanking them for taking the time to review the Initially Prepared Regional Water Plan and provide comments and encouraging their continued participation in the ongoing planning process. Responses to their specific concerns are set out below. Responses are organized by hearing site followed by responses to written comments received.

Responses to Public Comments from September 18, 2000, Alvin

(1) Stephanie Hrabar, PhD.

- a. Ms. Hrabar commented that the material was difficult to comprehend. Every effort was made to keep "technical jargon" out of the reports. Two additional reviews were conducted before the final report was approved. A table of abbreviations was prepared and added to the front of each report following the table of contents.
- b. Ms. Hrabar was concerned about a lack of balance between urban, rural and suburban interests. The Region H Water Planning Group contains representatives from urban, rural and suburban areas, as well as representatives from diverse interest groups. The planning process itself follows rules established by the Texas Water Development Board, which are basically to identify projected demands, identify available supply, identify shortages and identify strategies to meet or reduce unmet demands. The projected growth in this Region's urban areas exceeded the available supply, so the plan does focus on solving the water supply shortages in those urban areas.
- c. Ms. Hrabar asked about water quality being omitted from the study. A section on water quality has been added to the Task 1 Report.
- d. Ms. Hrabar asked which agencies have jurisdiction in the planning process. The Regional Water Planning Process is established by the State of Texas, and administered by the Texas Water Development Board. The plans are reviewed by the Texas Natural Resource Conservation Committee and the Texas Parks and Wildlife Department. The Texas Department of Agriculture also reviews the plans. A listing of points of contact for each of these agencies was added to the Task 1 Report and the Executive Summary.
- e. Ms. Hrabar expressed concern about planning for Harris County, which does not have a land use plan. Regional Water Planning is an ongoing process, and updated plans will be prepared every five years. This process allows the Region to make revisions as growth patterns and projections change over time.

(2) J. R. Tyson, Councilman, City of Alvin, speaking for the Mid-Brazoria County Water Planning Group.

- a. Mr. Tyson thanked the group for working with the Mid-Brazoria County Water Planning Group. No response is required.

(3) Paul Hoffman, City Manager, City of Alvin, speaking for the Mid-Brazoria County Water Planning Group.

- a. Mr. Hoffman asked that Mid-Brazoria be acknowledged in the plan. The Task 1 Report was revised to specifically identify the Mid-Brazoria County Water Planning Group.

- b. Mr. Hoffman asked that population projections be revised based on the 2000 census. The results of the 2000 census will be incorporated in the next update of the plan.

Responses to Public Comments from September 19, 2000, Huntsville

(1) Marie Gibbens Ristroph, resident of Pinehurst and affiliated with the Spring Creek Watershed Initiative.

- a. Ms. Ristroph said that the Spring Creek Watershed Initiative is advocating conservation and reuse, and they would like to be involved in long-term water planning. The RHWPG appreciates the efforts of conservation groups, and encourages them to attend the RHWPG meetings and become involved in the process.

(2) Phil Palmer, manager of Waterwood MUD.

- a. Mr. Palmer pointed out the recreational value of Lake Livingston, and asked that lake levels be maintained. The RHWPG acknowledges the recreational value of Lake Livingston which was constructed as a water supply reservoir. During times of high demand the water stored in Lake Livingston is meant to be conveyed for use.
- b. Mr. Palmer commented that reduced lake levels affect property values and tax base. The RHWPG acknowledges the importance of reservoirs to local economies. The high water demands and low water supplies reflected in the plan are based on drought-of-record conditions. In an average or wet year, lake levels (and revenues generated) should not be affected.

(3) George Russell, Sierra Club and Texas Committee on Natural Resources.

- a. Mr. Russell stated that there is no need to transfer water from Lake Livingston to another basin. Lake Livingston is a water supply reservoir, built by the City of Houston for the express purpose of transferring water supply to Houston.
- b. Mr. Russell stated that population should move to areas with water rather than move water to the population. The location of population growth is beyond the control or mandate of the RHWPG or the State.
- c. Mr. Russell strongly advocated water conservation. The Regional Plan includes water conservation for all user groups and advanced conservation for those with projected shortages. The report text was revised to present this more clearly.

(4) Pat Brown, the Woodlands GREEN.

- a. Ms. Brown asked about conjunctive use of ground and surface water. Within our region, the decision to use ground or surface water is usually an economic one (whichever is less expensive to provide). The exception to this is in counties affected by subsidence, where a scheduled conversion to surface water is taking place.
- b. Ms. Brown asked if we are paving over our groundwater recharge areas. The recharge areas for the aquifers in this region are in the northern, generally rural counties, where extensive development is not projected. Region H is more fortunate than some others in that respect.
- c. Ms. Brown expressed concern about how transfers affect the losing basin. The regional plan utilizes local water sources before recommending transfers from other areas. Before a

transfer from one basin to another will be permitted by the State, a detailed analysis of the basin of origin must be conducted to ensure that its long term water needs are met.

- d. Ms. Brown suggested implementing incentives to encourage conservation by large water users. Industries are trending toward more water-efficient processes as they strive to reduce process costs. The RHWPG has recommended that the legislature address this issue and provide some guidance for local governments implementing these programs.

(5) John Pulvino, Lake Livingston homeowner.

- a. Mr. Pulvino asked about the analysis conducted on tourism and recreation. Tourism and recreation information used in the report came from the Texas State Comptroller's Office and the local council of governments. One of the items discussed by the RHWPG was the lack of previous studies on the relationship of recreation/tourism and available water resources, such as Lake Livingston. Conducting such a study was beyond the scope and budget of this planning effort.
- b. Mr. Pulvino stated that it appeared more analysis and concern was given to the southern portion of the region. The Regional Water Plan focuses on the areas with projected water shortages, which are predominantly in the southern and western counties. The northern and eastern counties receive equal attention in the Task 1, 2 and 3 Reports, where population, supply and demands are addressed. Beginning with the Task 4 Report, only those user groups with projected shortages are mentioned.
- c. Mr. Pulvino asked what is meant by the phrase "until the existing uncommitted MWP water supplies are exhausted." The allocation of uncommitted MWP supplies was reworded to read "until existing supplies are fully allocated." The available supply is defined as the firm (drought) yield of a reservoir

(6) Scott Ehni, Lake Livingston landowner.

- a. Mr. Ehni objected to the sale of 200,000 ac-ft/yr of water from Lake Livingston to Houston, when Houston does not have a projected shortage. The City of Houston is looking beyond the 50-year planning horizon in wanting to secure supplies against future needs. Houston has more than enough supply to meet the demands within the city limits. As a regional water provider, the City must consider its growing customer base. It is much less expensive to enter a long-term contract agreement than it is to develop an additional water supply source. The price of the contract is listed as unknown because the two parties are still in negotiations.
- b. Mr. Ehni stated that growth should be discouraged in areas without sufficient water. The siting of population growth is beyond the control or mandate of the RHWPG or the State.
- c. Mr. Ehni asked about the affects of Bedias Reservoir on Lake Livingston. New upstream reservoirs will have some impact on Lake Livingston, but these impacts have not been studied in depth. Impact analysis will be included in the initial planning studies for any proposed reservoir.

(7) Byron Hays, The Huntsville Item.

- a. Mr. Hays asked if a study had been done relating Lake Livingston storage volumes to lake levels. Tables were not developed as a part of this planning effort. Lake levels fluctuate, and historic data is available from the USGS showing recorded lake levels. The magnitude of

these fluctuations is of less concern than their frequency and duration. Even during the drought of record in the 1950's, there were periods where the lakes in Texas were full.

- (8) Charles Morgan, Texas Department of Criminal Justice, Buffalo.
- a. Mr. Morgan asked if prison populations were included in the plan. It was confirmed with the TWDB that institutional populations (such as prisons or colleges) are included in the municipal county-other populations.
 - b. Mr. Morgan expressed concern about groundwater availability for five TDCJ units in the Palestine area. That area is served by the Wilcox aquifer, which will not be affected by the projected use in this region.
 - c. Mr. Morgan asked about transferring water west from Lakes Houston or Conroe instead of from Lake Livingston. The currently unused supplies in Lakes Houston and Conroe are projected to be fully utilized during the 50-year planning period, so they are not available for transfer to the western portions of the region. Lake Livingston is projected to have available supply, so transfer options were considered for that source.
 - d. Mr. Morgan advocated conservation and xeriscaping. The plan was reworded to better explain the expected water conservation included in the demand projections, and the advanced water conservation recommended for user groups with projected shortages.
 - e. Mr. Morgan advocated increased use of reclaimed wastewater. Wastewater reclamation is a recommended strategy for manufacturing in Harris County. It is a potential strategy for other users, but there is a concern about the reduction of return flows to streams and reservoirs. The return flow concerns will need to be addressed in future studies.
- (9) Mark T. Chalker, landowner in Bédias.
- a. Mr. Chalker asked about the size and location of Bédias Reservoir. The proposed reservoir would sit on Bédias Creek south of Madisonville, and would cover approximately 27,400 acres. Additional information on this management strategy can be found in the Task 5 and Task 6 Reports.
 - b. Mr. Chalker asked when landowners would be affected by reservoir construction. The reservoir is recommended based on earlier studies, and additional, more detailed studies would be required before the water rights and construction permits could be issued. It will likely be fifteen to twenty years before the land acquisition begins for this project.
- (10) Dave Buzan, Texas Parks and Wildlife Department, Austin.
- a. Mr. Buzan thanked the region for recommending unique stream segments. No response is required.
- (11) Lewis DeVore, Cove Marina, Riverside.
- a. Mr. DeVore was concerned about the lack of conservation mentioned in the plan. The plan was reworded to better explain the expected water conservation included in the demand projections, and the advanced water conservation recommended for user groups with projected shortages.
 - b. Mr. DeVore recommended a system of water allotments and penalties for over-use. These actions may be included in a water providers' water conservation and drought contingency plans. The State has required all public water suppliers to prepare drought contingency plans

and submit them to the TNRCC by October 2000. These plans will be addressed in the Regional Water Plan during the next planning cycle.

(12) David Kleimann, Willis.

- a. Mr. Kleimann advocated conservation. The plan was reworded to better explain the expected water conservation included in the demand projections, and the advanced water conservation recommended for user groups with projected shortages.
- b. Mr. Kleimann expressed concern that Groundwater Districts may become management districts. Groundwater Conservation Districts are formed to protect the resource. In Harris, Galveston and Fort Bend Counties where subsidence is an issue, the districts are taking actions to reduce the use of groundwater. The northern counties in the region have abundant supplies of groundwater and are looking at forming districts to prevent unregulated export of groundwater to other areas. In either case, these districts are controlled locally and can only regulate activities within their jurisdiction.
- c. Mr. Kleimann expressed concern about the City of Houston's water leaks that were in the news. Nationally, most public water utilities lose ten to fifteen percent of their total flows to unaccounted losses, which include leaks, fire flows, hydrant flushing, and illegal connections. Houston made the news for two reasons. First, they had an above-average number of leaks at one time. Second, they occurred during a period of peak demand, so the losses made a greater impact on the system. Most of Region H is covered with Beaumont clay, which has a high shrink-swell potential. During a prolonged dry period, the shrinking soils place stress on buried pipes, creating more leaks and breaks than in an average year.

(13) Dan Lynam, Conroe Bay Civic Association, Willis.

- a. Mr. Lynam asked how the plan would affect Lake Conroe levels, and if current conditions will become the norm. Lake levels fluctuate, and historic data is available from the USGS showing recorded lake levels. The magnitude of these fluctuations is of less concern than their frequency and duration. The effects of increased demands on these fluctuations were not modeled during this planning effort.

(14) Herschel Brannen, Trinity County.

- a. Mr. Brannen asked why livestock and agricultural use are not projected to increase during the planning period. These projections came from Texas A&M and the TWDB, and are based on historic usage rates. However, there is sufficient groundwater in Trinity County to meet increased livestock demands should that occur.

(15) John Webb, Dodge Oakhurst Water Supply.

- a. Mr. Webb asked if the plan would affect groundwater in Walker County. Walker County is not projected to have any shortages during the planning period.

Responses to Public Comments from September 20, 2000, Houston

(1) Stephanie Hrabar, Geologist.

- a. Ms. Hrabar commented that the documents are not clear. Every effort was made to keep "technical jargon" out of the reports. Two additional reviews were conducted before the final

report was approved. A table of abbreviations was prepared and added to the front of each report following the table of contents.

- b. Ms. Hrabar said that water quality and air quality need to be addressed. A section on water quality has been added to the Task 1 Report. Air quality has become an important issue related to growth and, through water quality effects, may be important to water supply, but it is beyond the scope addressed by the current water planning effort.
- c. Ms. Hrabar commented on the rule of capture. The RHWPG has supported the rule of capture in areas where it works to allocate local groundwater supplies. The RHWPG supports the creation of groundwater conservation districts where management of the groundwater supply is necessary, for instance, because of subsidence or to prevent depletion of the aquifer.
- d. Ms. Hrabar suggested that additional maps be included. This suggestion will be considered in the next update of the Regional Water Plan.
- e. Ms. Hrabar commented that the Executive Summary should mention that water supply is critical to public health. The text of the Executive Summary has been revised.
- f. Ms. Hrabar was concerned about stream segment designations. The “unique stream segments” recommended for designation are those recommended by TPWD as modified by the RHWPG and do not coincide with stream segments and segment numbers assigned to some streams by TNRCC. Given the different purposes of the designations, this should not be a problem.
- g. Ms. Hrabar was concerned about lack of representation for TNRCC on the RHWPG. TNRCC chose to not have representatives on each of the 16 RWPGs because of staff time constraints, but participated in the development of planning guidelines and will review the regional water plans.

(2) Brandt Mannchen, Houston Sierra Club.

- a. Mr. Mannchen suggests putting people where the water is and considering the carrying capacity of an area. The location of population growth is beyond the control or mandate of the RHWPG or the State. Carrying capacity is a concept that must be defined within a set of both natural and technological constraints. Water management strategies selected in the Regional Water Plan are technologically feasible. The decisions as to whether to pursue any given water project will depend on an assessment of the economic, cultural, and environmental costs involved based on project-level analysis.
- b. Mr. Mannchen is concerned that recommended municipal conservation is low. The Regional Plan includes expected water conservation for all user groups and advanced conservation for those with projected shortages. The report text was revised to present this more clearly.
- c. Mr. Mannchen is concerned that some natural areas were not adequately mentioned and suggested that additional streams in the Sam Houston National Forest be considered by designation as ecologically unique. The discussions of natural areas in the Task 1 Report and the Task 3 Report were expanded. The recommended streams were drawn from information provided by TPWD which covered 259 streams in Region H. Updates of the Regional Water Plan will consider new information about streams of ecological value as it becomes available.
- d. Mr. Mannchen objected to Bedias Reservoir and the transfer to SJRA because of impact on the Sam Houston National Forest. Projects included in recommended management strategies will be subjected to detailed project-level analysis and reviews by regulatory agencies and

the public before final decisions to proceed are made. Impact studies will be part of those analyses.

- e. Mr. Mannchen objected to a proposal to transfer water from Lake Livingston to Rock Creek in Grimes County. That proposal is not among the selected management strategies.
- f. Mr. Mannchen objected to basing the Regional Water Plan on unrealistic assumptions that cause a crisis mode response. The Region H Water Plan is based on careful consideration of projected water needs and water supplies during time of drought. The analysis of economic impact of not meeting those water needs used worst-case assumptions to illustrate the possible magnitude of impact from not meeting any of the water needs. The choice of management strategies was not dependent on that economic impact analysis.
- g. Mr. Mannchen objected to the difficulty in obtaining a hard copy of the draft plan and suggested a 60-day comment period. The RHWPG agrees that this initial planning period has been very compressed. Region H will seek to provide a longer comment period and greater availability of hard copy during the next plan update.

(3) Dave Moldal, National Wildlife Federation, Austin.

- a. Mr. Moldal commented that an effective water plan must strike a balance between human, commercial, and environmental water needs. RHWPG agrees.
- b. Mr. Moldal urged full and serious consideration to the environmental impacts of both existing and proposed water development projects. The RHWPG has seriously considered environmental impacts in all of its deliberations and supports continued analysis of environmental water needs. Proposed projects included in recommended management strategies will be subjected to detailed project-level analysis and reviews by regulatory agencies and the public before final decisions to proceed are made. Impact studies will be part of those analyses.
- c. Mr. Moldal suggested that aggressive conservation be applied more broadly. A considerable amount of conservation is built into the water needs projections. The RHWPG is concerned about the ability to implement aggressive conservation programs in the areas where it is most needed – primarily in county-other and smaller communities. A recommendation to address this has been added to the Task 6 Report.
- d. Mr. Moldal objected to the lack of analysis of specific actions to ensure freshwater inflows to Galveston Bay or to the tidal portion of the Brazos River. The RHWPG has supported the efforts of the Galveston Bay Freshwater Inflows Group (GBFIG) and incorporated GBFIG's recommended inflows statement into the Water Plan. A recommendation is included in the Task 6 Report to continue support of GBFIG's work to address the specific actions needed. The RHWPG plans to address freshwater inflow needs to the tidal portion of the Brazos River in the next update to the Water Plan.
- e. Mr. Moldal said the Plan does not address adverse impacts of interbasin transfers and reservoirs. Impacts from diversions and impoundments were noted for each management strategy. Great specificity of impacts can come only from project-level analysis. Proposed projects also will be subjected to reviews by regulatory agencies and the public before final decisions to proceed are made.
- f. Mr. Moldal said that the Plan does not address drought management measures to limit demand. Mr. Moldal is correct that there is no regional drought contingency plan.

Drought contingency plans are implemented by localities, who were required to file their plans with TNRCC by October 2000. This is an area the RHWPG plans to strengthen during the next Regional Water Plan update.

- g. Mr. Moldal said that agricultural conservation measures should be extended beyond the three counties with water shortages. In general, sufficient groundwater exists to meet agricultural water needs outside the three counties with water shortages during times of drought, thus no water management strategies are required. The RHWPG encourages conservation by all water users.
- h. Mr. Moldal objected to the lack of assessment of environmental impacts associated with construction for the three recommended reservoirs. Proposed projects included in recommended management strategies will be subjected to detailed project-level analysis and reviews by regulatory agencies and the public before final decisions to proceed are made. Impact studies for both construction and operation phases will be part of those analyses.
- i. Mr. Moldal commented that the Little River Reservoir conflicts with a potentially ecologically significant stream segment. Review of the Region G Water Plan indicates that Region G did not recommend Little River for designation as an ecologically unique stream segment.
- j. Mr. Moldal commented that an overall surplus of water in the region called into question moving forward with projects before a comprehensive review of environmental water needs is completed. The RHWPG has recognized the importance of additional studies for environmental water needs. It also has recognized the long lead times required for proper analysis and review of proposed water development projects. The RHWPG and project sponsors plan to pursue both.

(4) Dave Buzan, Texas Parks and Wildlife Department, Austin.

- a. Mr. Buzan thanked the RHWPG for including ecologically unique stream segments and freshwater inflows to bays in the Regional Water Plan and encouraged the RHWPG to continue considering them in future deliberations. The RHWPG has included recommendations about support for further environmental studies in the Task 6 Report.

(5) Les Mauldin, Creekside Nursery, Waller County.

- a. Mr. Mauldin commented that he could not find the nursery/floral part of agriculture accounted for in the Executive Summary. Water use by nursery/floral operations has been accounted for under manufacturing/industrial water use.
- b. Mr. Mauldin commented that the Regional Water Plan should be consistent with USDA and Texas Agriculture Code, which consider nursery/floral as part of agriculture rather than industry. Water use classifications are designated at the state level. If this change is effected, it will be reflected in the next Plan update.

(6) Linda Shead, Galveston Bay Foundation, Webster.

- a. Ms. Shead asked that the RHWPG continue considering freshwater inflows to the bay and also the value of instream flows to habitat and recreation. The RHWPG has included a recommendation for continued support for studies addressing environmental water needs and for the efforts of GBFIG.

- b. Ms. Shead applauded the RHWPG for including ecologically unique stream segments and asked that they consider additional designations as new data are collected. New information on ecologically important streams can be considered in the next five-year plan update.
- c. Ms. Shead suggested that additional aggressive conservation could be pursued. A considerable amount of conservation is built into the water needs projections. The RHWPG is concerned about the ability to implement aggressive conservation programs in the areas where it is most needed – primarily in county-other and smaller communities. A recommendation to address this has been added to the Task 6 Report.
- d. Ms. Shead noted that good and effective ways to quantify aesthetic and recreational and natural habitat values of the region’s resources are needed. The RHWPG agrees, and as studies are completed that contribute to the ability to quantify those values, that information will be incorporated into plan updates.
- e. Ms. Shead thanked the RHWPG for finding a creative way to include freshwater inflows in the report even though the TWDB table formats did not include environmental water. No response is required.
- f. Ms. Shead commented on the importance of finding a balance of interests and thanked the RHWPG for looking for that balance. No response is required.

(7) Jack Weatherford, Weatherford Farms, Stafford.

- a. Mr. Weatherford asked for an explanation of how the Subsidence District fits into the picture of groundwater rule of capture. In the counties of Harris, Galveston and Fort Bend, the two subsidence districts have the authority to regulate the withdrawal of groundwater in order to prevent subsidence. The groundwater rule of capture is operative when there is no groundwater conservation district, such as the subsidence districts, whose groundwater management activities override the rule of capture.

Responses to Public Comments from September 21, 2000, Chambers County

(1) Linda Shead, Galveston Bay Foundation, Webster.

- a. Ms. Shead thanked the RHWPG for addressing freshwater inflows to Galveston Bay, for accepting the recommendations of the GBFIG, and for recommending continued funding to support that effort. No response is required.
- b. Ms. Shead applauded the recommendation of ecologically unique stream segments and suggested that additional streams be considered for designation when data are available to assess their value, noting that no Chambers County streams were included. New information on ecologically important streams can be considered in the next five-year plan update.

(2) Bobby Edwards, Stowell.

- a. Mr. Edwards is concerned about bad past experiences with administrative procedures of TNRCC, and that the RHWPG might be seeking additional administrative procedures. The RHWPG operates within the rules and guidelines of the TWDB.
- b. Mr. Edwards has reviewed the plan and found no fatal flaw. No response is required.

Responses to Written Comments Received

(1) Hon. Joe Adams, County Judge, San Jacinto County.

- a. Judge Adams expressed concerns over the economic impacts of low lake levels on San Jacinto County. This issue was discussed extensively by the RHWPG. Unfortunately, no previous studies had been conducted on these impacts, and the scope of this project did not allow for initiating a new economic study. The IMPLAN model used to assess the economic impacts of not addressing water needs looked at water supply shortages on consumptive uses. Because the Regional Water Plan was prepared to ensure water demands are met during a drought period, it is expected that water supply reservoirs will be used to capacity. However, lake levels should not be permanently reduced. Rather, low lake levels are seen as a temporary condition resulting from periods of extended drought, just as flooding results from periods of extended rain. Now that demands on reservoirs have been projected, the normal pool elevations can be determined for periods of average rainfall, as well as the impacts on existing shorelines and facilities. This cannot be completed in time for inclusion in this Regional Water Plan, but these impacts can be included in the first update of the plan.

(2) Pat Brown, Woodlands GREEN.

- a. Ms. Brown's first concern was that the planning process did not begin with a calculation of the region's carrying capacity, and then limit growth based upon that capacity. Carrying capacity is a concept that must be defined within a set of both natural and technological constraints. Water management strategies selected in the Regional Water Plan are technologically feasible. The decision to pursue any particular water project will depend on an assessment of the economic, cultural, and environmental costs involved based on project-level analysis. The limits of existing water resources within the region were discussed by the RHWPG, but it was understood that population growth occurs due to many factors, with available natural resources being only one. The RHWPG did not wish to recommend that the state dictate where future populations can and cannot live, therefore the plan was developed to meet the projected demands.
- b. Ms. Brown's second concern was the limited amount of wastewater reuse within the plan. Many of the industries in our region do recycle flows through their plants in order to reduce water costs. The amount of recycling is balanced with the cost of treating wastewater before returning it to a stream or estuary (the more it is reused the more treatment it requires). Wastewater reuse was recommended along the Houston Ship Channel, where supply from municipal wastewater plants are available and the recycled water will still be returned to the estuary. Extensive reuse was not recommended for upstream portions of the region, mainly due to the downstream need for those return flows. Reuse for landscape and golf course irrigation is encouraged, provided that the safety standards established by the Texas Natural Resources Conservation Commission are met.
- c. Ms. Brown called attention to the fact that water conservation is recommended for most of Montgomery County, but not for the Woodlands. A significant amount of conservation is, in fact, expected to occur throughout the region, but it is not readily apparent in the draft reports. The projected water demands used for the plan assume "below average rainfall and expected conservation." That conservation comes from low-flow plumbing fixtures, graduated water rates and expected improvements in industrial and irrigation conservation methods, and amounts to almost a twenty-percent savings. Advanced conservation, which includes practices such as increased public education and water supply system audits, was

recommended only for those communities with shortages, but there is no reason that every community cannot choose to implement some or all of these measures.

- d. Ms. Brown suggests that Harris County, which accounts for 48 percent of the projected demand, should bear a proportional share of the accountability. In fact, the plan placed the responsibility for increasing conservation and developing new supplies on those water user groups with projected shortages. Those communities that developed water supply projects in the past with an eye towards future growth are now realizing the benefits from those investments.

(3) Hon. Susan Combs, Commissioner, Texas Department of Agriculture.

- a. Commissioner Combs noted that the Region H irrigation projections are greater than those in the Trans-Texas Water Plan, which is a direct result of the diversity of representation on the RHWPG. The RHWPG is made up of representatives of the varied water interest groups. The agricultural representatives did an outstanding job of educating the RHWPG about the potential for continued production within Region H.
- b. Commissioner Combs recommended that the state fund incentives to implement agricultural conservation. The RHWPG discussed irrigation conservation at great length, particularly the issue of funding and assistance to farmers. The recommendation that the state fund implementation incentives for irrigation conservation has been included in the Task 6 Report.
- c. Commissioner Combs asked that nursery and floral use be classified as agricultural use rather than as manufacturing. This distinction is made in the planning guidelines set out by the Texas Water Development Board. The RHWPG has concentrated on making sure that there is adequate water supply for the next fifty years for nursery/floral water uses however they are classified. If a change in classification is effected, it will be reflected in the next updated water plan.

(4) Eddy D. Edmondson, President, Texas Nursery & Landscape Association.

- a. Mr. Edmondson recommends that floriculture and horticulture be listed as agricultural and not industrial water use. The placement of these uses under the manufacturing use category is consistent with the planning guidelines set out by the Texas Water Development Board. The RHWPG has concentrated on making sure that there is adequate water supply for the next fifty years for nursery/floral water uses however they are classified. If a change in classification is effected, it will be reflected in the next updated water plan.

(5) Myron J. Hess, Counsel, National Wildlife Federation.

- a. Mr. Hess is concerned about the recommendation of new reservoir projects while the region has a net projected surplus. However, this surplus is predominantly in the northeast portion of the region, while the projected shortages are mainly in the western and southern portions of the region. Also, a significant portion of the projected surplus is distributed among numerous water contracts and water rights holders, and cannot be consolidated and moved to meet projected demands. Therefore, the region ends up with an effective shortage.
- b. Mr. Hess favors additional water conservation. The RHWPG agrees that water conservation is a critical element in the plan. All water users are expected to attain a certain amount of water conservation. However, the plan does not include a projection of water demands with

no conservation in place, and so the amount of demand reduction is not apparent. Many people have commented on this omission, and text of the report has been clarified.

The savings from advanced water conservation measures for municipalities are not constant over time because some of the "advanced" measures later fall in the "expected" category, and are already accounted for. Because advanced conservation requires additional efforts by the local government and water suppliers, it is recommended only for those municipalities with shortages. However, the City of Houston, which does not have a projected shortage, has already elected to implement advanced conservation methods.

Mr. Hess recommends that irrigation conservation be applied to all counties with significant rice farming. While the planning group encourages all irrigators to take conservation steps, the RHWPG has limited the requirement to those counties with projected shortages. Should funding assistance become available to farmers, the next plan update may include agriculture in other counties.

- c. Mr. Hess points out that the plan does not address specific drought management actions to be taken should trigger conditions be reached. As the RHWPG looked at the demand projections, the difference between water demands in drought and normal years was small (five to ten percent lower). While drought measures will be required for individual communities due to treatment and conveyance limitations, the region as a whole will require all of the additional supplies recommended in the plan. Therefore, drought management was not addressed. The State has required all public water suppliers to prepare drought contingency plans and submit them to the TNRCC by October 2000. These plans will be addressed in the Regional Water Plan during the next planning cycle.
- d. Mr. Hess is concerned about environmental flows and inflows to the bays and estuaries. The RHWPG relied upon previously prepared reports and studies for information, and agrees that additional specific studies are required. The RHWPG is still addressing the issue of how to allocate flows against environmental needs, since they are not currently included in the state's list of water user groups. Clarifying revisions to the text were made when possible.
- e. Mr. Hess identified omissions from Appendix C of the Task 3 Report. The listing will be updated accordingly.
- f. Mr. Hess raised several concerns about the discussion of social, environmental and economic impacts in the Task 5 Report. Text revisions were made when possible. Some of the environmental questions Mr. Hess raised will require additional study that was not funded in this planning process.
- g. Mr. Hess commented on the proposed management strategies. In regard to contractual transfers, the water right or contract holders who were considered were not specifically listed. Additional transfers were not made for a variety of reasons. These included: surpluses in Chambers County that were not easily transported to areas with shortages; surpluses existing in numerous small contracts that were significant only in the aggregate; and water users holding rights or contracts in anticipation of long-term growth beyond the planning period. This management strategy will be revisited with each update of the plan.

Mr. Hess expressed numerous concerns about the proposed and recommended reservoir projects. The plan is based upon a review of previously prepared project studies, and

detailed future studies will be required. Should those studies reveal unacceptable impacts related to a project, the planning group will amend its recommendations.

Mr. Hess raises a concern about the discharge plan for reject water from the proposed wastewater reclamation facility. This discussion will be clarified in the report.

Mr. Hess's concerns about the San Jacinto River Authority / City of Houston Water Transfer may be well founded. This strategy was discarded because the parties did not come to agreement.

Mr. Hess has concerns about the Luce Bayou Interbasin Transfer. This transfer is specifically permitted in the City of Houston's Lake Livingston water right. However, the Texas Natural Resources Conservation Commission is the approval agency for all conveyance facility plans, and they have the responsibility of ensuring that any and all environmental impacts are reduced and mitigated.

Mr. Hess has concerns about the City of Houston / Trinity River Authority contract agreement. The demand projections for the region show that Houston will not need this water until 2050 at the earliest. The City of Houston is securing existing water supplies to meet long term potential growth. When the City applies for an interbasin transfer permit, all of the issues he raised will be addressed.

Mr. Hess has concerns about the other considered interbasin transfers to and from the Trinity River Basin. These projects were not recommended as management strategies for many of the same reasons he identified.

- h. Mr. Hess expressed concerns about the designation of unique reservoir sites and unique streams. The implications of designating unique reservoir sites do not appear as restrictive as he suggests, since identifying a site is not a commitment to construct the reservoir. Designating unique streams, however, does carry implications of future restrictions applied to those streams. The planning group has requested clarification on this issue. New information on ecologically important streams can be considered in the next five-year plan update.
- i. Mr. Hess' observation about the recommendation to end cancellation of water rights is accurate. Wording of the text will be revised.
- j. Mr. Hess is concerned about the recommendation to continue the Rule of Capture. This recommendation is included in support of the rural portions of the region, which have adequate groundwater supplies. As stated in the recommendation, the rule of capture should remain subordinate to resource management by local groundwater districts.

(6) Mr. Billy Howe, Associate Legislative Director, Texas Farm Bureau.

- a. Mr. Howe commented on interbasin transfers and the affect of increased water costs on irrigators. Region H is already dependent on interbasin transfers from both the Brazos and the Trinity Rivers. The RHWP recommendations for future interbasin transfers were made only after conservation, reuse and new supply development strategies were selected. The

RHWPG has recommended that the state fund future studies that will provide more options for irrigators to make optimal use of the water they already have.

(7) Hon. Troy Lewis, Mayor, City of Alvin.

- a. Mr. Lewis is concerned about the accuracy of population growth projections. The RHWPG shares your concerns about accurately representing population growth throughout the unincorporated areas of the region. A recommendation to the Water Development Board that the population projections be updated as soon as the 2000 Census data becomes available has been included in the Task 6 Report, and all local governments are encouraged to participate in the next five-year update of the plan.
- b. Mr. Lewis requests that a locally prepared plan be incorporated into the Regional Water Plan. The RHWPG appreciates the efforts made in initiating regional water planning for Mid-Brazoria County. The RHWPG understands the benefits of locally prepared plans, and looks forward to incorporating those results in the regional plan. Recognition of the Mid-Brazoria Water Planning Group has been added to the Task 1 Report.

(8) Brandt Mannchen, Conservation Committee, Houston Sierra Club.

- a. Mr. Mannchen's first concern was about the public participation process and the availability of the report for review. The public participation process began two years ago, with a series of public meetings held to introduce the public to the planning process. Those that attended the meetings received handout materials and copies of our newsletter. Additional public meetings and meetings with organizations were held when the population and demand projections were developed, and when the supply projections were developed. The final series of public hearings were held to review the draft plan. The RHWPG at its monthly meetings has welcomed public comments throughout the planning process. As for the availability of the report documents for review, the placement of reports in county clerks offices and libraries is required under the regional water planning rules per 31 TAC 357.12(b). Additional copies were not initially made, but are now available from our consultant team at cost. The RHWPG is committed to full public participation and will continue to seek expanded communication with the public during the next five-year update of the plan.
- b. Mr. Mannchen has concerns about the recommendation of new reservoirs while the region is projected to have a net surplus of water. What is not readily apparent in the executive summary is that the surplus exists in the northeast portion of the region, while the shortages occur in the western and southern portions of the region.
- c. Mr. Mannchen suggests limiting populations to the carrying capacity of the region. Carrying capacity is a concept that must be defined within a set of both natural and technological constraints. Water management strategies selected in the Regional Water Plan are technologically feasible. The decisions as to whether to pursue any given water project will depend on an assessment of the economic, cultural, and environmental costs involved based on project-level analysis. The location of population growth is beyond the control or mandate of the RHWPG or the State.
- d. Mr. Mannchen is correct that the Executive Summary does not discuss interaction with the adjoining regions. Region H directly interacts with Region G through the Brazos River Authority, and with Region C through the Trinity River Authority. These river authorities sit

on the regional water planning groups in both regions and have been involved in the planning process since the beginning. Region I has a liaison member of the RHWPG, and several joint meetings between Region H and Region I have occurred. This interaction was overlooked and will be described in the final report.

- e. Mr. Mannchen expressed concern about the Sam Houston National Forest. Several of the management strategies considered included proposals for a pipeline from Lake Livingston along the Highway 190 right-of-way, but the planning group recommended against each of these. The development of Bedias Reservoir was recommended to meet the projected needs of Montgomery County. The transfer of this water is not anticipated to have a significant impact on the portion of the West Fork of the San Jacinto River within the National Forest. This recommendation is based upon a review of existing studies, and detailed follow-on work remains to be completed. If the project studies reveal the impacts will be unacceptable, the RHWPG will consider alternative supply strategies in the next five-year update of the plan.
- f. Mr. Mannchen expressed similar concern about the need to protect the other natural areas in the region. While these protections are not expressly covered in the plan, they are not deliberately omitted, and will be incorporated in future updates as new information becomes available and appropriate protective strategies are addressed.
- g. Mr. Mannchen states that there are more than six valuable stream segments in the region. The RHWPG agrees. Clarification from the state as to the full implications of designating streams as unique has been requested. Once those implications are known, the RHWPG will consider adding other stream segments from the list compiled by the Texas Parks and Wildlife Department or from new information. Mr. Mannchen's recommendation about streamside zone protection being needed will be considered for future updates of the plan.
- h. Mr. Mannchen's comment about demands not being the same as needs is technically accurate. For purposes of the Regional Water Plan, the terms "demand" and "need" are used interchangeably, and refer to projected water demands in both cases.
- i. Mr. Mannchen is concerned about the estimated costs of the various strategies. The RHWPG has assembled estimates within the guidelines set out by the Water Development Board that are as realistic as possible. All prices shown have been converted to 1999 dollars as the standard for comparison.
- j. Mr. Mannchen is correct that there are many impacts to be addressed when an interbasin transfer is recommended. Our recommendations are based upon previously prepared studies and existing transfer permits. The Texas Natural Resources Conservation Commission is the approving agency for future transfer permits, and their regulations require the impacts to both the source and destination basins be identified and addressed.
- k. Mr. Mannchen expressed concern about water conservation and its inclusion in the plan. A minimum level of conservation is expected from all water users. This reduction is not readily apparent because the water demands without conservation were not included in the plan report. However, a per capita demand reduction of 15 - 20% is realized, when compared to earlier per capita projections made without conservation. The City of Houston has elected to implement an advanced conservation program, which further decreases the demand projections. Advanced conservation is recommended for communities with projected shortages, which is why the level of conservation seems small. This discussion will be clarified in the report.

- l. Mr. Mannchen is concerned about the river authorities and engineering consultants running the study and potential conflicts of interest. The RHWPG is made up of representatives from various water interest groups, including agriculture, county government, electric generating utilities, environmental groups, industries, municipalities, river authorities, small businesses, water districts, water utilities and the public-at-large. No one interest group has a majority or a veto vote. The consultant team prepares reports at the direction of the RHWPG, and does not have a vote on the plan. All of the meetings are open to the public, and are advertised in accordance with the Texas Open Meetings Act.
- m. Mr. Mannchen objected to basing the Regional Water Plan on unrealistic assumptions of the economic impact model. The Region H Water Plan is based on careful consideration of projected water needs and water supplies during time of drought. The analysis of economic impact of not meeting those water needs used worst-case assumptions to illustrate the possible magnitude of impact from not meeting any of the water needs. The choice of management strategies was not dependent on that economic impact analysis.
- n. Mr. Mannchen states that livestock water demands should decrease. The RHWPG does not agree with your prediction of livestock water demands.
- o. Mr. Mannchen is concerned about changing the notification requirements for plan amendments. It is not the intent of the group to exclude anyone from the review process, but to reduce the notification requirements for amendments that are truly local in nature.
- p. Mr. Mannchen is concerned about introducing flexibility in the management strategies. The current planning guidelines allow the planning group to recommend only one strategy or set of strategies to meet a community's projected needs for the first 30 years of the planning period. Many community master plans do not look beyond five or ten years. The RHWPG would prefer to recommend several strategies for these communities, all of which would meet the planning guidelines and criteria. Once the community or local water authority adopts one and adds it to their master plan, the RHWPG would update the regional plan accordingly. This would result in fewer amendments to the plan.
- q. Mr. Mannchen is opposed to removing barriers to interbasin transfers of water. Region H already depends on interbasin transfers of water, both from the Trinity River Basin and from the Brazos River Basin. Region H also has recognized the importance of instream flows and flows to bays and estuaries. Proposed interbasin transfers will be scrutinized at the project level by regulatory agencies and the public to ensure that the transfers do not negatively affect the basin of origin.
- r. Mr. Mannchen suggests that the current RHWPG be expanded. The RHWPG had lengthy deliberation about its membership, which must represent all interests affected by water supply as well as the widespread geography of this region. The number of members was set in the bylaws at a maximum of 25 to provide a workable size group while meeting the objectives of representation.
- s. Mr. Mannchen objects to the recommendation for implementation funding. The RHWPG thinks that state funding assistance is needed to implement recommended management strategies, including reservoir projects. This does not mean that unwarranted projects will be built. Project level reviews will still occur.
- t. Mr. Mannchen is concerned about the brine disposal associated with desalination. Plant location decisions are based as much upon disposal options as upon proximity to a water

source. However, when the brine can successfully be disposed of, a coastal desalination facility can have a more reliable supply than a reservoir, with fewer environmental impacts.

- u. Mr. Mannchen is concerned about the affects of sedimentation on reservoirs and on coastal erosion. This has been studied in the past and remains an area of concern. Mr. Mannchen's recommendation to not build more reservoirs until this issue is resolved could result in growing populations overusing groundwater. In a coastal region subject to subsidence, this will also contribute to coastal erosion.

(9) Les Mauldin, Creekside Nursery, Hempstead.

- a. Mr. Mauldin recommends that nursery and floral be listed as agricultural and not industrial water use. The placement of these uses under the manufacturing use category is consistent with the planning guidelines set out by the Texas Water Development Board. If this change is effected at the state level, it will be reflected in the next Plan update.

(10) Carlos H. Mendoza, Project Leader, Clear Lake Field Office, U.S. Fish and Wildlife Service.

- a. Mr. Mendoza commented that environmental studies are required for the proposed reservoirs and inter-basin transfers. Of the projects listed, only Allen's Creek Reservoir currently is in the permitting process. The RHWPG understands that the planning and approval process for the remaining projects may take years to complete. The RHWPG also agrees that additional environmental flow studies for estuaries are required, and has recommended that the state continue funding for these studies. The inclusion of these projects as management strategies in the Region H Water Plan is the first of many steps that must be taken before they can be implemented.
- b. Mr. Mendoza pointed out the omission of the Trinity River National Wildlife Refuge in our description of the region. The Task 1 Report will be updated accordingly.
- c. Mr. Mendoza recommends adding the freshwater inflow requirements for Galveston Bay to the Task 2 Report. The inflow requirements are already included in the report, but may be difficult to find. They are included as Table 2A in Appendix A, which summarizes the recommended minimum and optimal flows for the bay.
- d. Mr. Mendoza suggests adding a Table of Contents and clarifying the freshwater inflow definitions in the Task 3 Report, and adding a Table of Abbreviations to each Task Report. These changes and additions will be made.
- e. Mr. Mendoza expresses a concern about freshwater inflows not being directly addressed in the Task 4 report. Although the unused portions of existing water rights will meet some of these flows, a formal analysis of these flows has not been completed. Text will be clarified when possible.
- f. Mr. Mendoza suggests that environmental mitigation costs be included in the estimated cost of reservoirs and interbasin transfers. Estimates of environmental mitigation costs are included. These initial estimates may be low. The cost estimates for reservoirs used in the regional water plan are based upon previous studies. The cost of interbasin transfer strategies were calculated as part of this report, and the mitigation costs are calculated using topographic map data and average land costs. The RHWPG agrees that detailed environmental studies and cost estimates should be prepared for all of the recommended strategies.

- g. Mr. Mendoza recommends that the state designate an agency to manage water use for Galveston Bay. The Galveston Bay Freshwater Inflows Group is assisting the RHWPG in developing management strategies to meet freshwater inflow needs, and Mr. Mendoza's recommendation will be forwarded to GBFIG. When their work is complete, GBFIG will make management recommendations to the RHWPG for incorporation in an updated Regional Water Plan.

(11) Craig Nisbett, P.E., Public Works Director, City of Lake Jackson.

- a. Mr. Nisbett is concerned about the allocation of groundwater for Lake Jackson. The starting point for determining the available groundwater for Brazoria County, was the historic peak groundwater use, as recorded by the Texas Water Development Board. The peak usage for Lake Jackson was recorded in the late 1980's, just before the city began purchasing water from the Brazosport Water Authority. Groundwater supplies were then increased proportionally for all municipalities, until the sustainable yield of the aquifer was met. Because this method did not address existing well-field capacity, Lake Jackson was not allocated more than this proportional increase. The RHWPG understands that the current use of surface water in your area was based upon concerns over the quality of the groundwater. For more groundwater supply to be allocated to Lake Jackson, an equal amount of supply must be taken away from other groundwater users. Because this issue does not affect the first five years of the planning period, the RHWPG will revisit all of the groundwater users in southern Brazoria County and reflect the changes in the first periodic update of the plan.

(12) Marianne Pape, Houston.

- a. Ms. Pape asked for information about the proposed Bedia Reservoir. The Bedia Reservoir is located on Bedia Creek in the Trinity River Basin, at the junction of Madison, Walker and Grimes Counties. It would impound water above Lake Livingston, and is recommended as a source of supply for the San Jacinto River Basin. This interbasin transfer will require the additional construction of a pump station and pipeline to move this water over the basin divide and into the San Jacinto River.
- b. Ms. Pape commented that better use should be made of San Jacinto River water. The RHWPG encourages efficient use of all water. Demands in the San Jacinto basin exceed water supply in that basin.
- c. Ms. Pape asked for the name of the state contact. The RHWPG has developed this plan under the guidance of the Texas Water Development Board, whose liaison with Region H is Mr. Ernest Rebuck, P.E.
- d. Ms. Pape asked where a copy of the Plan can be obtained. Copies of the Draft Regional Water Plan are available for public review in your county at the Harris County Clerk's Office, 1001 Preston Ave, Houston, at the main branch of the Houston Public Library, and on the Texas Water Development Board website, www.twdb.state.tx.us. A copy of the complete 7-volume report may be purchased from the Region H consultant team, whose project manager is Mr. Jeff Taylor at Brown & Root Services.

(13) Wayne Sabo, City Administrator, City of Manvel.

- a. Mr. Sabo observed that the population projections for some portions of Region H, and his portion of Brazoria County in particular, are low. The RHWPG has recommended to the

Water Development Board that these estimates be revised when the 2000 census data becomes available. The City of Manvel is encouraged to review the revised projections once they are prepared and to participate in the next five-year plan update.

- (14) Andrew Sansom, Executive Director, Texas Parks and Wildlife Department, Austin.
- a. Mr. Sansom thanked the RHWPG for recommending streams for designation as unique ecological stream segments and addressing freshwater inflows to Galveston Bay. The RHWPG would like to thank the Texas Parks and Wildlife Department for their ongoing support of the planning process, particularly in the area of unique stream segments. The data and analysis provided to the RHWPG was invaluable in the decision process. The planning group has requested clarification of the implications of the designation and will consider new information on ecologically important streams and additional designations in the next five-year plan update.
- (15) Linda R. Shead, P.E., Executive Director, Galveston Bay Foundation, Webster.
- a. Ms. Shead expressed concern about implementation of two recommended management strategies before their impacts on instream flows and freshwater inflows into Galveston Bay are known. The RHWPG has recommended several management strategies that may divert water from the Trinity River and affect these flows. However, none of these is recommended for immediate implementation. As more information about the impacts becomes available, the RHWPG may modify the plan or implement additional strategies to protect the bay. The RHWPG continues to support the work of the Galveston Bay Freshwater Inflows Group to address the issue of how to allocate flows for environmental needs.
 - b. Ms. Shead suggested that addition streams be considered for designation as ecologically unique. The planning group has requested clarification of the implications of the designation and will consider new information on ecologically important streams and additional designations in the next five-year plan update.
 - c. Ms. Shead commented on the level of conservation in the plan. It is difficult to see the amount of savings anticipated from "expected conservation" because the demand projection with no conservation is not shown. This makes the additional savings under "advanced conservation" seem understated. The text will be revised to clarify this.
- (16) Mr. William C. Wade, Clute.
- a. Mr. Wade is concerned about the treatment capacity of the Brazosport Water Authority. Growth and demand projections indicate that there is insufficient groundwater in southern Brazoria County to meet future demands. Therefore, the municipalities in that area must rely more on surface water in the future. The Brazosport Water Authority is currently the only provider of treated surface water in the area, and their inclusion in the Region H plan allows them to approach the Texas Water Development Board for assistance in plant expansions. The municipalities in the area may elect to purchase water from the Brazos River Authority and treat it independently of the BWA. Should that be their choice, that change will be incorporated into updates of the regional plan.
 - b. Mr. Wade is concerned about saltwater intrusion into the Dow reservoirs. The RHWPG is aware of this issue and is working to develop strategies to address saltwater intrusion in the next five-year plan update.

- (17) Mary Ellen Whitworth, P.E., Executive Director, Bayou Preservation Association, Inc.
- a. Ms. Whitworth supports the designation of Armand Bayou as a unique stream segment. No response is required.
 - b. Ms. Whitworth supports freshwater inflows of sufficient magnitude to support a productive healthy Galveston Bay. The RHWPG has supported the efforts of the Galveston Bay Freshwater Inflows Group (GBFIG) and incorporated GBFIG's recommended inflows statement into the Water Plan. A recommendation is included in the Task 6 Report to continue support of GBFIG's work to address the specific actions needed
 - c. Ms. Whitworth is a strong supporter of water conservation measures. The RHWPG also supports water conservation. The Regional Plan includes expected water conservation for all user groups and advanced conservation for those with projected shortages. The City of Houston, which does not have a shortage during the planning period, has elected to implement advanced conservation and this is reflected in the plan's demand projections.
- (18) Marvin and Doris Williams, Bedias.
- a. Mr. And Ms. Williams advocate stronger conservation education and guidelines. The RHWPG agrees. A minimum level of conservation is expected from all water users. This reduction is not readily apparent because the water demands with no conservation were not included in the plan report. The City of Houston has elected to implement an advanced conservation program, which further decreases the demand projections. Because all communities are projected to meet the expected conservation targets, the advanced conservation measures recommended in the plan seem small. This discussion will be clarified in the report.
 - b. Mr. and Mrs. Williams expressed concerns about the development of Bedias Reservoir, and the rights of the current landowners. The recommendation of this reservoir for development is only the beginning of a long process of environmental, hydrologic and economic study. During that process, the property rights of the current landowners should be addressed, and the landowners will be allowed to provide input and comments. If finally constructed, the public agency constructing the reservoir will purchase the required land, and will be required by the state to ensure that the landowners receive just compensation.
 - c. Mr. and Mrs. Williams asked about the potential impacts on groundwater, should surface water be moved within the region. No major impacts are foreseen at this time, but that issue will be further addressed during the planning studies for the recommended projects. The Texas Natural Resources Conservation Commission requires these studies, and will not approve a water rights permit for projects that adversely affect existing water resources.
- (19) Norman Young, Coldspring.
- a. Mr. Young has concerns about the environmental impacts of developing new reservoirs in the region. While it is true that the region is projected to have a net surplus of water supply in 2050, not all of this supply is available to meet needs in areas with projected shortages. A significant portion of the surplus exists in the Lake Livingston - Lake Wallisville system, while the demands are in the southwestern portion of the region. Construction of a conveyance system from Lake Livingston to the areas of need would impact the Sam Houston National Forest, as well as the Lower Trinity River Basin. Even if completed, the

supply made available would not be sufficient to meet all projected demands. Any new supply strategy recommended will have some environmental impacts. The RHWPG will work to ensure those impacts are minimized. The RHWPG also is open to alternate strategies should they arise in the future.

- b. Mr. Young expressed concern about the level of conservation included in the plan. A minimum level of conservation was expected from all water users. This reduction is not apparent because the water demands with no conservation were not included in the report. The City of Houston has elected to implement an advanced conservation program, which further decreased the demand projections. Because all communities are projected to meet the expected conservation targets, the advanced conservation measures recommended in the plan seem small. This discussion will be clarified in the report.