



MEETING MATERIALS

May 2, 2012

San Jacinto River Authority

Region H Water Planning Group
10:00 AM Wednesday
May 2, 2012
San Jacinto River Authority Office
1577 Dam Site Rd, Conroe, Texas

AGENDA

1. Introductions.
2. Review and approve minutes of February 29, 2012 meeting.
3. **Receive public comments on specific issues related to agenda items 4 through 11.** (Public comments limited to 3 minutes per speaker)
4. Consider and take action on the appointment of Executive Committee members of the Region H Water Planning Group.
5. Receive update from Consultant Team regarding the schedule and milestones for the first phase of development of the 2016 Region H Regional Water Plan.
6. Receive update from Consultant Team and Groundwater Supply Subcommittee regarding draft groundwater supply availability estimates for use in development of the 2016 Region H Regional Water Plan.
7. Receive update from Consultant Team and Surface Water Supply Subcommittee regarding draft surface water supply availability estimates for use in development of the 2016 Region H Regional Water Plan, including supplies originating from the Neches-Trinity, Trinity-San Jacinto, and Brazos-Colorado coastal basins.
8. Receive presentation from the Consultant Team and Water Management Strategy Subcommittee on the strategy selection process and criteria, preliminary list of alternatives for detailed analysis in the development of the 2016 Regional Water Plan, and development of a safety factor for the allocation of supplies and strategies to Water User Groups and take action as necessary.
9. Consider and take action on authorizing the Consultant Team to develop a scope of services and budget estimate for accelerated funding under Task 4D of the 2016 Regional Water Plan.
10. Receive report regarding recent and upcoming activities related to communications and outreach efforts on behalf of the Region H Planning Group.
11. Agency communications and general information.
12. **Receive public comments.** (Public comments limited to 3 minutes per speaker)
13. Next Meeting: June 6, 2012.
14. Adjourn

Agenda Item 2

Review and approve minutes of February 29, 2012 meeting.

MINUTES
REGION H WATER PLANNING GROUP MEETING
10:00 A.M.
February 29, 2011
SAN JACINTO RIVER AUTHORITY
GENERAL AND ADMINISTRATION BUILDING
1577 DAM SITE ROAD
CONROE, TEXAS

MEMBERS PRESENT: David Bailey, John Bartos, Robert Bruner, Jun Chang, Reed Eichelberger, Mark Evans, Art Henson, John Hofmann, John Howard, Robert Istre, Kathy Jones, Gena Leathers, Ted Long, Marvin Marcell, Carl Masterson, James Morrison, Ron Neighbors, William Teer, Danny Vance, and Pudge Willcox

DESIGNATED ALTERNATES: Charles Dean for John Blount, Mike O'Connell for Bob Hebert, Paul Nelson for Jimmie Schindewolf, and Tom Michel for C. Harold Wallace

MEMBERS ABSENT: Glynn Leiper and Steve Tyler

NON-VOTING MEMBERS PRESENT: Temple McKinnon and Melinda Silva

PRESIDING: Mark Evans, Chair

CALL TO ORDER REGULAR MEETING AT 10:08 A.M.

A quorum was present.

INTRODUCTIONS

Mr. Evans welcomed everyone and alternates were announced.

REVIEW AND APPROVE MINUTES OF DECEMBER 7, 2011 MEETING

The minutes for the December 7, 2011, meeting were presented. Motion was made by Mr. Marvin Marcell, seconded by Mr. Danny Vance, to approve the minutes. The motion carried unanimously.

RECEIVE PUBLIC COMMENTS ON SPECIFIC ISSUES RELATED TO AGENDA ITEMS 4 THROUGH 13

There were no public comments.

ACCEPT THE RESIGNATION OF REED EICHELBERGER AS A VOTING MEMBER OF THE REGION H WPG REPRESENTING RIVER AUTHORITIES

Mr. Eichelberger stated that the planning group is at the beginning of a planning cycle and therefore it is an appropriate time for Mr. Jace Houston to take his place. He mentioned that he has enjoyed his time as a member of the Region H WPG. Discussion ensued regarding Mr. Eichelberger's accomplishments while serving, and all remaining members thanked him for his time on the WPG.

Motion was made by Mr. Ron Neighbors to accept the resignation of Mr. Reed Eichelberger as a voting member of the Region H WPG representing authorities. Mr. Vance seconded the motion. The motion carried unanimously.

CONSIDER AND TAKE ACTION ON THE SELECTION OF JACE HOUSTON AS A VOTING MEMBER OF THE REGION H WPG REPRESENTING RIVER AUTHORITIES

Brief discussion ensued regarding Mr. Houston joining the Region H WPG and his service to the group over the years.

Motion was made by Mr. Vance, seconded by Mr. Carl Masterson, to approve the selection of Mr. Houston as a voting member of the Region H WPG representing river authorities. The motion carried unanimously.

RECEIVE UPDATE ON STATUS OF COMMITTEES AND APPOINTMENT OF COMMITTEE MEMBERS FOR THE 2016 REGION H REGIONAL WATER PLAN

Mr. Jason Afinowicz discussed the status of the committees and appointments within those established committees. He mentioned that the following committees had been formed: non-population demands, population demands, groundwater supply, surface water supply, and water management strategies.

RECEIVE UPDATE FROM CONSULTANT TEAM REGARDING THE SCHEDULE AND MILESTONES FOR THE FIRST PHASE OF DEVELOPMENT OF THE 2016 REGION H REGIONAL WATER PLAN

Mr. Afinowicz discussed the schedule and milestones. He mentioned that the calendar has not changed dramatically. Revisions to scheduled tasks are based on changes from the Texas Water Development Board. The following scheduled tasks are specifically affected by changes from the TWDB: available supplies (05/2012) and population demands (08/2012).

RECEIVE UPDATE FROM CONSULTANT TEAM AND NON-POPULATION DEMANDS COMMITTEE REGARDING NON-POPULATION DEMAND PROJECTIONS RECOMMENDED FOR THE 2016 REGION H REGIONAL WATER PLAN AND CONSIDER APPROVING SUBMITTAL TO TWDB

Ms. Gena Leathers indicated that the Non-Population Demands Committee met on January 11th and February 6th, both meetings were very productive and were deliberately scheduled relatively close to the Region H WPG meeting to report committee discussion to the Group and Chair.

Mr. Afinowicz discussed the total non-population demand and alternative projections. Discussion ensued regarding how original and alternative projections were generated.

After its two meetings, the Non-Population Demands Committee agreed that the following changes need to be made: increase irrigation demands, adjust manufacturing demand for some counties, and verify steam-electric projections.

Discussion ensued regarding water use survey points and how the 2011 drought will affect numbers.

Motion was made by Mr. Vance to approve submittal of the recommended non-municipal demand projections to the TWDB with the exception of Galveston County manufacturing demands, seconded by Mr. John Howard.

Further discussion ensued regarding livestock, manufacturing, mining, and steam electric demands.

Mr. Vance restated his motion to approve submittal of the recommended non-municipal demand projections to the TWDB with the exception of Galveston County manufacturing demands, seconded by Mr. Bruner. The motion carried unanimously.

RECEIVE PRESENTATION FROM JACE HOUSTON, CONSULTANT TEAM, AND TWDB ON THE REGIONAL PLANNING PROCESS

Mr. Houston began by passing around the Region H member list and asking all members and alternates to update their contact information. He continued by stating that since it is the beginning of a planning cycle, there had been some interest from the Group in receiving a presentation on regional water planning, including the history of regional water planning in Texas, the basic procedures and rules, and the deliverables of the regional planning process. Mr. Reedy, Mr. Afinowicz, and Mr. Houston delivered the presentation and answered questions.

RECEIVE PRESENTATION FROM TWDB ON DRAFT RULE REVISIONS RELATED TO REGIONAL WATER PLANNING

Ms. McKinnon updated the Group on proposed rule revisions to the following: Texas Water Code, Ch. 16, Subchapter C, and Texas Administrative Code, Title 31, Part 10. She continued by explaining the rule revision process, which is as follows: obtain initial input for early draft from state agencies, Region H WPG, and other stakeholders; develop formal draft rule revisions for publication; and revise and adopt final rules.

RECEIVE PRESENTATION FROM TOM MICHEL ON PROGRESS AND STATUS OF THE BRAZOS BASIN AND BAY AREA STAKEHOLDER COMMITTEE AND TAKE ACTION AS NECESSARY

Mr. Tom Michel gave a presentation regarding the Brazos River Basin and Bay Area Stakeholders Committee (“BBASC”). Mr. Michel explained that the Brazos BBASC desired to engage a facilitator to assist with its meetings, but it lacks funding to cover the cost of these services. He asked the Region H WPG to consider providing financial assistance.

Discussion ensued regarding the decision to provide assistance. Mr. Neighbors asked if the Region H WPG has available funds to assist the Brazos BBASC. Mr. Houston then provided a summary financial report to the Group. Discussion ensued.

Motion was made by Mr. Neighbors to contribute \$5,000.00 from the Region H Local Contribution Account to the Brazos BBASC, seconded by Mr. Masterson. The motion carried. Mr. Mike O’Connell and Mr. Michel abstained.

Mr. Vance requested that a record be kept to reflect that the amount of the contribution came from contributors in the Brazos River area of Region H.

RECEIVE REPORT REGARDING RECENT AND UPCOMING ACTIVITIES RELATED TO COMMUNICATIONS AND OUTREACH EFFORTS ON BEHALF OF THE REGION H PLANNING GROUP

Mr. Afinowicz continued by discussing recent community outreach activities. He stated that the consultant team spoke at the *Brazoria County Water for Our Future Task Force Meeting* regarding how the Region H WPG recommendations affect Brazoria County.

Ms. Leathers noted that Mr. Afinowicz has done a great job educating and providing clarification on what the Region H WPG does regarding planning and implementation.

Mr. Afinowicz further mentioned that the *Houston Land Water Sustainability Forum* would take place at the end of March.

AGENCY COMMUNICATIONS AND GENERAL INFORMATION

Ms. McKinnon stated that the *Water Conservation Savings Quantification Study* is available online and will be placed on the Region H WPG web page. She further mentioned that the study contains methodology that the planning group can utilize.

Mr. Mark Evans suggested having a legislative reception to give legislatures an overview of what has been going on with the planning group. He asked if the Group believes this is an appropriate thing to do with Region H WPG funds.

Motion was made by Mr. Michel to task the Executive Committee with recommending something at the next meeting regarding a legislative reception, seconded by Mr. Vance. The motion carried unanimously.

RECEIVE PUBLIC COMMENTS

Mr. Dan Davis, MUD Director in Montgomery County, thanked the Region H WPG for their service. He discussed Mayor Melder's legislative proposal for a one percent sales tax to be dedicated to water projects and how he would appreciate the WPGs assistance with implementation. He also encouraged the Group to look at brackish groundwater.

Ms. Kay Willcox, from the City of Anahuac, stated that there had been a serious problem with the City's water plant due to a mechanical failure. She continued by stating that the City contracted Rain for Rent to treat the water until the water treatment plant was operational. She also stated that this process is becoming more cost-effective.

NEXT MEETING

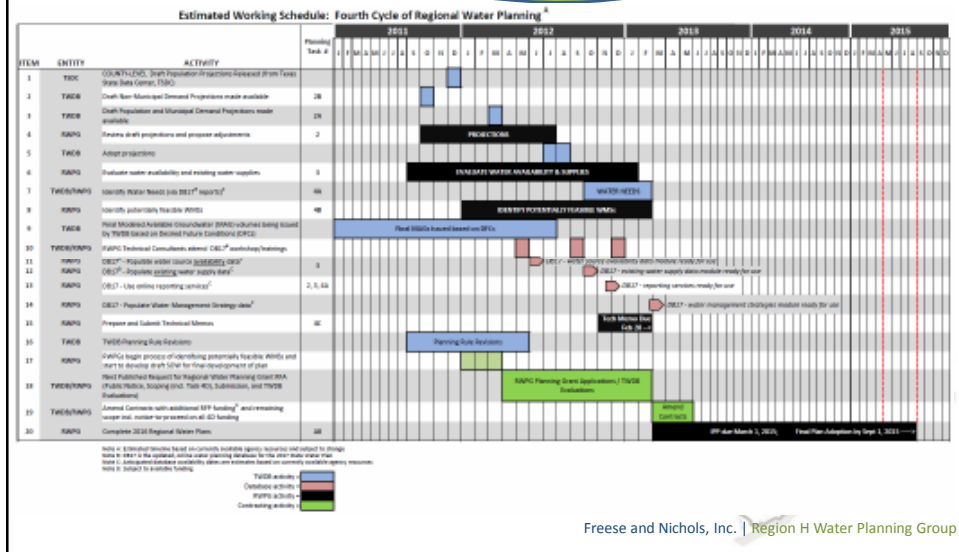
May 2, 2012
San Jacinto River Authority
General and Administration Building
1577 Dam Site Road
Conroe, Texas 77304

ADJOURNED AT 12:39 P.M.

Agenda Item 5

Receive update from Consultant Team regarding the schedule and milestones for the first phase of development of the 2016 Region H Regional Water Plan.

Agenda Item 5 2016 RWP Schedule and Milestones



Agenda Item 5 2016 RWP Schedule and Milestones



Date	Event	Scheduled Tasks
08/2011	RWPG Meeting	No Scheduled Tasks
12/2011	RWPG Meeting	No Scheduled Tasks
02/2012	RWPG Meeting	Review Non-Population Demands
05/2012	RWPG Meeting	Review Available Supplies
08/2012	RWPG Meeting	Review Population Demands Review Supply Allocations
11/2012	RWPG Meeting	Review Water Needs and WMS
02/2013	RWPG Meeting	Approve Technical Memorandum
2/28/2013	Due Date	Technical Memorandum to TWDB

Agenda Item 6

Receive update from Consultant Team and Groundwater Supply Subcommittee regarding draft groundwater supply availability estimates for use in development of the 2016 Region H Regional Water Plan.

Region H Counties

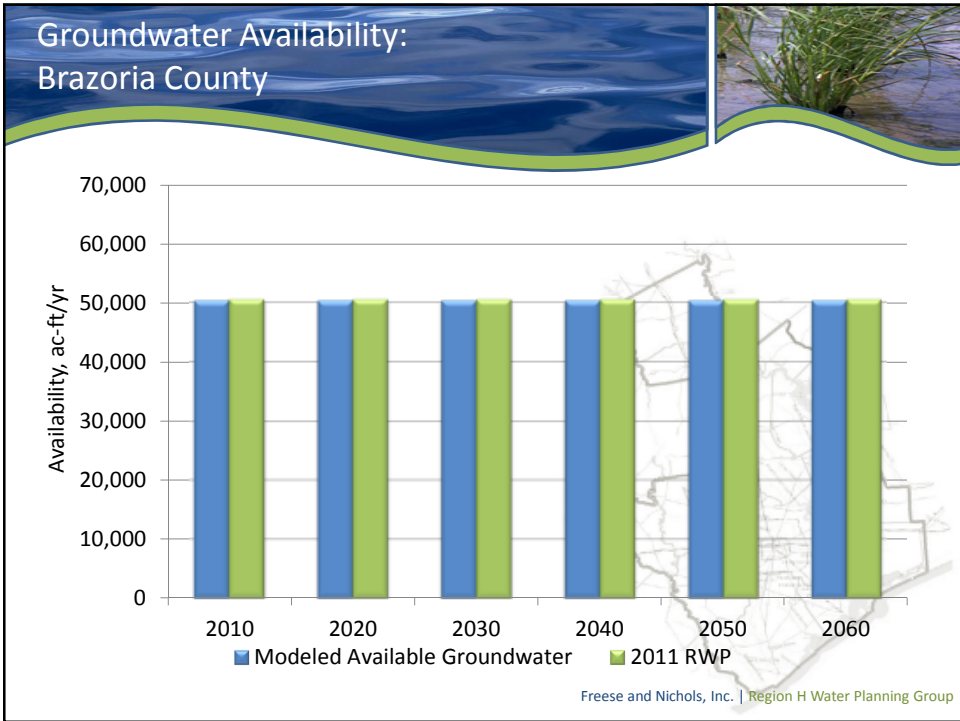
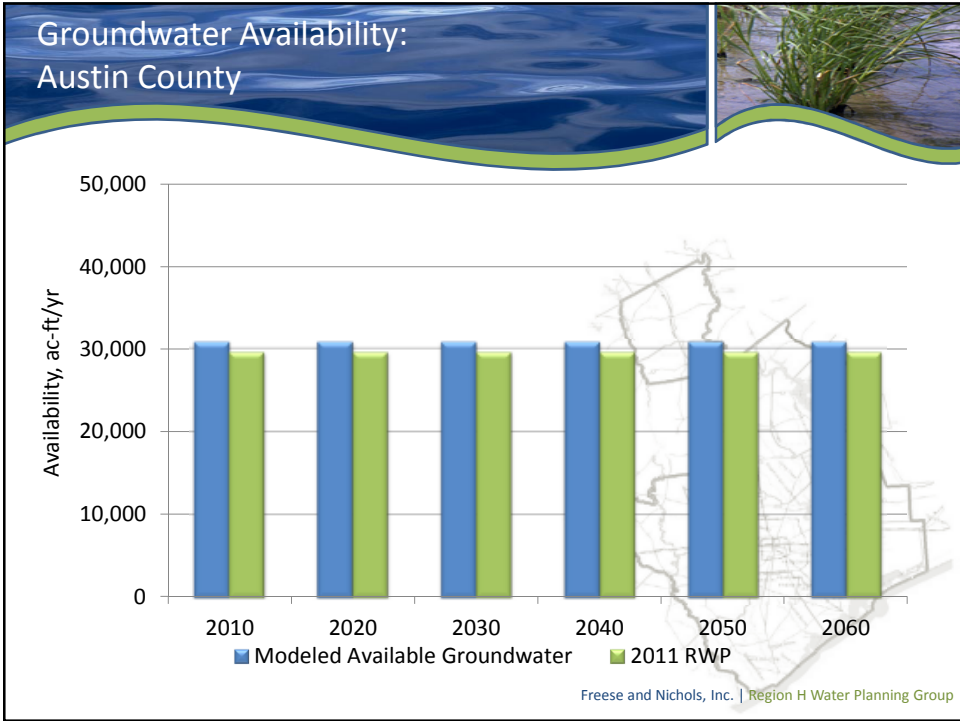
- 10 Counties in GMA-14
- Trinity County in GMA-11
- Leon and Madison Counties in GMA-12
- In 2060, 96 % of estimated groundwater availability is in GMA-14

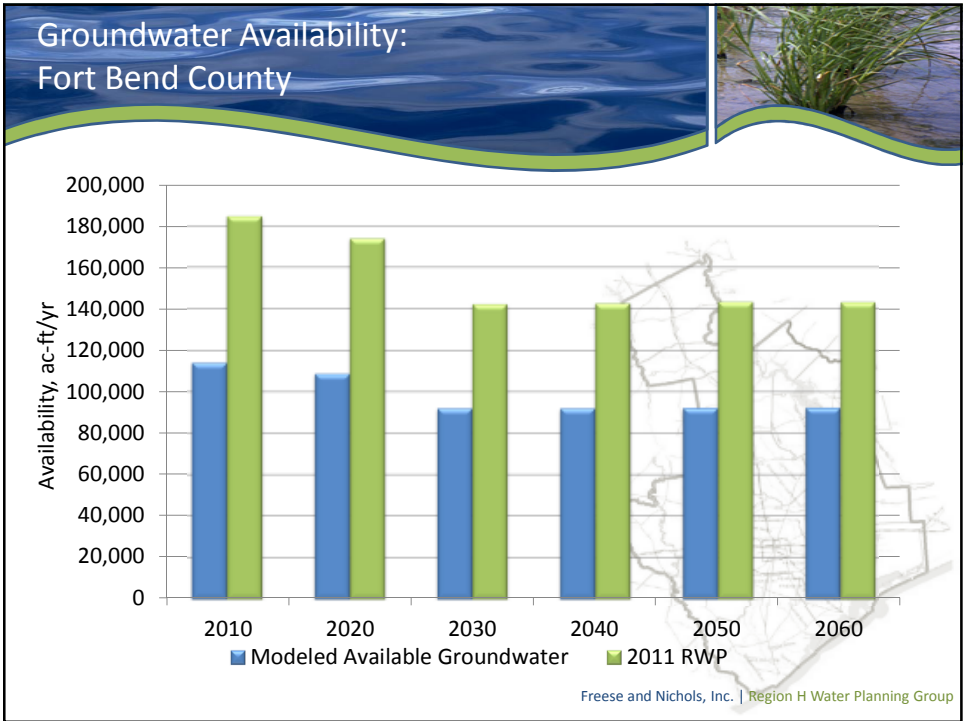
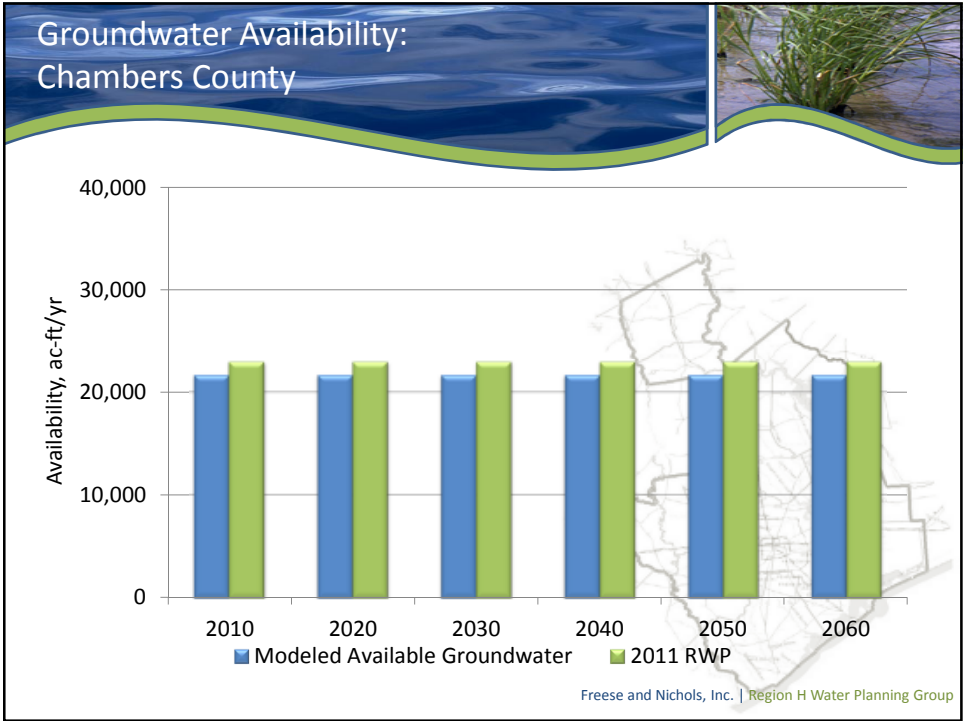
Freese and Nichols, Inc. | Region H Water Planning Group

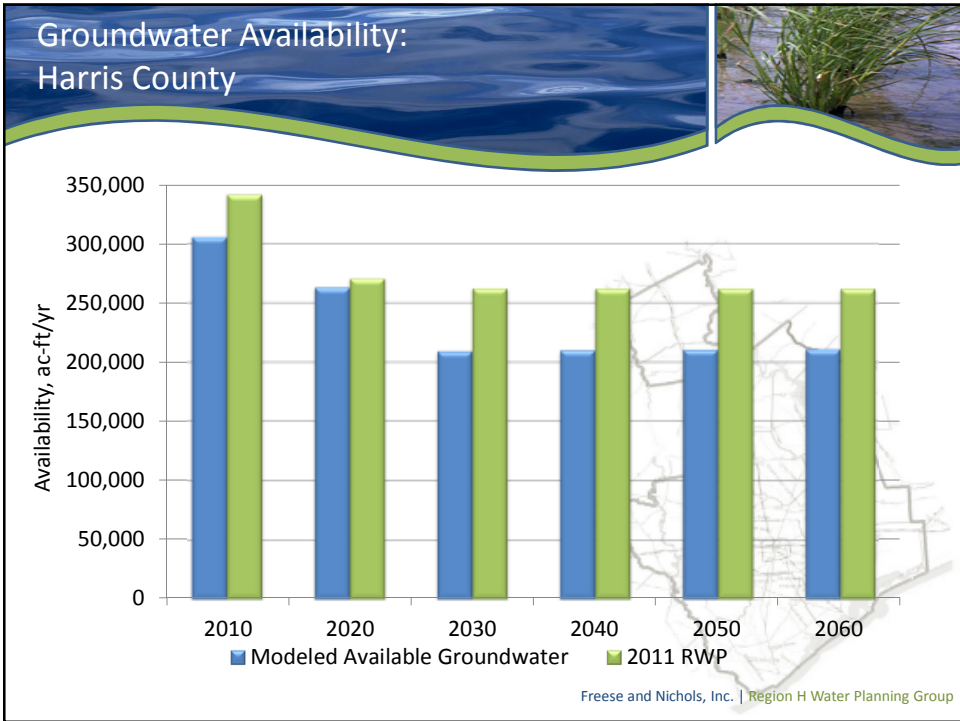
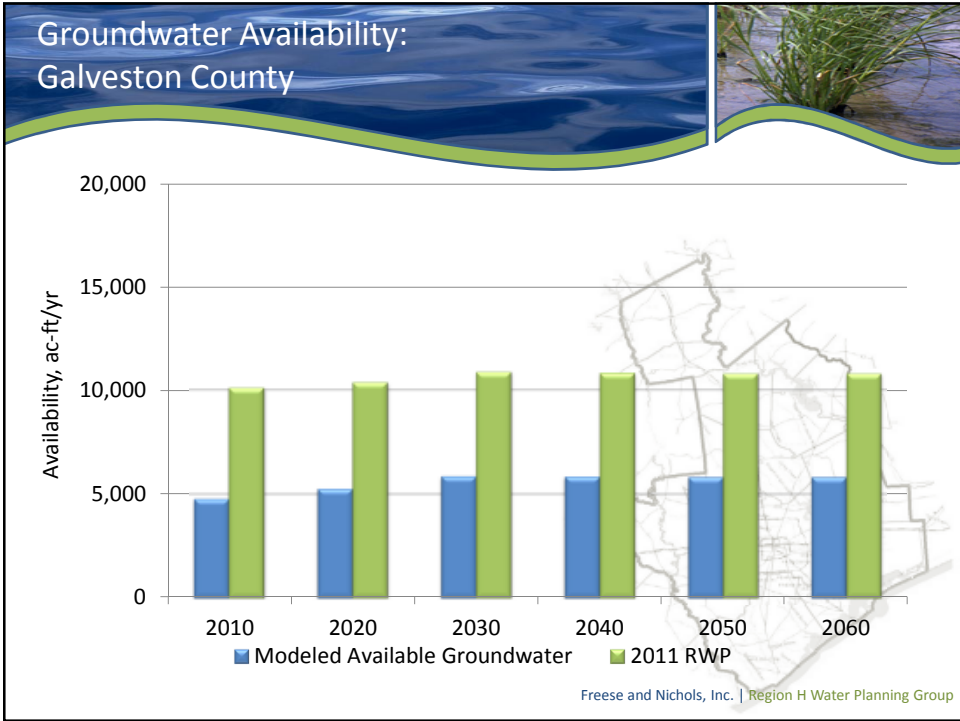
Groundwater Availability

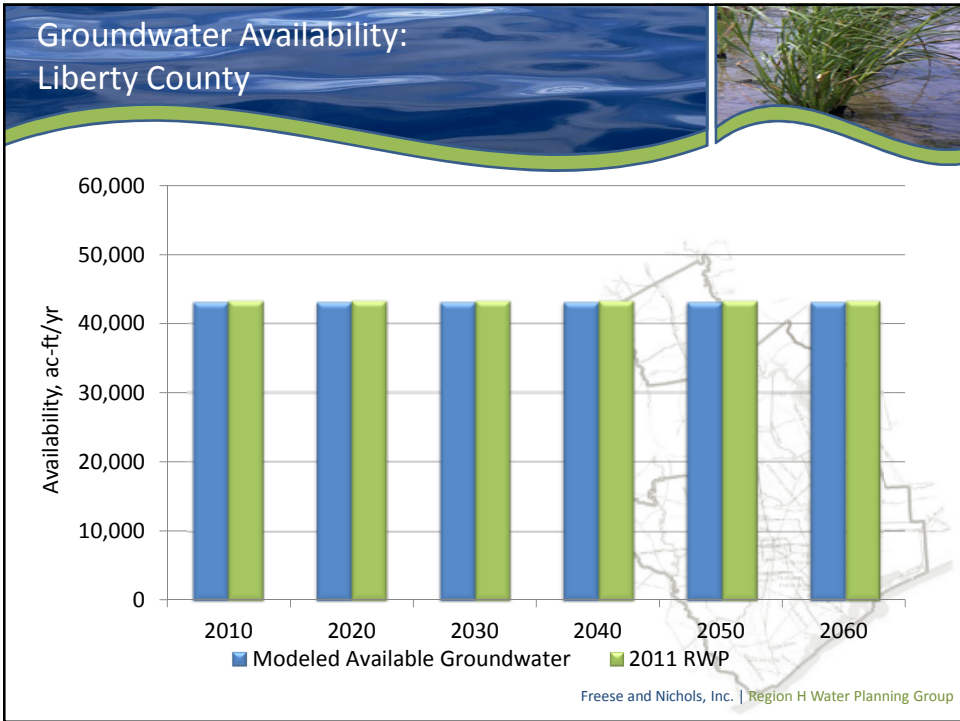
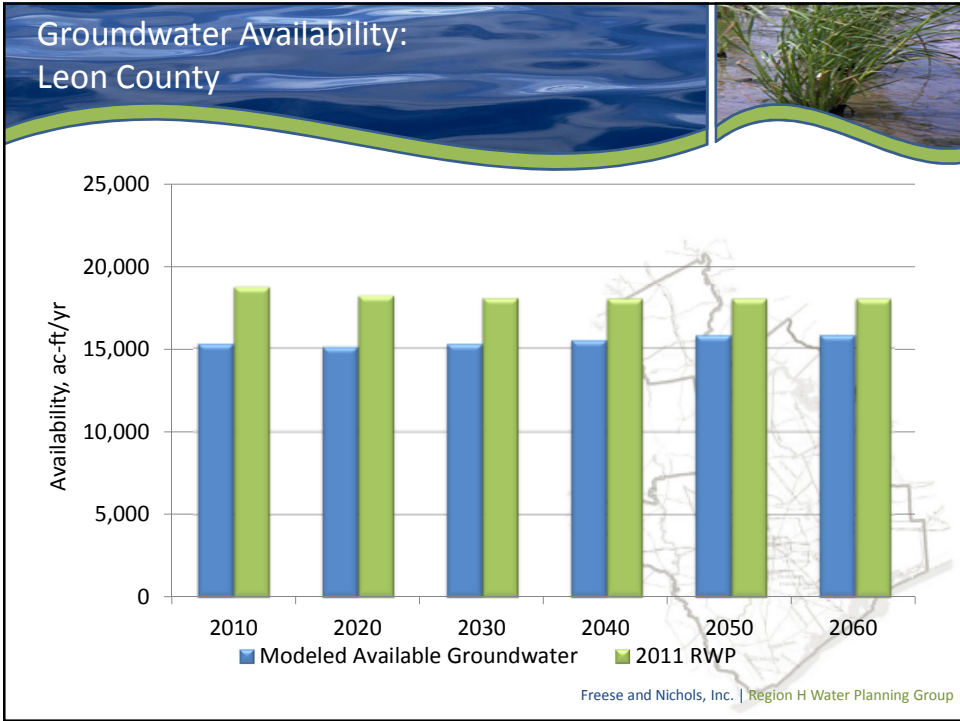
- 2001-2011 RWPs
 - Based on local data and regulation
- 2016 RWP
 - Based on Total Pumping or Modeled Available Groundwater (MAG)
 - Originated from GMA Process
 - GMAs adopted Desired Future Conditions (DFCs)
 - TWDB modeled aquifer characteristics to determine pumpage to achieve DFCs
 - Result is MAG for each county and aquifer

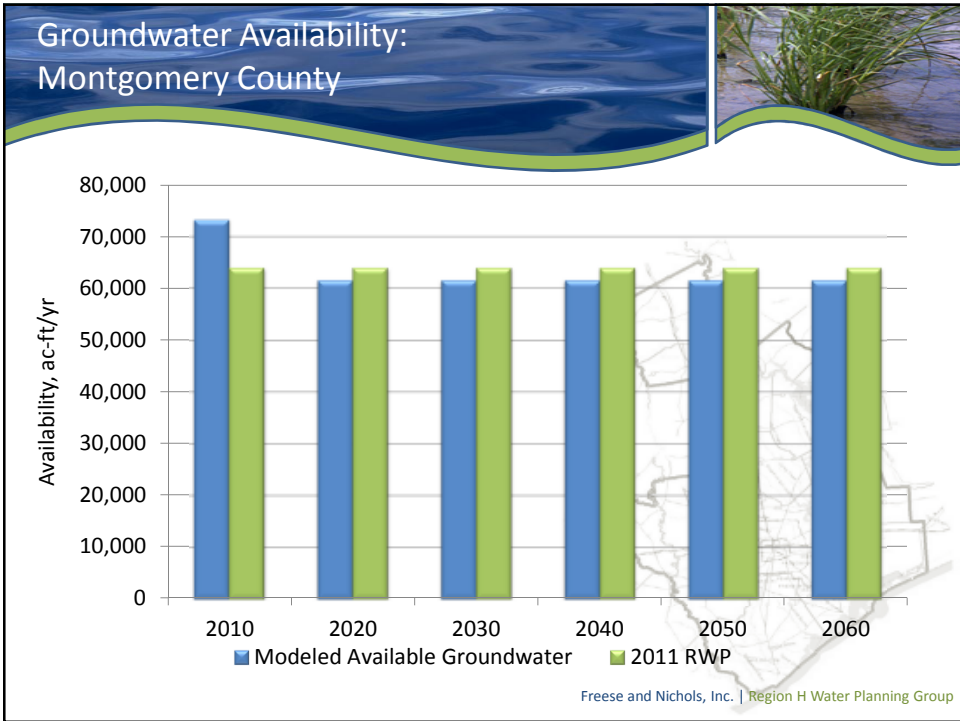
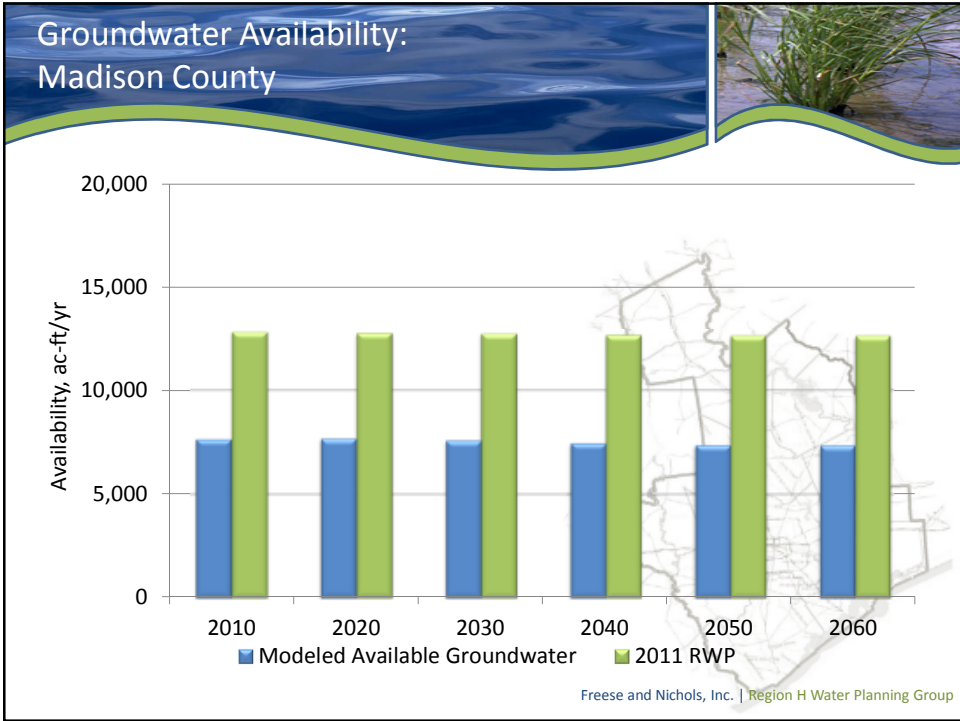
Freese and Nichols, Inc. | Region H Water Planning Group

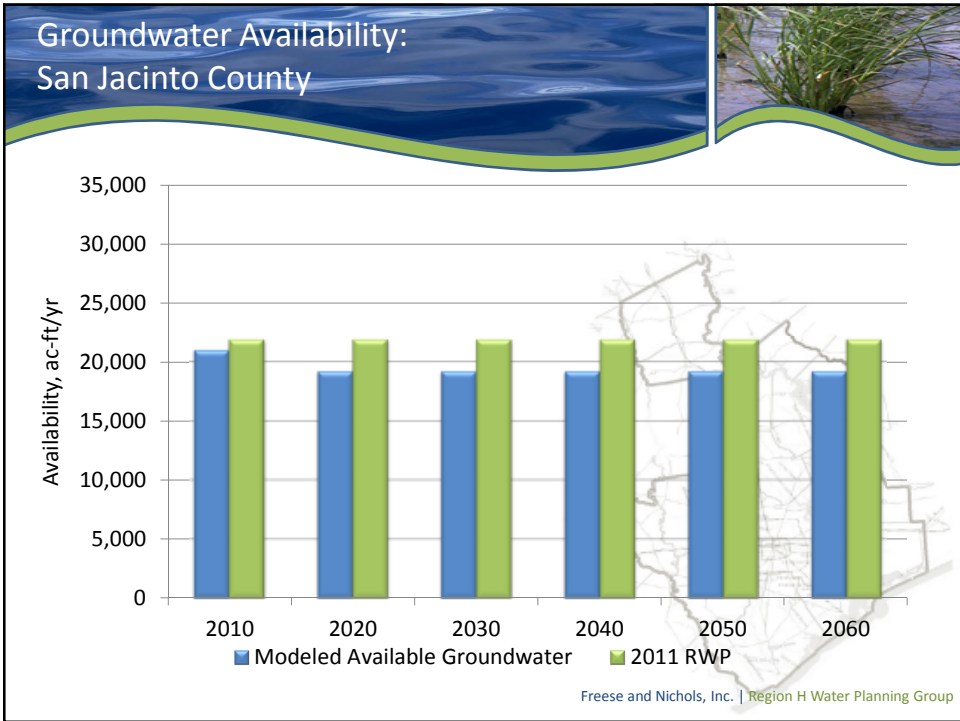
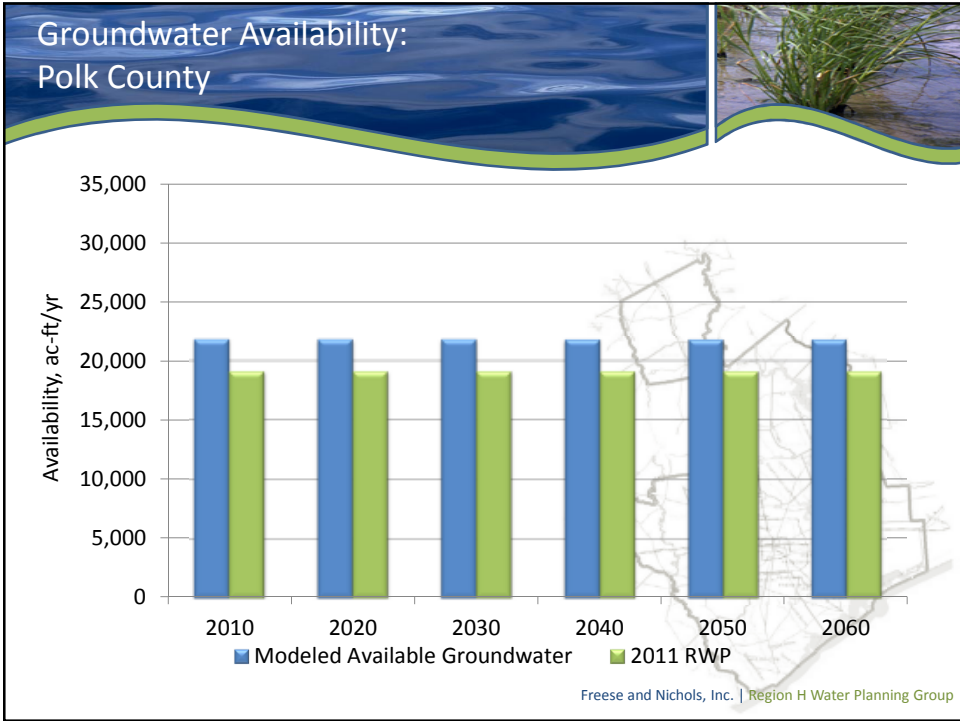


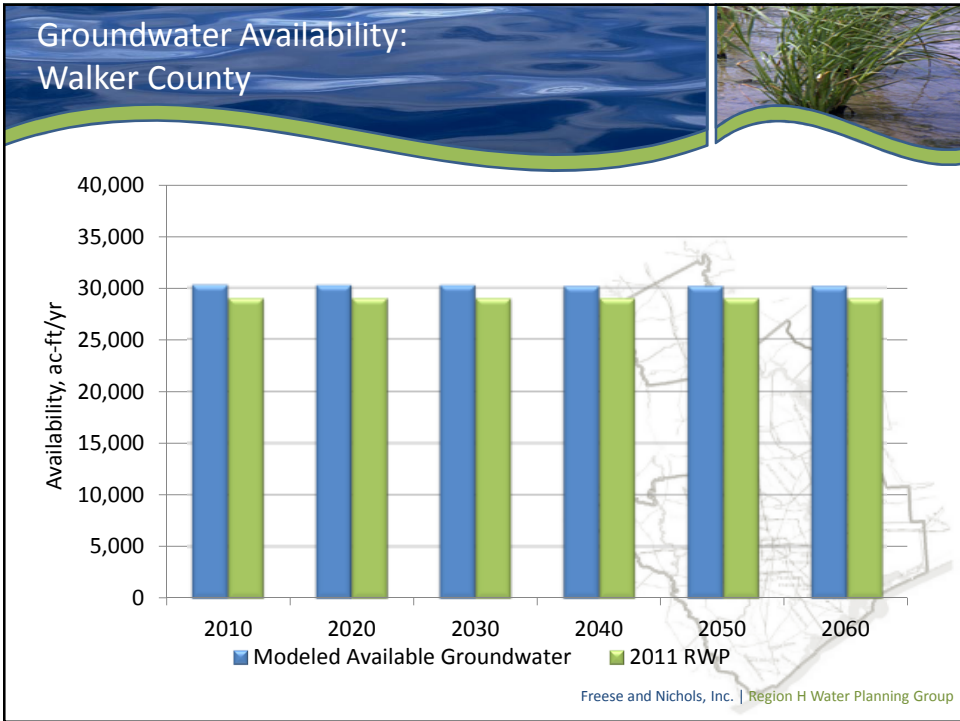
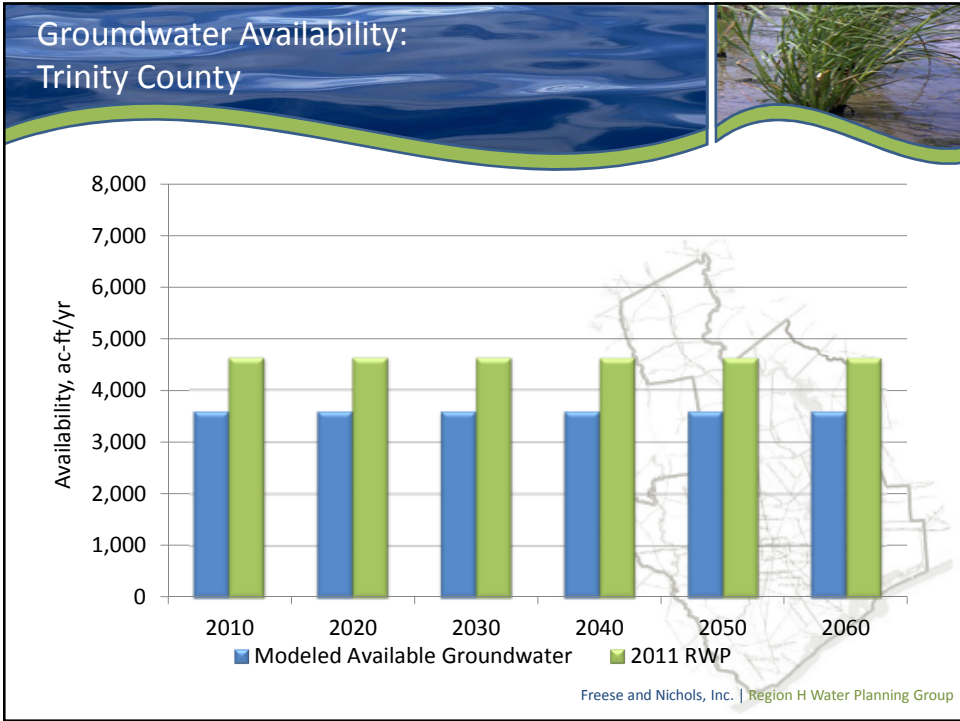




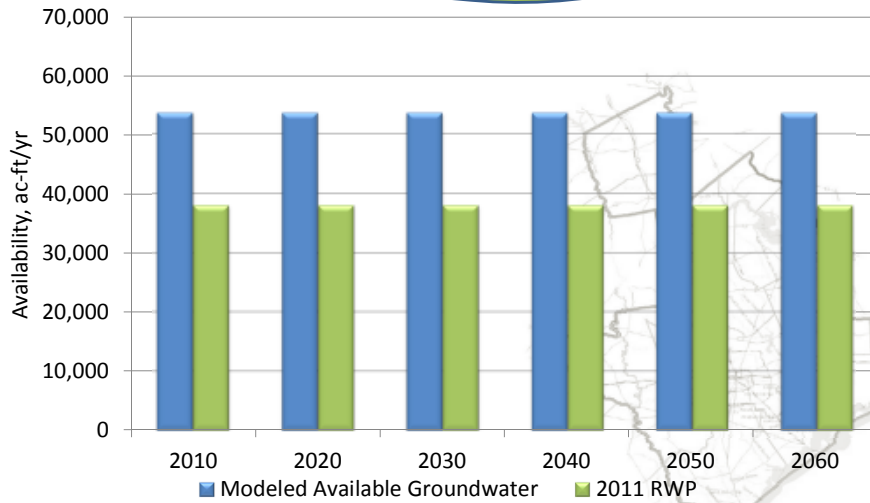








Groundwater Availability: Waller County

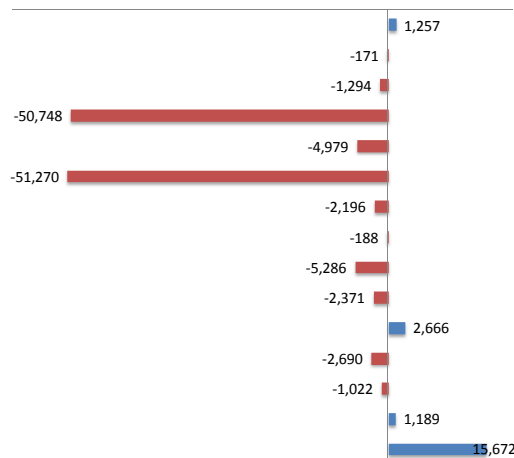


Freese and Nichols, Inc. | Region H Water Planning Group

Summary of County Groundwater Availability



MAG vs. 2011 RWP (ac-ft/yr difference)		
County	2020	2060
Austin	+1,257	+1,257
Brazoria	(171)	(171)
Chambers	(1,294)	(1,294)
Fort Bend	(65,310)	(50,748)
Galveston	(5,116)	(4,979)
Harris	(7,704)	(51,270)
Leon	(3,087)	(2,196)
Liberty	(188)	(188)
Madison	(5,099)	(5,286)
Montgomery	(2,371)	(2,371)
Polk	+2,713	+2,666
San Jacinto	(2,690)	(2,690)
Trinity	(1,030)	(1,022)
Walker	+1,265	+1,189
Waller	+15,672	+15,672
Totals	(73,153)	(101,431)



Freese and Nichols, Inc. | Region H Water Planning Group

Summary

- Most pronounced differences in MAG and 2011 RWP estimates of availability in three counties
- Differences in MAG and 2011 RWP estimates small to modest in other counties
- Amount of differences generally constant from 2020 to 2060
- Magnitude of difference between MAG and 2011 RWP estimates is ≈ 10 and 15% of overall availability in 2020 and 2060, respectively

Freese and Nichols, Inc. | Region H Water Planning Group

Issue of HGSD and FBSD in Region H

- Discrepancy between MAG and regulated groundwater supply
 - Available data during development of DFCs
 - Ongoing variation in population and water demand projections
- Update to District Regulatory Plan
 - Scheduled Completion in 2012
- Updates to Northern Gulf Coast GAM
 - Houston Area Groundwater Model (HAGM)

Freese and Nichols, Inc. | Region H Water Planning Group

Alternatives

- ~~Request an Exception from TWDB Rules~~
- ~~Proceed with MAG Availability~~
- Work Within the GMA Process to Amend DFCs

Process for Amending GMA 14 Desired Future Conditions

```

graph LR
    A[Complete water demand projections] --> B[Complete HAGM]
    B --> C[Complete updates to DRP]
    C --> D[Seek approval for use of HAGM]
    D --> E[Develop revised DFCs with GMA 14]
    E --> F[Incorporate revised MAGs into RWP process]
  
```

Freese and Nichols, Inc. | Region H Water Planning Group

Advantages

- Maintains consistency between Region H and GMA 14
- Sets schedule consistent with GMA and RWP processes
- Incorporates updated HAGM

Freese and Nichols, Inc. | Region H Water Planning Group

Path Forward

- ✓ Meet with GMA 14 to discuss issue with existing MAGs
- Prepare a revised schedule for implementation to GMA 14
- Present results of ongoing study to GMA 14

Freese and Nichols, Inc. | Region H Water Planning Group

Issues for Consideration



- Additional supplies

- Quantification of brackish groundwater supplies within Region H



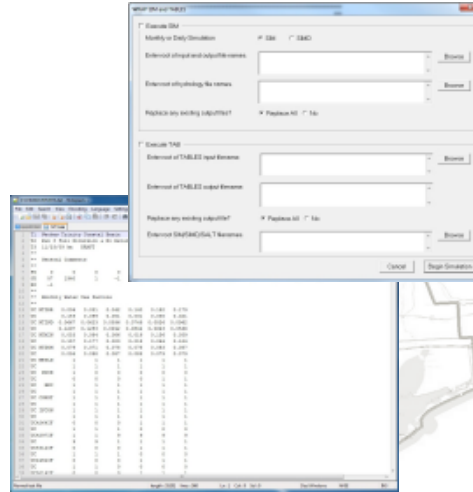
Freese and Nichols, Inc. | Region H Water Planning Group

Agenda Item 7

Receive update from Consultant Team and Surface Water Supply Subcommittee regarding draft surface water supply availability estimates for use in development of the 2016 Region H Regional Water Plan, including supplies originating from the Neches-Trinity, Trinity-San Jacinto, and Brazos-Colorado coastal basins.

Methodology - Overview

- TWDB requires use of WAM Run 3
- Simulate existing rights and infrastructure over naturalized conditions
- Allowances made for minor updates (new permits)
- Other exceptions require TWDB EA approval



Freese and Nichols, Inc. | Region H Water Planning Group

Methodology – Run-of-River Rights

- Firm Yield \approx Minimum Annual Diversion over modeled period
- Assumed constant through 2070
- Region H previously included yields above 500 ac-ft/yr
- Other regions combine smaller yields into “Combined Run-of-River” by county and use.

Freese and Nichols, Inc. | Region H Water Planning Group

Methodology – Reservoirs



- Uses WAM Run 3 with minor modifications
- Largest surface supply in region
- Firm Yield \approx Amount that can be met in all simulated years with NO shortage
- Iterative target adjustment

Freese and Nichols, Inc. | Region H Water Planning Group

Methodology – Reservoirs

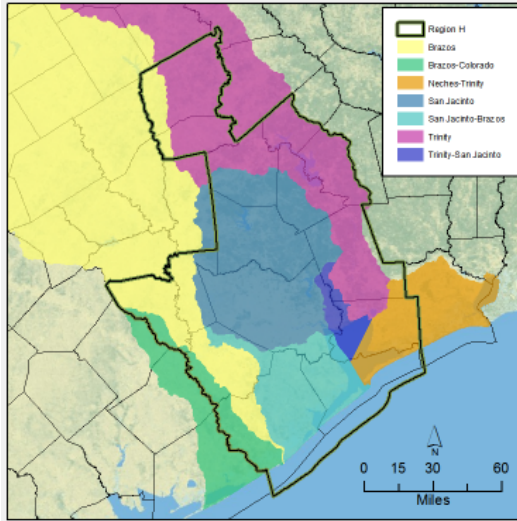


- Sedimentation significant over time
- Reservoirs adjusted for change in storage
- Iterated for current survey and 2070
- Assume linear decline in yield over time



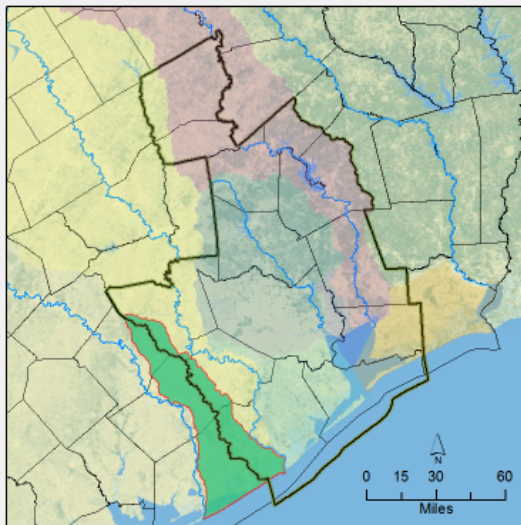
Freese and Nichols, Inc. | Region H Water Planning Group

Region H Surface Water River Basins



Freese and Nichols, Inc. | Region H Water Planning Group

Brazos-Colorado Coastal Basin



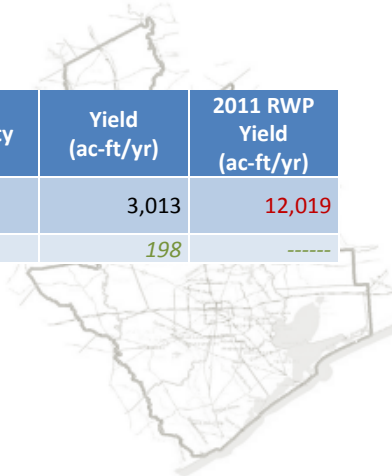
Freese and Nichols, Inc. | Region H Water Planning Group

Brazos-Colorado Coastal Basin: Run-of-River



Basin Total: 3,211 ac-ft/yr

Source	Source County	Yield (ac-ft/yr)	2011 RWP Yield (ac-ft/yr)
San Bernard River Industrial ROR	Brazoria	3,013	12,019
<i>Linnville Bayou Industrial ROR</i>	<i>Brazoria</i>	<i>198</i>	<i>-----</i>

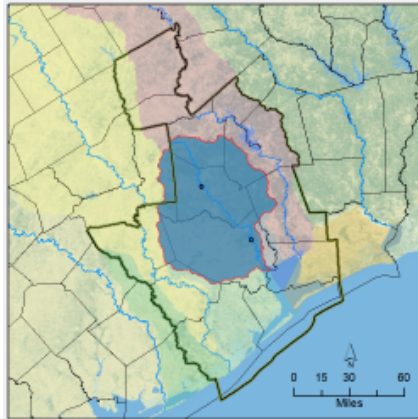


Brazos River Basin / San Jacinto Brazos Coastal Basin

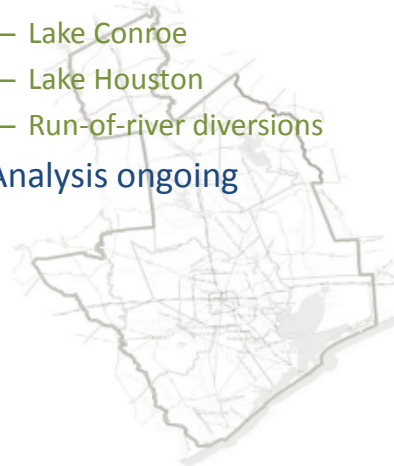


Pending availability of Region G model

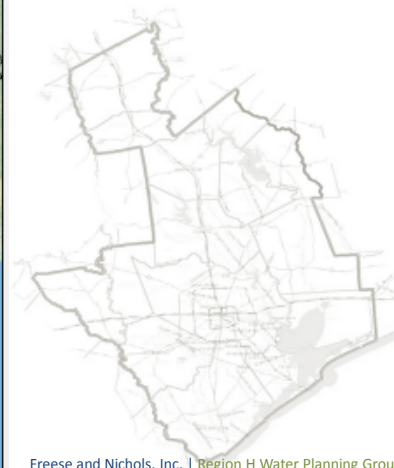
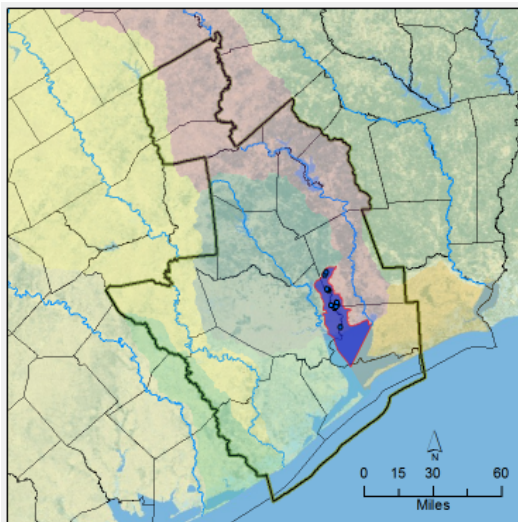
San Jacinto River Basin



- San Jacinto River Basin
 - Lake Conroe
 - Lake Houston
 - Run-of-river diversions
- Analysis ongoing



Trinity-San Jacinto Coastal Basin



Freese and Nichols, Inc. | Region H Water Planning Group

Trinity-San Jacinto Coastal Basin: Run-of-River

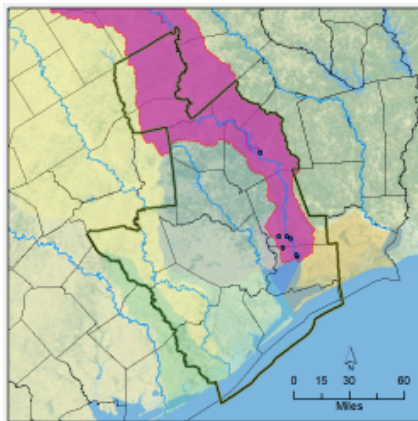


Basin Total: 35,316 ac-ft/yr

Source	Source County	Yield (ac-ft/yr)	2011 RWP Yield (ac-ft/yr)
Trinity-San Jacinto Irrigation ROR	Chambers	1,213	1,213
Cedar Bayou Industrial ROR	Chambers	30,000	30,000
Trinity-San Jacinto Irrigation ROR	Harris	1,355	1,355
<i>TSJ Combined Irrigation ROR</i>	<i>Harris</i>	<i>843</i>	<i>-----</i>
Trinity-San Jacinto Irrigation ROR	Liberty	1,745	1,745
<i>TSJ Combined Irrigation ROR</i>	<i>Liberty</i>	<i>160</i>	<i>-----</i>

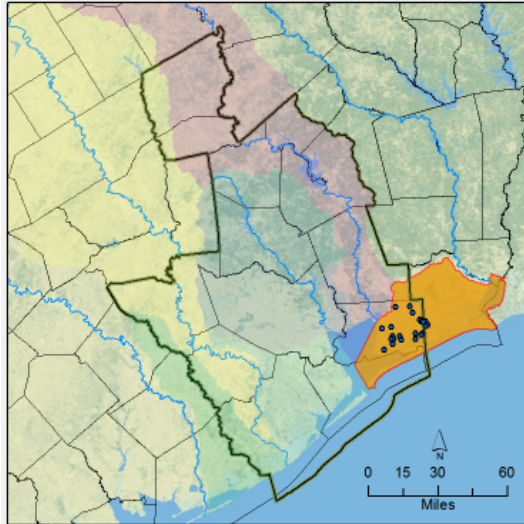
Freese and Nichols, Inc. | Region H Water Planning Group

Trinity River Basin



- Trinity River Basin
 - Livingston-Wallisville System
 - Run-of-river diversions
- Analysis ongoing

Neches-Trinity Coastal Basin



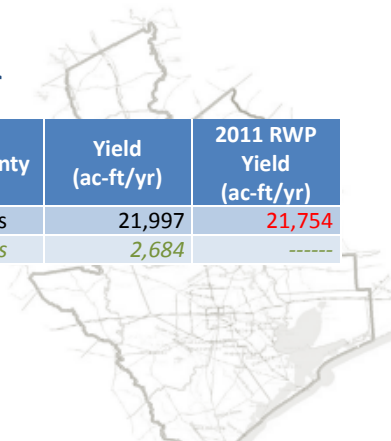
Freese and Nichols, Inc. | Region H Water Planning Group

Neches-Trinity Coastal Basin: Run-of-River



Basin Total: 24,681 ac-ft/yr

Source Name	Source County	Yield (ac-ft/yr)	2011 RWP Yield (ac-ft/yr)
Neches-Trinity River Irrigation ROR	Chambers	21,997	21,754
<i>NT Combined Irrigation ROR</i>	<i>Chambers</i>	<i>2,684</i>	<i>-----</i>



Freese and Nichols, Inc. | Region H Water Planning Group

Methodology – Local Supplies



- Primarily small ponds for livestock and mining
- In past, estimated as Year 2000 needs met without other known supplies
- This cycle, must be identified FIRM supplies
- Essentially eliminates these sources

2011 RWP Local Supply Availability (ac-ft/yr)					
Supply	2020	2030	2040	2050	2060
Livestock	4,075	4,538	4,592	4,683	4,834
Other Local*	27,061	27,061	27,061	27,061	27,061
Total	31,136	31,599	31,653	31,744	31,895

*23,711 ac-ft for Chambers County

Freese and Nichols, Inc. | Region H Water Planning Group

Agenda Item 8

Receive presentation from the Consultant Team and Water Management Strategy Subcommittee on the strategy selection process and criteria, preliminary list of alternatives for detailed analysis in the development of the 2016 Regional Water Plan, and development of a safety factor for the allocation of supplies and strategies to Water User Groups and take action as necessary.

Agenda Item 8

Receive presentation from the Consultant Team and Water Management Strategy Subcommittee on the strategy selection process and criteria, preliminary list of alternatives for detailed analysis in the development of the 2016 Regional Water Plan, and development of a safety factor for the allocation of supplies and strategies to Water User Groups and take action as necessary.

Agenda Item 8 Water Management Strategies



Receive presentation from the Consultant Team and Water Management Strategy Subcommittee on the strategy selection process and criteria, preliminary list of alternatives for detailed analysis in the development of the 2016 Regional Water Plan, and development of a safety factor for the allocation of supplies and strategies to Water User Groups and take action as necessary.

Freese and Nichols, Inc. | Region H Water Planning Group

WMS Committee Focus



- WMS Selection Process
- List of WMS for Study
- Safety Factor for Allocations

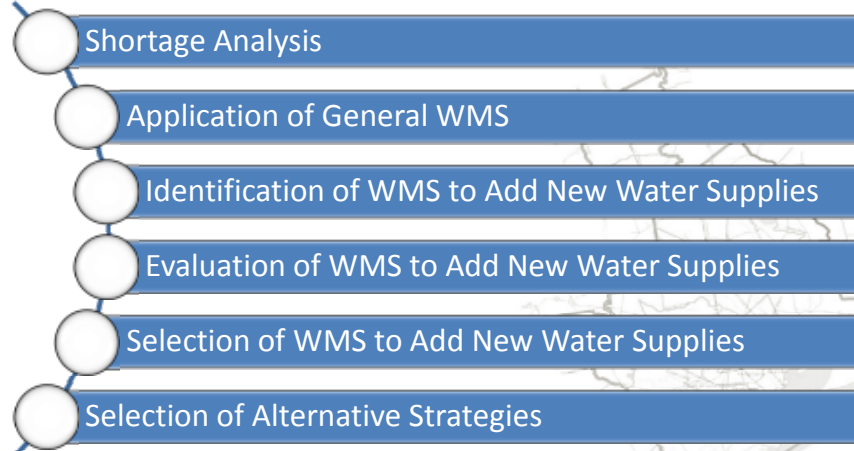
Freese and Nichols, Inc. | Region H Water Planning Group

WMS Selection Process Requirements

- TWDB allows RWPGs considerable flexibility in selecting method of identifying and selecting WMS
- Selection criteria determined by RWPG
- Group should receive public comment on proposed process
- Consideration to be given to TWDB Water Loss Audit Report

Freese and Nichols, Inc. | Region H Water Planning Group

2011 RWP - General Methodology



Freese and Nichols, Inc. | Region H Water Planning Group

2011 RWP – Potential WMS Identification



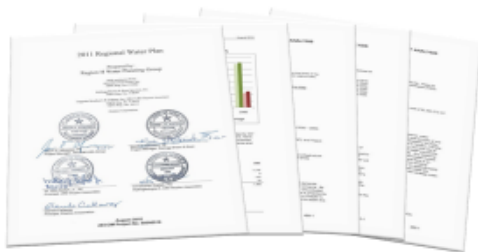
- Three methods of identification
 - Strategies from 2006 RWP (implemented/addl. study) considered potentially feasible
 - New strategies solicited during scope development
 - Request for inclusion by sponsoring entity
- Some strategies added later in process
 - Strategies not submitted / conceptualized early in cycle
 - New strategies to meet needs

Freese and Nichols, Inc. | Region H Water Planning Group

2011 RWP – Potential WMS Evaluation



- Key assumptions
 - Continue groundwater to max available
 - Municipalities utilize conservation before adding/expanding contracts
 - WUGs supplied by WVPs increase contracts till fully allocated



Freese and Nichols, Inc. | Region H Water Planning Group

2011 RWP – Potential WMS Evaluation



Category	Rating Criteria		
	-1	0	1
Cost	>\$200/ac-ft	<\$200/ac-ft	<\$100/ac-ft
Yield	Size is too small or too large for need	Size is flexible or meets needs	Size can be adjusted to optimum
Location	IBT required, long distance or outside Region H.	No IBT required. Conveyance required.	No IBT required. Relatively near demand.
Water Quality	Quality of supply is reduced.	No known water quality issues.	Existing water quality problems are reduced.
Environmental Land & Habitat	Significant environmental issues and opposition.	Environmental impacts can be mitigated. Limited concerns.	Limited or no known impacts.
Local Preference	No local support. Significant opposition.	Some local support. Limited opposition.	Widespread local support. Multi-use benefits likely.
Institutional Constraints / Risk of Implementability	Permits opposed. Significant property required.	Permits expected with minimal problems. Property available.	Permits issued. Facilities or land owned. Water available.
Impacts on Environmental Flows	Reduces instream or B&E flows.	No impact.	Increases instream or B&E flows.
Impacts on Other Management Strategies	Negative impact.	No impact.	Positive impact.

Freese and Nichols, Inc. | Region H Water Planning Group

Limitations on 2011 RWP Methodology



- Allowed unfeasibly expensive strategies for some categories of water users
- Required detailed consideration of projects already in development
 - Luce Bayou
 - GRPs being implemented
- Strategy ratings often not clear indicator of ability to meet need

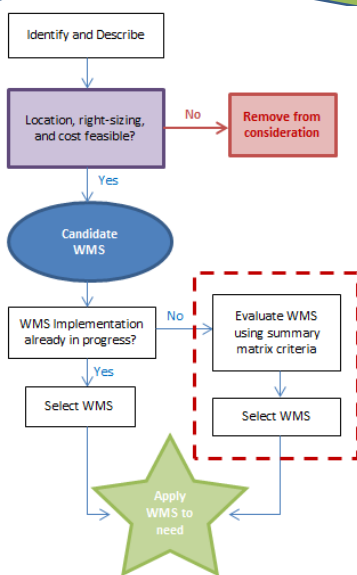
Freese and Nichols, Inc. | Region H Water Planning Group

Considerations for 2016 RWP

- Irrigation Needs
 - Determine current water rates for irrigation
 - Establish hard limit on supportable cost
- Projects in Development
 - Must still provide thorough description and evaluation
 - Prioritized selection to reflect reality

Freese and Nichols, Inc. | Region H Water Planning Group

Suggested Selection Approach for the 2016 RWP – Two Linked Processes

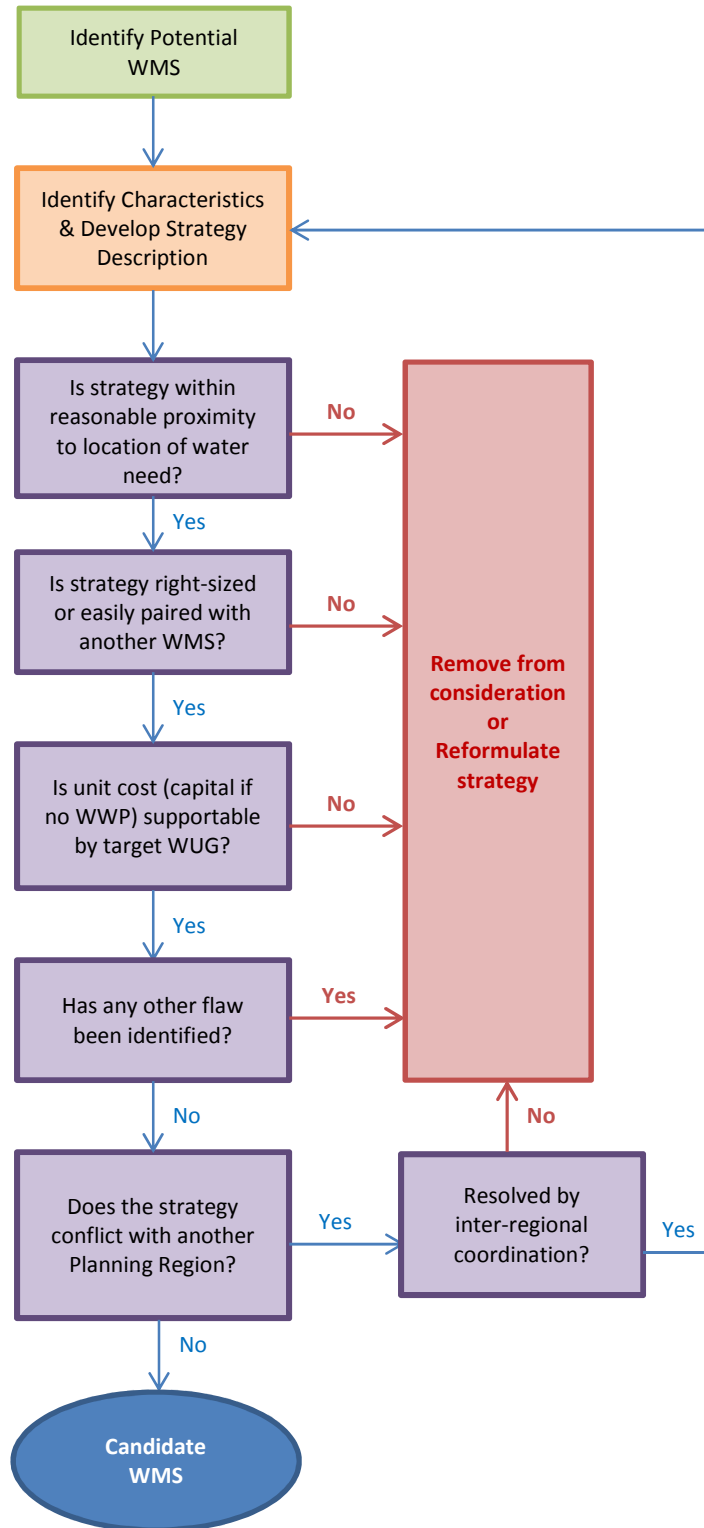


Evaluation Criteria

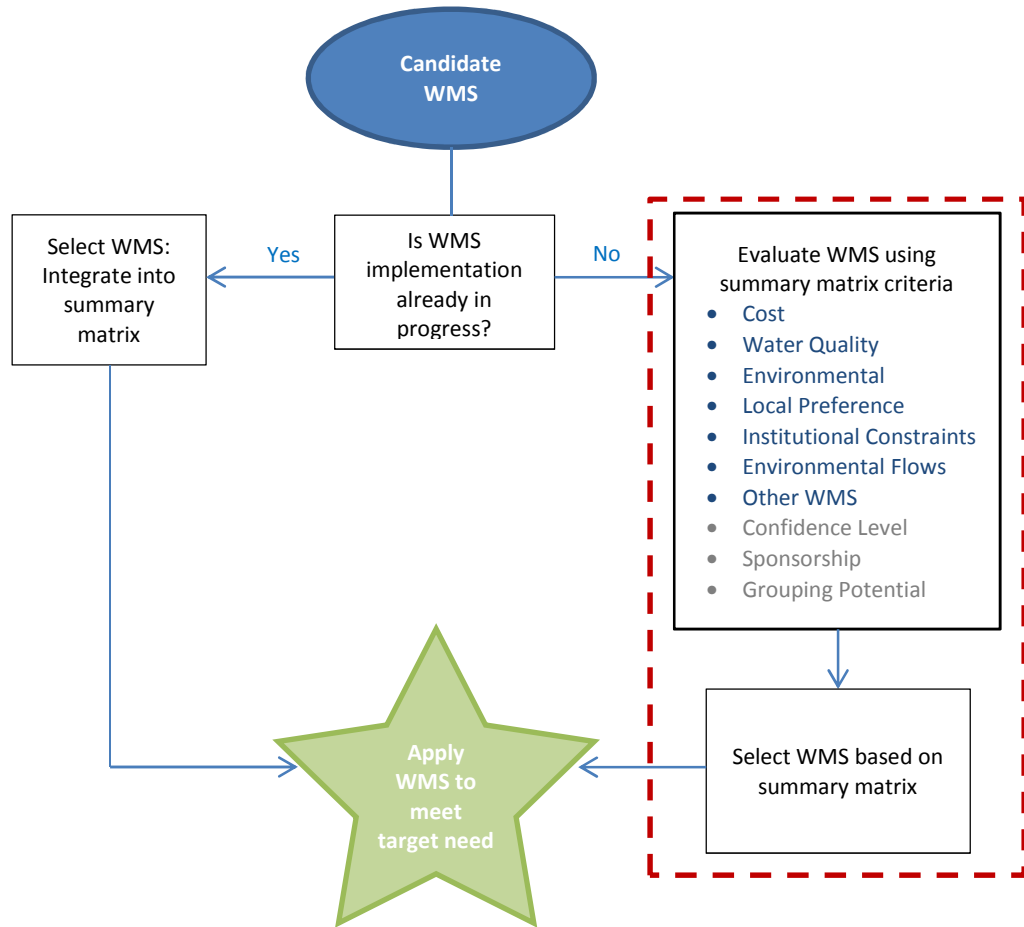
- Cost
- Water Quality
- Environmental
- Local Preference
- Institutional Constraints
- Environmental Flows
- Other WMS
- Confidence Level
- Sponsorship
- Grouping potential

Freese and Nichols, Inc. | Region H Water Planning Group

Water Management Strategies Selection Process, Step 1



Water Management Strategies Selection Process, Step 2



Evaluation Criteria Options: Retain Rating System from 2011 RWP



Water Management Strategy	Cost	Yield	Location	Water Quality	Environ.	Local Pref.	Org. Risk	E-Flows	Other WMS	Total of Factors
Municipal Conservation	0	1	1	0	0	1	1	0	1	5
TRA to Houston Contract	1	1	0	0	0	1	1	-1	0	3
Harris County MUD 50 SWTP	-1	1	1	0	0	1	0	-1	0	1
NHCRWA Transmission	0	0	1	0	0	1	0	0	0	2
NHCRWA Internal Distribution	-1	0	1	0	0	1	0	0	0	1
Allens Creek Reservoir	0	0	1	1	-1	1	0	-1	1	2
Millican Reservoir (Panther Creek Dam)	-1	0	-1	0	-1	0	-1	-1	0	-5
Sabine to Region H Transfer	0	1	-1	0	-1	-1	-1	-1	1	-3

Freese and Nichols, Inc. | Region H Water Planning Group

Evaluation Criteria Options: Positive Ratings



Water Management Strategy	Cost	Yield	Location	Water Quality	Environ.	Local Pref.	Org. Risk	E-Flows	Other WMS
Municipal Conservation	1	2	2	1	1	2	2	1	2
TRA to Houston Contract	2	2	1	1	1	2	2	0	1
Harris County MUD 50 SWTP	0	2	2	1	1	2	1	0	1
NHCRWA Transmission	1	1	2	1	1	2	1	1	1
NHCRWA Internal Distribution	0	1	2	1	1	2	1	1	1
Allens Creek Reservoir	1	1	2	2	0	2	1	0	2
Millican Reservoir (Panther Creek Dam)	0	1	0	1	0	1	0	0	1
Sabine to Region H Transfer	1	2	0	1	0	0	0	0	2

Freese and Nichols, Inc. | Region H Water Planning Group

Evaluation Criteria Options: Positive Ratings



Water Management Strategy	Cost	Yield	Location	Water Quality	Environ.	Local Pref.	Org. Risk	E-Flows	Other WMS
Municipal Conservation	3	3	5	3	3	5	5	3	5
TRA to Houston Contract	5	3	3	3	3	4	4	1	3
Harris County MUD 50 SWTP	2	1	5	3	3	4	3	1	3
NHCRWA Transmission	4	1	5	3	3	4	3	3	3
NHCRWA Internal Distribution	4	1	5	3	3	4	3	3	3
Allens Creek Reservoir	4	2	5	5	3	5	3	1	5
Millican Reservoir (Panther Creek Dam)	2	4	1	3	3	1	1	1	3
Sabine to Region H Transfer	3	5	1	3	3	3	1	1	5

Freese and Nichols, Inc. | Region H Water Planning Group

Evaluation Criteria Options: Non-Numerical Ratings



Water Management Strategy	Cost	Yield	Location	Water Quality	Environ.	Local Pref.	Org. Risk	E-Flows	Other WMS
Municipal Conservation	▲	●	●	▲	▲	●	●	▲	●
TRA to Houston Contract	●	●	▲	▲	▲	●	●	◆	▲
Harris County MUD 50 SWTP	◆	●	●	▲	▲	●	▲	◆	▲
NHCRWA Transmission	▲	▲	●	▲	▲	●	▲	▲	▲
NHCRWA Internal Distribution	◆	▲	●	▲	▲	●	▲	▲	▲
Allens Creek Reservoir	▲	▲	●	●	◆	●	▲	◆	●
Millican Reservoir (Panther Creek Dam)	◆	▲	◆	▲	◆	▲	◆	◆	▲
Sabine to Region H Transfer	▲	●	◆	▲	◆	◆	◆	◆	●

Freese and Nichols, Inc. | Region H Water Planning Group

Strategy Evaluation Discussion



- Revised approach for selection
 - Primary feasibility assessment and relative evaluation as two linked processes
- Cost limits
- Evaluation matrix
 - New criteria
 - Weighting factors
 - Rating system
- Continue discussion with committee

Freese and Nichols, Inc. | Region H Water Planning Group

Potential Water Management Strategies



- Technical Memorandum must include list of potentially feasible strategies
- Limited evaluation
- Multiple potential sources
 - Prior RWPs
 - Sponsor input
 - Other Regions
 - RWPG suggestions
 - New strategies

Freese and Nichols, Inc. | Region H Water Planning Group

Potential Water Management Strategies List

Strategies from the 2011 RWP

- Conservation
 - Municipal
 - Industrial
 - Irrigation
- Groundwater Strategies
 - Expanded Use of Groundwater
 - New Groundwater Wells for Livestock
- Contractual Transfers
 - TRA to COH
 - TRA to SJRA
 - Expand/Increase Current Contracts
 - New Contracts from Existing Supply
 - Reallocation of Existing Supply
 - WUG-Level Contracts
 - WWP-Level Contracts
- Groundwater Reduction Plans
 - CHCRWA
 - City of Houston
 - City of Missouri City
 - City of Sugar Land
 - Fort Bend MUD 25
 - Fort Bend WCID 2
 - Montgomery County
 - NFBWA
 - NHCRWA
 - Pecan Grove
 - Richmond/Rosenberg
 - River Plantation
 - WHCRWA
- Surface Water Systems
 - CLCND West Chambers County System

- Interbasin Transfers
 - Luce Bayou
 - Sabine to Region H
- Reservoirs
 - Allens Creek
 - Brazoria County OCR
 - Dow Off-Channel
 - Fort Bend County OCR
 - GCWA Off-Channel
 - Little River Off-Channel
- Other Potential Reservoirs
 - Bedias
 - Little River
 - Lower Lake Creek
 - Millican (Bundic)
 - Millican (Panther Creek)
 - Tehuacana
 - Tennessee Colony
 - Caney
 - Cleveland
 - Harmons
 - Humble
 - Hurrican Bayou
 - Long King
 - Upper Keechie
 - Lower Keechie
 - Mustang
 - Nelsons
 - Spring Creek
- Surface Water Supply Development
 - BRA System Operations Permit

- Reuse Strategies
 - City of Fulshear Reuse
 - City of Houston Indirect Reuse
 - Montgomery County MUDs 8 and 9 Reuse
 - NHCRWA Indirect Reuse
 - Wastewater Reclamation for Industry
 - Wastewater Reclamation for Municipal Irrigation
- Facilities Strategies
 - CHCRWA Transmission
 - CHCRWA Internal Distribution
 - COH Treatment Expansion
 - COH Regional Distribution Expansion
 - Huntsville WTP
 - Harris County MUD 50 WTP
 - LLWSSSC Surface Water Project
 - NFBWA Transmission
 - NFBWA Internal Distribution
 - NHCRWA Transmission
 - Pearland SWTP
 - Sealy Treatment Expansion
 - WHCRWA Transmission
 - WHCRWA Internal Distribution
- Other Strategies
 - Brazos Saltwater Barrier
 - Seawater Desalination
 - Montgomery County MUDs 8 and 9 Brackish Groundwater Desalination

New Strategies for Consideration in the 2016 RWP

- Regional Return Flows Permit
- Brackish Groundwater
- Trinity Basin Reuse from Region C
- Trinity or San Jacinto to Brazos River Basin Transfer
- Enhanced Industrial Reuse
- Houston Indirect Wastewater Reuse Development
- Regional Transmission Strategies
- Alternative Supplies for Non-Potable Demands
- Montgomery County Reservoirs
- Drought Management

Preliminary Alternatives List



- Additions to the list?
- Items to be removed from consideration?



Freese and Nichols, Inc. | Region H Water Planning Group

Safety Factor for Supply Allocation



“To address uncertainty in the planning and project implementation process over the current planning horizon and/or to address potential water needs beyond the planning horizon, RWPGs may incorporate a water supply safety factor (beyond just meeting identified water needs) for WUGs and WWP when developing the regional water plan.”

- Final surpluses low in 2011 RWP – little factor of safety in WMS selection/allocation
- Current Planning rules allow for safety factor
- Should 2016 WMS selection include buffer?
- If so, to what extent?

Freese and Nichols, Inc. | Region H Water Planning Group

Agenda Item 9

Consider and take action on authorizing the Consultant Team to develop a scope of services and budget estimate for accelerated funding under Task 4D of the 2016 Regional Water Plan.

Task 4D Schedule Acceleration



Task 4D

- Intended as preliminary funds for WMS development
 - \$225,604 currently allocated
- Not yet authorized
 - Requires development of scope and budget under Task 4C (Prepare and submit technical memorandum)
- Opportunity for advanced access to funds
 - Fast-track analysis of critical projects
 - Development of proposed scope and fee
 - Submittal to TWDB

Freese and Nichols, Inc. | Region H Water Planning Group

Task 4D Schedule Acceleration



- Receive RWPG approval at a regular meeting
- Prepare a form detailing:
 - Task title
 - Scope of work
 - Deliverable
 - Budget
 - History of study
- Submit formal request to TWDB
 - Include justification for accelerated development
- TWDB staff review and scope recommendation
- TWDB considers amendment to contract
 - 2-month approval process?

Freese and Nichols, Inc. | Region H Water Planning Group

Task 4D Schedule Acceleration



Date	Event Type	Scheduled Tasks
05/2012	RWPG Meeting	Review available supplies Consider approval to develop Task 4D Scope and Budget for submittal Consider WMS selection methodology
06/2012	RWPG Meeting	Review available supplies Approve WMS selection methodology Review Task 4D Scope and Budget and authorize submittal to TWDB
08/2012	RWPG Meeting	Review Population Demands
11/2012	RWPG Meeting	Review Water Needs and WMS
02/2013	RWPG Meeting	Approve Technical Memorandum
2/28/2013	Due Date	Technical Memorandum to TWDB
02/2013-05/2013	Contract Amendment	TWDB amends contracts with additional funding and scope including notice-to-proceed on all 4D items (non-accelerated)
03/01/2015	Due Date	Initially Prepared Plan to TWDB
09/01/2015	Due Date	Final Plan Adoption

Freese and Nichols, Inc. | Region H Water Planning Group

Task 4D Schedule Acceleration: Discussion



- Need for acceleration of the evaluation process
- Projects with a limited level of existing study
 - Montgomery County Reservoirs
 - Regional Return Flows
 - Brackish Desalination
 - Houston Indirect Reuse
- Projects requiring near-term implementation in the 2011 RWP
 - Allens Creek

Freese and Nichols, Inc. | Region H Water Planning Group

Agenda Item 10

Receive report regarding recent and upcoming activities related to communications and outreach efforts on behalf of the Region H Planning Group.

Agenda Item 10 Community Outreach



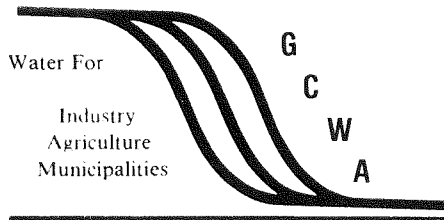
- **Houston Land Water Sustainability Forum**
March 27, 2012
- **GMA 14 Meeting**
April 25, 2012
- **Brazoria County Petrochemical Council**
May 17, 2012
- **Deer Park CAC**
June 4, 2012
- **Brazoria County EDA**
July 9, 2012



Freese and Nichols, Inc. | Region H Water Planning Group

Agenda Item 11

Agency communications and general information.



GULF COAST WATER AUTHORITY

3630 Highway 1765

Texas City, Texas 77591

409-935-2438

281-337-3403

FAX 409-935-4156

March 28, 2012

Mr. Mark Evans, Chairman
Region H Water Planning Group
c/o San Jacinto River Authority
1577 Dam Site Road
Conroe, TX 77304

Re: Gulf Coast Water Authority representation

Dear Chairman Evans,

Please be advised, that by the unanimous vote of the nine-member Board of Directors of the Gulf Coast Water Authority at their March 15, 2012 regular meeting, Mr. Robert Istre no longer represents the interests of the Gulf Coast Water Authority. Further, the GCWA Board of Directors respectfully asked that an appointment be made that will insure the interests of Galveston County's municipal, industrial, and agricultural water users are fully represented before the Region H Water Planning Group.

Respectfully submitted,

A handwritten signature in black ink that reads 'R.C. Williams'.

R.C. Williams, President

1500 West Highway 6

Alvin, Texas 77511

CANAL DIVISION

281-331-3137

Fax 281-331-3228

4001 5th Avenue North

Texas City, Texas 77591

WATER TREATMENT PLANT

409-948-6415

Fax 409-943-4522