Texas Water Development Board

P.O. Box 13231, 1700 N. Congress Ave.
Austin, TX 78711-3231, www.twdb.texas.gov
Phone (512) 463-7847, Fax (512) 475-2053

TO: Board Members

THROUGH: Kevin Patteson, Executive Administrator
Les Trobman, General Counsel
Jeff Walker, Deputy Executive Administrator, Water Supply & Infrastructure

FROM: Matt Nelson, Director, Water Use Projections & Planning

DATE: January 9, 2015

SUBJECT: Consider amending the 2012 State Water Plan to incorporate amendments to the 2011 Region H and 2011 Region L Regional Water Plans relating to the addition of recommended water management strategies for groundwater desalination and surface water treatment, and seawater desalination, respectively.

ACTION REQUESTED

Consider public comments received at a public hearing to be held January 28, 2015 and, if appropriate, amend the 2012 State Water Plan, in accordance with 31 TAC §358.4(a).

BACKGROUND

At the December 11, 2014 meeting, the Texas Water Development Board (Board) approved amendments to the 2011 Region H Regional Water Plan (Attachment 1) and the 2011 Region L Regional Water Plan (Attachment 2). The Region H minor amendment added recommended water management strategies of brackish groundwater desalination and water plant expansion for the Brazosport Water Authority and its customers. The groundwater desalination strategy would provide 3,136 acre-feet per year from 2020 through 2060 at a capital cost of $30.6 million. The water plant expansion strategy would process up to 8,400 acre-feet per year from 2020 through 2060 at a capital cost of $14.3 million. The Region L minor amendment added a recommended water management strategy of seawater desalination for the Guadalupe-Blanco River Authority in Calhoun and Gonzales Counties. This recommended strategy would provide 100,000 acre-feet per year from 2020 through 2060 at a capital cost of $1.28 billion.

Our Mission

To provide leadership, information, education, and support for planning, financial assistance, and outreach for the conservation and responsible development of water for Texas

Board Members

Carlos Rubinstein, Chairman | Bech Bruun, Member | Kathleen Jackson, Member

Kevin Patteson, Executive Administrator

KEY ISSUES

1. The amendment to the 2012 State Water Plan being recommended is to incorporate the amendments to the 2011 Region H and 2011 Region L Regional Water Plans that were approved by the Board on December 11, 2014. These changes are summarized in Attachment 3.
2. A public hearing on amending the 2012 State Water Plan, as required by 31 TAC §358.4(a), is scheduled for January 28, 2015.
3. If approved, this second amendment to the 2012 State Water Plan will be incorporated into the 2012 State Water Plan as Amendment No. 2 as shown in Attachment 3.

RECOMMENDATION

The Executive Administrator recommends approval of this item.

This recommendation has been reviewed by legal counsel and complies with applicable statutes and TWDB rules.

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Les Trobman, General Counsel

Attachments:

1. November 21, 2014 Board Item regarding approval of a minor amendment to the 2011 Region H Regional Water Plan.
2. November 21, 2014 Board Item regarding approval of a minor amendment to the 2011 Region L Regional Water Plan.
3. Water for Texas 2012: Amendment #2

ATTACHMENT 1

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TO: Board Members

THROUGH: Kevin Patteson, Executive Administrator
Les Trobman, General Counsel
Jeff Walker, Deputy Executive Administrator, Water Supply & Infrastructure

FROM: Temple McKinnon, Manager, Regional Water Planning

DATE: November 21, 2014

SUBJECT: Consider approving the adopted Minor Amendment to the 2011 Region H Regional Water Plan, relating to Recommended Brackish Groundwater Desalination and Plant Expansion Water Management Strategies; and authorizing the Executive Administrator to post notice for a public hearing for an associated amendment to the 2012 State Water Plan.

ACTION REQUESTED

Approve the adopted minor amendment to the 2011 Region H Regional Water Plan; and, authorize the Executive Administrator (EA) to develop the corresponding minor amendment to the 2012 State Water Plan, with associated public hearing, as appropriate per 31 TAC §357.51(f).

BACKGROUND

At the August 6, 2014 meeting of the Region H Regional Water Planning Group (Group), the Group approved requesting a minor amendment determination from the EA for a Brackish Groundwater Desalination and (Water) Plant Expansion water management strategy (WMS). This action was documented in a letter received August 8, 2014.

The brackish groundwater desalination and separate plant expansion WMS are projects to be sponsored by the Brazosport Water Authority (BWA). The desalination strategy has an online date of 2020 and is to provide up to 3,136 acre-feet of water per year through 2070 to BWA's municipal, manufacturing, mining, and steam-electric power generation customers (Phase I & II). The capital cost associated with the desalination strategy is $30.6 million. The BWA treatment expansion strategy has an online date of 2020 and is to process up to 7.4 MGD (8,400 acre-feet) of treated water per year through 2070. This facility will treat water from existing surface water sources already planned for in the 2011 Region H Regional Water Plan. The cost associated with this strategy is $14.3 million.

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The EA made a determination (Attachment A) that adding BWA's Brackish Groundwater Desalination and Plant Expansion as recommended WMSs constitutes a minor amendment under 31 TAC §357.51(c), based on the amendment having met the following criteria:

1. Does not result in over-allocation of an existing or planned source of water;
2. Does not relate to a new reservoir;
3. Does not have a significant effect on instream flows, environmental flows or freshwater flows to bays and estuaries;
4. Does not have a significant substantive impact on water planning or previously adopted management strategies; and,
5. Does not delete or change any legal requirements of the plan.

The EA provided a written response to the Region H Regional Water Planning Group with a minor amendment determination on September 5, 2014; and Region H adopted the minor amendment at their November 5, 2014 meeting. Following this adoption, a two-week public comment period was held and no public comments were received. No revision to the proposed minor amendment was found to be necessary by the Regional Water Planning Group.

KEY ISSUES

1. The Region H Regional Water Planning Group submitted to the TWDB on November 20, 2014, the required written documentation of their adopted minor amendment, including an addendum to the current 2011 Region H Water Plan (Attachment B).
2. The EA has reviewed the adopted amendment and determined that statutory and rule requirements have been met.
3. If approved, an associated amendment to the 2012 State Water Plan will be presented for the Board's consideration following a 30-day notice period and public hearing in accordance with 31TAC §358.4 (a).

RECOMMENDATION

The Executive Administrator recommends approval of this item.

This recommendation has been reviewed by legal counsel and complies with applicable statutes and Board rules.

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Les Trobman, General Counsel

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TO: Board Members

THROUGH: Kevin Patteson, Executive Administrator
Les Trobman, General Counsel
Jeff Walker, Deputy Executive Administrator, Water Supply & Infrastructure

FROM: Temple McKinnon, Manager, Regional Water Planning

DATE: November 21, 2014

SUBJECT: Consider approving the adopted Minor Amendment to the 2011 Region L Regional Water Plan, relating to a Recommended Seawater Desalination Water Management Strategy; and authorizing the Executive Administrator to post notice for a public hearing for an associated amendment to the 2012 State Water Plan

ACTION REQUESTED

Approve the adopted minor amendment to the 2011 Region L Regional Water Plan; and, authorize TWDB staff to develop the corresponding amendment to the 2012 State Water Plan, with associated public hearing, as appropriate per 31 TAC §357.51(f).

BACKGROUND

At the August 7, 2014 meeting of the South-Central Texas (Region L) Regional Water Planning Group, the group approved requesting a minor amendment determination from the Executive Administrator for a seawater desalination water management strategy (WMS) known as the Integrated Water Power Project (IWPP). This action was documented in a letter dated August 20, 2014, with further complete amendment material received September 5, 2014.

The IWPP WMS is a project to be sponsored by the Guadalupe-Blanco River Authority (GBRA). It has an online date of 2020 and will provide up to 100,000 acre-feet of water per year through 2070 to the Authority's steam-electric power generation and municipal customers. The capital cost associated with the strategy is $1.28 billion.

The IWPP includes the addition of a seawater desalination facility co-located with a future power generation facility in Calhoun County. This facility will have an off-shore intake for seawater from the Gulf of Mexico to a 98.2 MGD reverse osmosis water treatment plant near Port O'Conner. The treated water will be delivered to the proposed GBRA Mid-Basin Project area

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(approximately 141 transmission miles) for potential future municipal and industrial uses. The waste concentrate will be discharged 10 miles off-shore into the Gulf.

The Executive Administrator made a determination that adding the IWPP as a recommended WMS constitutes a minor amendment under 31 TAC §357.51(c), based on the amendment having met the following criteria:

1. Does not result in over-allocation of an existing or planned source of water;
2. Does not relate to a new reservoir;
3. Does not have a significant effect on instream flows, environmental flows or freshwater flows to bays and estuaries;
4. Does not have a significant substantive impact on water planning or previously adopted management strategies; and,
5. Does not delete or change any legal requirements of the plan.

The Executive Administrator provided a written response to the Region L Regional Water Planning Group for this minor amendment determination on October 21, 2014 (Attachment A). Region L adopted the minor amendment at their November 6, 2014 meeting. Following this adoption, a two-week public comment period was held and no public comments were received. No revision to the proposed minor amendment was found to be necessary by the regional water planning group.

KEY ISSUES

1. The Region L Regional Water Planning Group submitted to the TWDB following the November 6, 2014 planning group meeting the required written documentation of their adopted minor amendment, including comments received, and an addendum to the current 2011 Region L Water Plan (Attachment B).
2. The Executive Administrator has reviewed the adopted amendment and determined that statutory and rule requirements have been met.
3. If approved, an associated amendment to the 2012 State Water Plan will be presented for the Board's consideration following a 30-day notice period and public hearing in accordance with 31TAC §358.4 (a).

RECOMMENDATION

The Executive Administrator recommends approval of this item.

This recommendation has been reviewed by legal counsel and complies with applicable statutes and Board rules.

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Les Trobman, General Counsel

Texas Water Development Board

Water for Texas 2012: Amendment #2:

The following changes are proposed to be made to the 2012 State Water Plan as a result of minor ammendments to the Region H and Region L.
This amendment will be considered by the Texas Water Development Board on January 29, 2015

SUMMARY OF CHANGES:

Changes to Appendix A.2 of the 2012 State Water Plan: Recommended Water Management Strategies and Costs Estimates

Change	Region	Recommended Water Management Strategy	Total Capital Costs	First Decade Estimated Annual Average Unit Cost ($/acre-foot/year)	Water Supply Volume (acre-feet per year) 2010	2020	2030	2040	2050	2060	Estimated Annual Average Unit Cost ($/acre-foot/year)
REVISED	H	CONTRACT WITH BRAZOSPORT WATER AUTHORITY	$36,889,963	$193	7,750	10,886	10,886	10,886	10,886	10,886	$94
ADDED	H	BWA BRACKISH GROUNDWATER PLANT	$30,570,395	$1,829	-	3,136	3,136	3,136	3,136	3,136	$1,013
ADDED	H	BWA WTP EXPANSION	$14,359,419	$471	-	8,400	8,400	8,400	8,400	8,400	$328
ADDED	L	GBRA INTEGRATED WATER POWER PROJECT	$1,282,426,000	$2,290	-	100,000	100,000	100,000	100,000	100,000	$1,172

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CHANGES TO *WATER FOR TEXAS 2012 STATE WATER PLAN*

Text:

Page 4	Paragraph 4	Change second sentence to:	These strategies included 566 unique water supply projects designed to meet needs for additional water supplies for Texas during drought (this figure is lower than presented in previous plans because it does not separately count each entity participating in a given project.)
Page 4	Paragraph 5	Change first sentence to:	The strategies recommended by regional water planning groups would provide, if implemented, 9.1 million acre-feet per year in additional water supplies by 2060 (Figure ES.4).
Page 5	Paragraph 1	Change first sentence to:	About 34 percent of the volume of these strategies would come from conservation and reuse, about 16 percent from new major reservoirs, and about 33 percent from other surface water supplies.
Page 5	Paragraph 4	Change first sentence to:	The estimated total capital cost of the 2012 State Water Plan, representing the capital costs of all water management strategies recommended in the 2011 regional water plans, is $55 billion.
Page 74	Paragraph 2	Change second bullet to:	Recommended water management strategy volume in 2060 - 1,504,316 acre-feet per year
Page 74	Paragraph 2	Change third bullet to:	Total capital cost - $12.1 billion
Page 76	Paragraph 4	Change first sentence to:	The Region H Planning Group's recommended water management strategies would provide 1,504,316 acre-feet of additional water supply to meet all projected needs by the year 2060 (Figures H.3 and H.4) at a total capital cos of $12.1 billion (Appendix A).
Page 98	Paragraph 2	Change second bullet to:	Recommended water management strategy volume in 2060 - 865,738 acre-feet per year
Page 98	Paragraph 2	Change third bullet to:	Total capital cost - $8.9 billion
Page 98	Paragraph 2	Change fourth bullet to:	Conservation accounts for 10 percent of 2060 strategy volumes
Page 100	Paragraph 4	Change second sentence to:	Implementing all the water management strategies recommended in the Region L plan would result in 865,738 acre-feet of additional water supplies in 2060 at a total capital cost of $8.9 billion (Appendix A).
Page 100	Paragraph 5	Change first sentence to:	Conservation strategies account for 10 percent of the total amount of water that would be provided by the region's recommended water management strategies.
Page 102	Paragraph 1	Add bullet:	GBRA Integrated Water Power Project would provide up to 100,000 acre-feet per year of water in 2060 with a capital cost of $1.3 billion.
Page 187	Paragraph 1	Change first sentence to:	The regional planning groups recommended 566 unique water projects designed to meet needs for additional water supplies for Texas during drought, resulting in a total, if implemented, of 9.1 million acre-feet per year in additional water supplies by 2060.
Page 189	Paragraph 4	Change paragraph to:	To meet the needs for water during a repeat of the drought of record, regional water planning groups evaluated an recommended water management strategies that would account for an additional 9.1 million acre-feet per year of water by 2060 if all are implemented (Tables 7.1 and 7.2). These strategies included 566 unique water supply projects designed to meet needs for additional water supplies for Texas during drought (this figure is lower than presented in previous plans because it does not separately count each entity participating in a given project.)
Page 196	Paragraph 7	Change first sentence to:	Desalination, the process of removing salt from seawater or brackish water, is expected to produce nearly 441,136 acre-feet potable water by 2060.

Note : No further corrections to Chapter 9 are captured since the chapter speaks to financing needs at the time the 2012 State Water Plan was initially published.

Texas Water Development Board

Water for Texas 2012: Amendment #2:

The following changes are proposed to be made to the 2012 State Water Plan as a result of minor ammendments to the Region H and Region L.
This amendment will be considered by the Texas Water Development Board on January 29, 2015

CHANGES TO *WATER FOR TEXAS 2012 STATE WATER PLAN*

Tables and Figures:

					DECADE						TOTAL
				UNITS	2010	2020	2030	2040	2050	2060	
Page 5 :	Figure ES.4. :	Water Supplies from Water Management Strategies in the State Water Plan (AFY)	Update to the following:	acre-feet per year	2,049,353	4,614,176	5,962,915	6,649,551	8,040,426	9,135,975	
Page 7 :	Figure ES.6. :	Total Capital Costs for Water supplies, Water Treatment and Distribution, Wastewater Treatment and Collection, and Flood Control (Billions of Dollars)	Update to the following:	billions of dollars	Capital costs of water management strategies recommended in 2012 State Water Plan $54.7						
Page 7 :	Figure ES.6. :	Total Capital Costs for Water supplies, Water Treatment and Distribution, Wastewater Treatment and Collection, and Flood Control (Billions of Dollars)	Update to the following:	billions of dollars	Total capital costs: $233B						
Page 79 :	Figure H.3 :	Recommended Water Management Strategy Water Supply Volumes for 2010-2060 (AFY)	Add:	groundwater desalination	0	3,136	3,136	3,136	3,136	3,136	
Page 79 :	Figure H.4 :	2060 Recommended Water Management Strategies - Relative Share of Supply.	Add:	percent	Groundwater Desalination 0.2%						
Page 103 :	Figure L.3. :	Recommended Water Management Strategy Water Supply Volumes for 2010-2060 (AFY)	Update to the following:	seawater desalination	0	100,000	100,000	100,000	100,000	184,012	
Page 103 :	Figure L.4. :	2060 Recommended Water Management Strategies - Relative Share of Supply.	Update to the following:	percent	Groundwater Desalination 4.9%; Aquifer Storage and Recovery 5.9%; Seawater Desalination 21.2%; Municipal Conservation 8.4%; Irrigation Conservation 0.8%; Other Conservation 0.3%; New Major Reservoir 21.4%; Other Surface Water 4.6%; Groundwater 27.1%; Reuse 5.4%						
Page 188 :	Table 7.1. :	Recommended Water Management Strategy Supply Volumes by Region (AFY)	Update to the following:	Region H acre-feet per year	378,759	625,562	867,116	1,043,640	1,205,146	1,504,316	
				Region L acre-feet per year	188,297	476,003	642,606	671,553	731,476	865,738	
				Total acre-feet per year	2,049,353	4,614,176	5,962,915	6,649,551	8,040,426	9,135,975	
Page 189 :	Table 7.2. :	Recommended Water Management Strategy Supply Volumes by Type of Strategy (AFY)	Update to the following:	Groundwater Desalination acre-feet per year	56,553	84,292	106,571	136,414	166,219	184,704	
				Seawater Desalination acre-feet per year	125	128,125	128,143	134,049	168,021	253,514	
				Total Supply Volume acre-feet per year	2,049,353	4,614,176	5,962,915	6,649,551	8,040,426	9,135,975	

CHANGES TO *WATER FOR TEXAS 2012 STATE WATER PLAN (cont.)*

Tables and Figures:

Page 191 :	Figure 7.2. :	Relative Volumes of Recommended Water Management Strategies in 2060.	Update to the following:	percent	Groundwater 8.8%; Municipal Conservation 7.1%; Groundwater Desalination 2.0%; Conjunctive Use 1.5%; Seawater Desalination 2.8%; Aquifer Storage and Recovery 0.9%; Other Conservation 0.3%; Brush Control 0.2%; Weather Modification 0.2%; Surface Water Desalination <0.1%; Other Surface Water 33.4%; Irrigation Conservation 16.4%; New Major Reservoir 16.4%; Reuse 10.0%						
Page 193 :	Table 7.4. :	Recommended Ground and Surface Water Conveyance and Transfer Projects	Add:		ID 45; Guadalupe-Blanco River Authority Integrated Water Power Project; Conveyance from Gulf of Mexico Sea Water to Gonzales County						
Page 195 :	Table 7.5. :	Recommended Water Management Strategy Capital Costs by Region (Millions of Dollars)	Update to the following:	Region H Millions of Dollars	$4,710	$4,982	$287	$1,135	$458	$506	$12,078
				Region L Millions of Dollars	$1,022	$4,255	$2,321	$2	$12	$1,294	$8,906
				Total Millions of Dollars	$22,097	$16,140	$7,592	$3,127	$1,095	$4,702	$54,752
Page 195 :	Figure 7.4. :	Existing Supplies and Recommended Water Management Strategy Supplies by Region (AFY)	Update to the following:	Region H acre-feet per year	Water Management Strategy Supplies 1,504,316						
				Region L acre-feet per year	Water Management Strategy Supplies 865,738						
Page 197 :	Figure 7.5. :	Water Needs, Needs Met by Plans, and Strategy Supply by Region (AFY)	Update to the following:	Region H acre-feet per year	Water Management Strategy Supplies 1,504,316						
				Region L acre-feet per year	Water Management Strategy Supplies 865,738						

Note : No further corrections to Chapter 9 are captured since the chapter speaks to financing needs at the time the 2012 State Water Plan was initially published.