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Appendix B: GMA-12 Resolution for Proposed DFCs Dated April 15, 2016

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Appendix E: December 1, 2016 Presentation "Summary of Results of PS-10 Simulation"

Appendix FE: May 28, 2015 Presentation "GMA 12 Aquifer uses and Conditions Consideration Discussion"

Appendix GF: June 25, 2015 Presentation "GMA 12: Needs and Strategies"

Appendix HG: TERS for GMA 12 (GAM Task 12-035)

Appendix IH: GAM Run 13-002 for Fayette County GCD

Appendix J: GAM Run 10-014 for Lost Pines GCD

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Appendix ML: GAM Run 13-024 for Mid-East Texas GCD

Appendix NM: May 28, 2015 Presentation "GMA 12: Hydrological Conditions Consideration Discussion"

Appendix ON: August 13, 2015 Presentation "GMA-12: Environmental Impact Considerations"

Appendix PO: August 13, 2015 Presentation "GMA 12 Socioeconomic Impacts Considerations"

Appendix QP: June 25, 2015 Presentation "Groundwater Management Area 12: Consideration of the Impact on the Interests and Rights in Private Property in the Adoption of Desired Future Conditions of Aquifers"

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Appendix SR: GMA 12's Responses to Comments for Brazos Valley GCD

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| Meeting Date | Quorum Present | Major Discussion Topic |
|---------------------------|----------------|--|
| | | River alluvium DFCs, receive public comments on impact of DFCs on GW/SW interaction |
| March 24, 2016 | Yes | Presentation of GAM results for a modified Predictive Scenario 5 (PS5) |
| April 15, 2016 | Yes | Proposed GMA 12 DFCs approved and released for public comment |
| October 11, 2016 | Yes | Presentation on GAM results for Predictive Scenario 10 (PS10), discussion of comments received on GMA 12 DFCs. |
| December 1, 2016 | Yes | Discussed and accepted submission of Predictive Scenario 10 (PS10) in lieu of Predictive Scenario 6 (PS6) for purposes of evaluation of proposed DFCs. |
| April 27, 2017 | Yes | Discussed draft of Explanatory Report for GMA 12 DFCs |
| May 25, 2017 | Yes | Adoption of GMA 12 DFCs and Explanatory Report |
| <u>September 20, 2017</u> | <u>Yes</u> | <u>Adoption of updated GMA 12 DFC Resolution and Explanatory Report (with PS12 pumping)</u> |

* Denotes the nine factors required during considerations for DFCs under Texas Water Code Section 36.108

Table 1-4 Public hearings conducted by the GCDs regarding the proposed DFCs.

| GCD | Public Hearing Date |
|-----------------------|-----------------------|
| Brazos Valley GCD | May 12 & June 9, 2016 |
| Fayette County GCD | July 11, 2016 |
| Lost Pines GCD | July 20, 2016 |
| Mid-East Texas GCD | June 28, 2016 |
| Post Oak Savannah GCD | July 12, 2016 |

2.0 GMA 12 DESIRED FUTURE CONDITIONS

2.1 Sparta, Queen City, Carrizo, Calvert Bluff, Simsboro, and Hooper Aquifers

The Sparta, Queen City, and Carrizo aquifers are present and used in all GCDs within GMA 12. Therefore, all GCDs submitted DFCs for these aquifers. The Calvert Bluff, Simsboro, and Hooper aquifers are present in all GCDs but not used in Fayette County. Therefore, GMA 12 declared these aquifers not relevant for Fayette County, and Fayette County GCD did not submit a DFC for these aquifers. For the purpose of establishing DFCs, the Groundwater Availability Model (GAM) for the Queen City and Sparta Aquifers (Kelley and others, 2004) was used to determine the compatibility and physical possibility of the DFCs proposed by each GCD. Note that this GAM also includes the Carrizo-Wilcox Aquifer. The DFCs proposed by each GCD for these six aquifers are provided in **Table 2-1**, as well as the DFC adopted by GMA 12 as a whole. The DFC is based on the average drawdown from January 2000 through December 2069.

Table 2-1 Adopted DFCs for the Sparta, Queen City, Carrizo, Calvert Bluff, Simsboro, and Hooper Aquifers

| GCD or County | Average Aquifer Drawdown (ft) measured from January 2000 through December 2069 | | | | | |
|-----------------------|---|------------|---------|--|----------|--------|
| | Sparta | Queen City | Carrizo | Calvert Bluff | Simsboro | Hooper |
| Brazos Valley GCD | 12 | 12 | 61 | 125 | 295 | 207 |
| Fayette County GCD | 47 | 64 | 110 | <u>Declared as non-relevant –</u> – | | |
| Lost Pines GCD | 5 | 15 | 62 | 100 | 240 | 165 |
| Mid-East Texas GCD | 5 | 2 | 80 | 90 | 138 | 125 |
| Post Oak Savannah GCD | 28 | 30 | 67 | 149 | 318 | 205 |
| Falls County | -- | -- | -- | -- | -2 | 27 |
| Limestone County | -- | -- | -- | 11 | 50 | 50 |
| Navarro County | -- | -- | -- | -1 | 3 | 3 |
| Williamson County | -- | -- | -- | -11 | 47 | 69 |
| GMA-12 | 16 | 16 | 75 | 114 | 228 | 168 |

2.2 Yegua-Jackson Aquifer

The Yegua-Jackson Aquifer is present in all GCDs in GMA 12. All GCDs except Brazos Valley GCD manage the Yegua-Jackson Aquifer as a single unit. Consequently, the Brazos Valley GCD adopted two DFCs for the Yegua-Jackson Aquifer: a DFC for the Jackson Aquifer and separate DFC for the Yegua Aquifer. The DFCs proposed by each GCD for the Yegua-Jackson Aquifer are provided in **Table 2-2**, as well as the DFC adopted by GMA 12 as a whole. Lost Pines GCD did not propose a DFC because the district has declared the Yegua-Jackson Aquifer as a non-relevant aquifer. For the purpose of establishing and evaluating DFCs, the GAM for the Yegua-Jackson Aquifer (Deeds and others, 2010) was used to determine the

held in 2014 and 2015. These simulation results showed a substantial increase in the drawdowns within GMA 12, particularly for the Simsboro Aquifer. This was because pumping from the Simsboro Aquifer in these simulations was significantly higher than in the model simulation utilized to establish DFCs in the first cycle of GMA planning ending in 2010. The pumping scenario PS-6 included updated pumping for 2000 through 2010 based on TWDB and GCD pumping data. Based on comments received on the proposed DFCs, an additional simulation, PS-10, was developed. The results of that simulation were presented to GMA 12 on December 1, 2016. This simulation included the areal redistribution of pumping in Robertson County from the Simsboro Aquifer to better represent the areas where the greatest amounts of pumping were occurring and were estimated to occur in the future. The timing and total amount of pumping from the Simsboro Aquifer in Robertson County as a whole did not change. In the north part of Brazos County, pumping from the Simsboro Aquifer was added to the PS-6 value for the period from 2011 through 2039. Based on comments received from the Texas Water Development Board on the GMA 12 DFCs, it was necessary to update the PS-10 pumping scenario to adjust pumpage in the Lost Pines GCD so that the approved DFCs would be met. The results of this simulation were presented to GMA 12 on September 20, 2017 and a copy of that presentation is included in Appendix E. With these changes, PS-10PS-12 was accepted as the well file utilized to evaluate GMA 12 DFCs. **Table 4-1** provides the average drawdowns simulated using PS-10PS-12.

Table 4-1 Average Aquifer Drawdown calculated for Sparta, Queen City, Carrizo, Calvert Bluff, Simsboro, and Hooper Aquifers using PS-10PS-12.

| GCD or County | Average Aquifer Drawdown (ft) measured from January 2000 through December 2069 | | | | | |
|-----------------------|---|------------|---------|--------------------------------|--------------------|--------------------|
| | Sparta | Queen City | Carrizo | Calvert Bluff | Simsboro | Hooper |
| Brazos Valley GCD | 12 | 13 | 61 | 126 125 | 296 295 | 209 208 |
| Fayette County GCD | | | | Declared as non-relevant 170-- | | |
| | | | | --277 | | |
| | 46 | 63 | 109 | --283 | | |
| Lost Pines GCD | 4 | 16 | 68 | 140 109 | 257 251 | 185 181 |
| Mid-East Texas GCD | 1 | -3 | 81 | 90 | 138 | 126 125 |
| Post Oak Savannah GCD | 28 | 30 | 67 | 149 148 | 325 322 | 207 206 |
| Falls County | -- | -- | -- | -- | -2 | 27 |
| Limestone County | -- | -- | -- | 12 | 51 | 55 |
| Navarro County | -- | -- | -- | -1 | 5 | 5 |
| Williamson County | -- | -- | -- | -11 | 47 | 69 |
| GMA-12 | 18 | 19 | 76 | 117 | 231 | 173 |

4.3 Yegua-Jackson GAM

The proposed DFCs for the Yegua-Jackson aquifers were developed based on simulations of potential scenarios of future pumping using the GAM for the Yegua-Jackson (Deeds and others, 2010). The Yegua-Jackson Aquifer is a minor aquifer in Texas that is primarily used for rural domestic water uses. The

7.0 RECOMMENDATIONS AND COMMENTS RECEIVED

This section provides a summary of the comments received by GMA 12 and GMA 12 member GCDs on the proposed DFCs and during the 90-day period for public comment on the DFCs proposed by GMA 12. Comments received by GMA 12 or GMA 12 member GCDs on the proposed DFCs during the 90-day comment period are summarized in **Table 7-1**. Only specific comments on the proposed DFCs are addressed in this Explanatory Report. Because of the lengthy nature of these comments and responses, only a summary is provided here. The full text of the comments and GMA 12's response to the comments are provided in **Appendices S through U**.

7.1 Comments Received by Brazos Valley GCD

Two sets of comments in Table 7-1 were received by the Brazos Valley GCD. One set of comments was from the City of Bryan and another was from Cathy Lazarus. The comments and GMA 12's responses to them are provided in **Appendix [SR](#)**.

7.2 Comments Received by Fayette County GCD

No comments were received by the Fayette County GCD on the proposed DFCs.

7.3 Comments Received by Lost Pines GCD

Four sets of comments in Table 7-1 were received by the Lost Pines GCD; three written comments and one set of oral comments at the public hearing held by the Lost Pines GCD on July 20, 2016. These include:

- Environmental Stewardship
- Thornhill Group Inc. on behalf of Forestar
- Lower Colorado River Authority
- Mr. Hugh Brown

These comments and GMA 12's responses to them are provided in **Appendix [TS](#)**.

7.4 Comments Received by Mid-East Texas GCD

No comments in Table 7-1 were received by the Mid-East Texas GCD on the proposed DFCs.

7.5 Comments Received by Post Oak Savannah GCD

No comments in Table 7-1 were received by Post Oak Savannah GCD. Post Oak Savannah GCD did respond to a set of comments submitted by Mr. Curtis Chubb on 3/27/2015. These comments and GMA 12's responses to them are provided in **Appendix [UF](#)**.

7.6 Comments Received from Texas Water Development Board

Comments were received from the Texas Water Development Board following the initial submittal of the proposed DFCs. Responses to the comments are provided in **Appendix V**.