GMA 12

Yegua-Jackson Aquifer

by

GMA 12 Consultant Team

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Topics

- Yegua-Jackson Structure
- Existing DFCs and MAGs
- Non-Relevant Aquifers
- Pumping Rates Used in TWDB MAG simulation
- Next Steps

Yegua-Jackson Aquifer: Vertical and Areal Extend

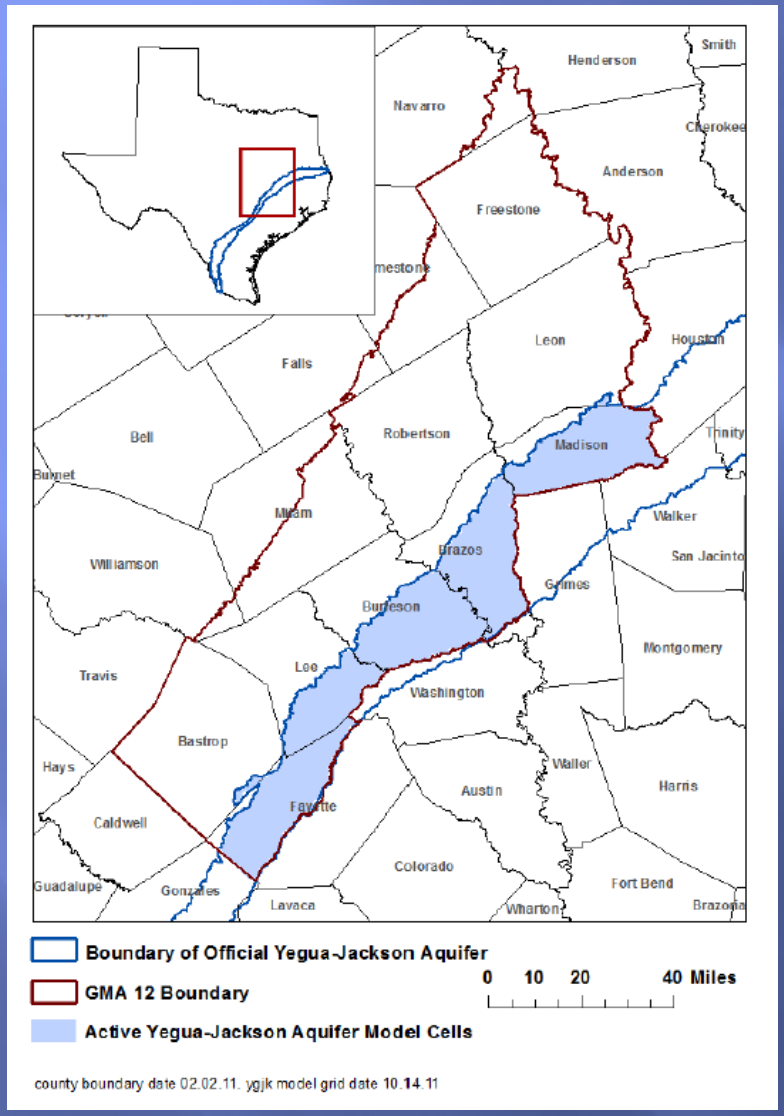


Image from Wade and others (2014)

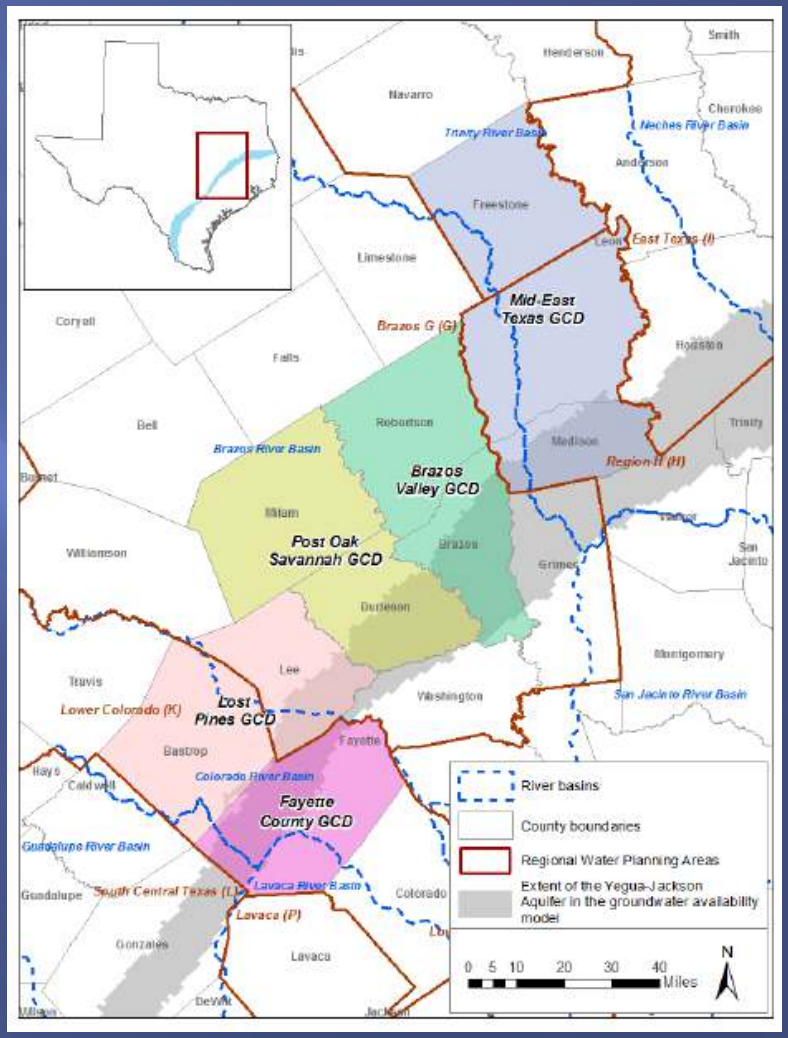
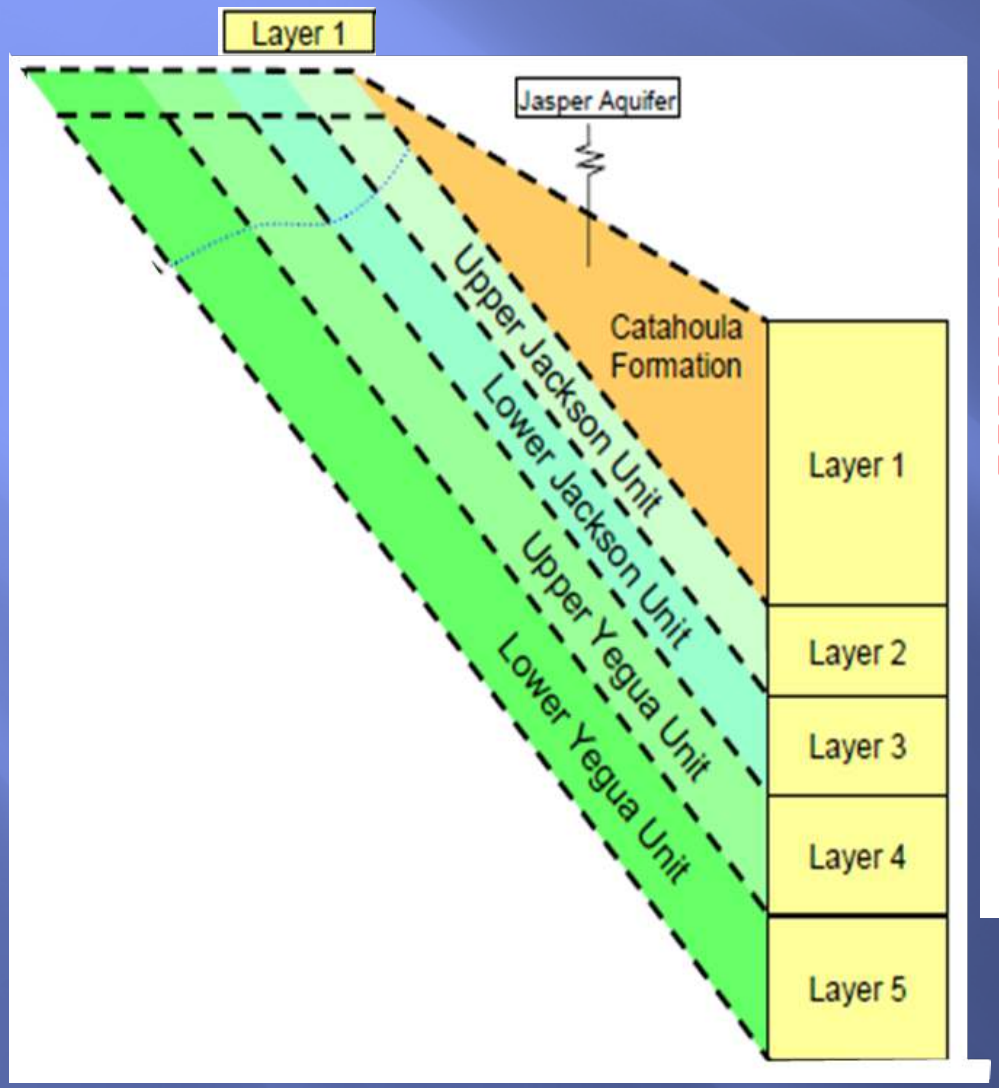
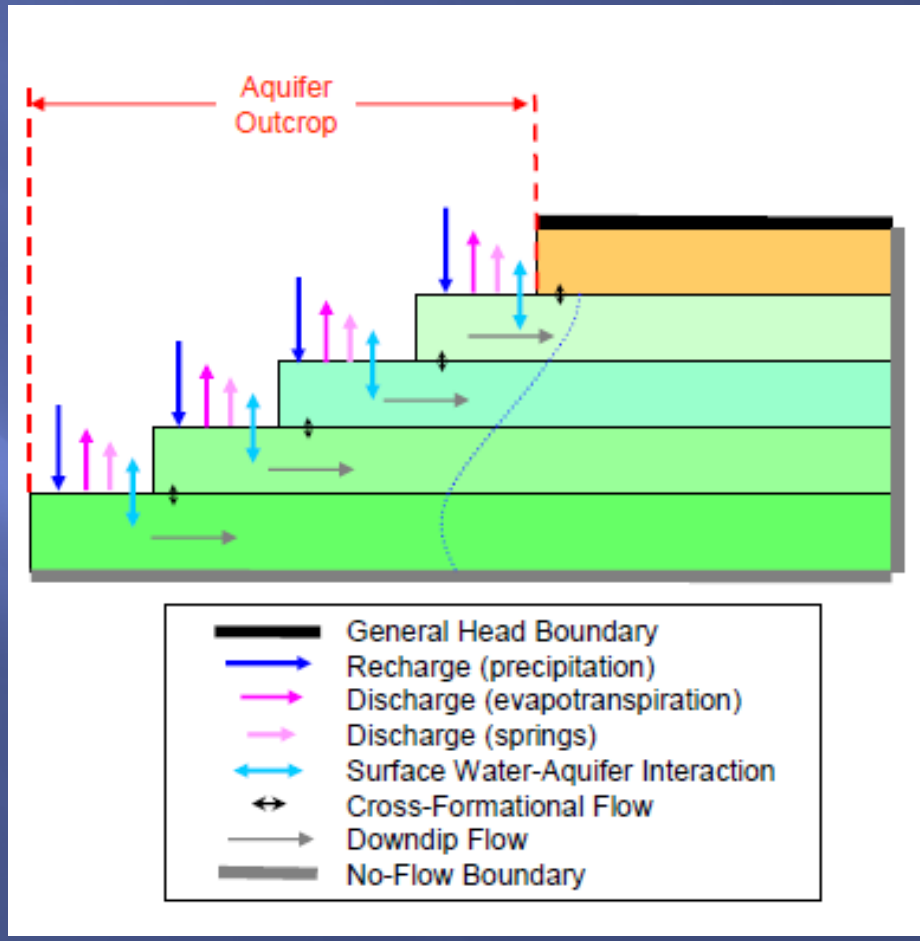


Image from Wade and Ballew (2017)

Yegua-Jackson Groundwater Availability Model*





*Deeds and others (2010)

Currently Adopted DFCs for Yegua-Jackson

Table 2-2 Adopted DFCs for the Yegua and Jackson Aquifers

GCD	Average Aquifer Drawdown (ft) measured from January 2010 through December 2069		
	Yegua	Jackson	Yegua-Jackson
Brazos Valley GCD	70	114	--
Fayette County GCD	--	--	77
Lost Pines GCD	--	--	--
Mid-East Texas GCD	--	--	7
Post Oak Savannah GCD	--	--	100
GMA-12	--	--	*65*

For this joint planning cycle, Brazos Valley GCD will have a DFC only for the entire Yegua-Jackson Aquifer.

Lost Pines GCD will declare Yegua-Jackson as a non-relevant aquifer.

Table from GMA 12 Explanatory Report (Donnelly and others, 2018)

MAGs for Yegua-Jackson

TABLE 10 MODELED AVAILABLE GROUNDWATER FOR THE YEGUA-JACKSON AQUIFER IN GROUNDWATER MANAGEMENT AREA 12 SUMMARIZED BY GROUNDWATER CONSERVATION DISTRICT (GCD) AND COUNTY FOR EACH DECADE BETWEEN 2010 AND 2069. VALUES ARE IN ACRE-FEET PER YEAR.

Groundwater Conservation District	County	Aquifer	2010	2020	2030	2040	2050	2060	2069
Brazos Valley GCD	Brazos	Jackson	4,411	4,404	4,402	4,402	4,402	4,402	4,402
Brazos Valley GCD	Brazos	Yegua	2,452	2,452	2,452	2,452	2,452	2,452	2,452
Brazos Valley GCD Total[1]		**Yegua-Jackson**	**6,863**	**6,856**	**6,854**	**6,854**	**6,854**	**6,854**	**6,854**
Fayette County GCD[1]	**Fayette[3]**	**Yegua-Jackson**	**9,262**	**9,262**	**9,262**	**9,262**	**9,262**	**9,261**	**9,261**
Lost Pines GCD[2]	Bastrop	Yegua-Jackson	NR	NR	NR	NR	NR	NR	NR
Lost Pines GCD[2]	Lee	Yegua-Jackson	NR	NR	NR	NR	NR	NR	NR
Lost Pines GCD Total[1,2]		**Yegua-Jackson**	**NR**	**NR**	**NR**	**NR**	**NR**	**NR**	**NR**
Mid-East Texas GCD	Leon	Yegua-Jackson	0	0	0	0	0	0	0
Mid-East Texas GCD	Madison	Yegua-Jackson	809	809	809	809	809	809	809
Mid-East Texas GCD Total[1]		**Yegua-Jackson**	**809**	**809**	**809**	**809**	**809**	**809**	**809**
Post Oak Savannah GCD[1]	**Burleson**	**Yegua-Jackson**	**14,544**	**14,544**	**12,576**	**12,564**	**12,478**	**12,326**	**10,200**
GMA 12 Total[1]		**Yegua-Jackson**	**31,478**	**31,471**	**29,501**	**29,489**	**29,403**	**29,250**	**27,124**

1. Individual estimates are rounded and may not always sum up to the total value displayed.
2. NR: Groundwater Management Area 12 declared the Yegua-Jackson Aquifer not relevant in these areas .
3. Modeled available groundwater values for Fayette County include all of the county (GMA 12 and GMA 15 portions)

Table from Wade and Ballew (2017)

GMA 12 Non-Relevant Areas of Aquifers

There are four areas where aquifers were declared non-relevant during the current cycle of joint groundwater planning. The Trinity Aquifer was declared non-relevant in Bastrop, Lee and Williamson counties because of its small areal coverage, great depth and poor water quality. **The Yegua-Jackson Aquifer was declared non-relevant in Lost Pines GCD because it has a minimal amount of pumpage within the district.** The Gulf Coast Aquifer was declared non-relevant in Brazos Valley GCD within GMA 12 since the small outcrop in the southernmost part of Brazos County is thin, can only provide water in small quantities and is very limited in areal extent. Also, the Wilcox portion of the Carrizo-Wilcox Aquifer in Fayette County was declared non-relevant because of the great depth to these units and the poor water quality.

GMA 12 Non-Relevant Areas of Aquifer

The Texas Water Development Board, in its July 2013 document, Explanatory Report for Submittal of Desired Future Conditions to the Texas Water Development Board, offers the following guidance regarding documentation for aquifers that are to be classified not relevant for purposes of joint planning:

> *Districts in a groundwater management area may, as part of the process for adopting and submitting desired future conditions, propose classification of a portion or portions of a relevant aquifer as non-relevant (31 Texas Administrative Code 356.31 (b)). This proposed classification of an aquifer may be made if the districts determine that aquifer characteristics, groundwater demands, and current groundwater uses do not warrant adoption of a desired future condition.*
>
> *The districts must submit to the TWDB the following documentation for the portion of the aquifer proposed to be classified as non-relevant:*
>
> 1. *A description, location, and/or map of the aquifer or portion of the aquifer;*
> 2. *A summary of aquifer characteristics, groundwater demands, and current groundwater uses, including the total estimated recoverable storage as provided by the TWDB, that support the conclusion that desired future conditions in adjacent or hydraulically connected relevant aquifer(s) will not be affected; and*
> 3. *An explanation of why the aquifer or portion of the aquifer is non-relevant for joint planning purposes.*

Process For Declaring Aquifer as Non-Relevant (TAC §356.31)

Title 31 Texas Administrative Code §356.31

(a) Not later than five years after the date on which the districts in a groundwater management area last collectively adopted a desired future condition, the districts\ shall propose a desired future condition for adoption in accordance with Texas Water Code §36.108.

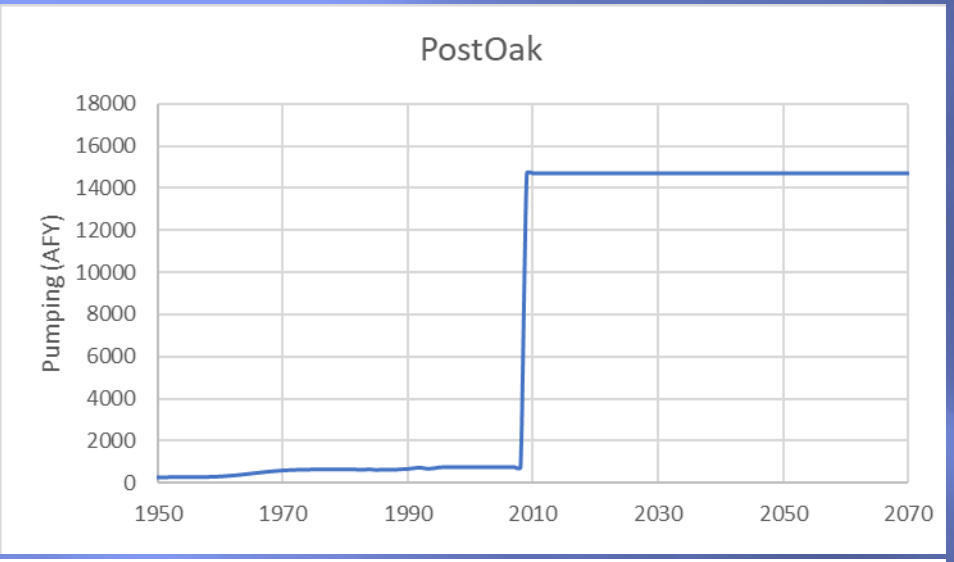
(b) The districts in a groundwater management area may, as part of the process for adopting and submitting desired future conditions, propose classification of a portion or portions of a relevant aquifer as non-relevant if the districts determine that aquifer characteristics, groundwater demands, and current groundwater uses do not warrant adoption of a desired future condition. In such a case no desired future condition is required. The districts must submit the following documentation to the agency related to the portion of the relevant aquifer proposed to be classified as non-relevant:

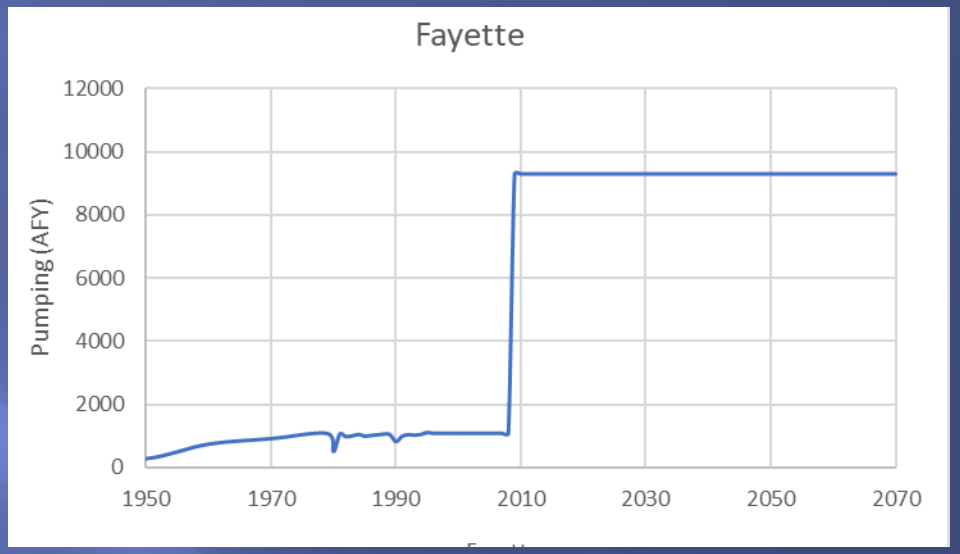
(1) A description, location, and/or map of the aquifer or portion of the aquifer;

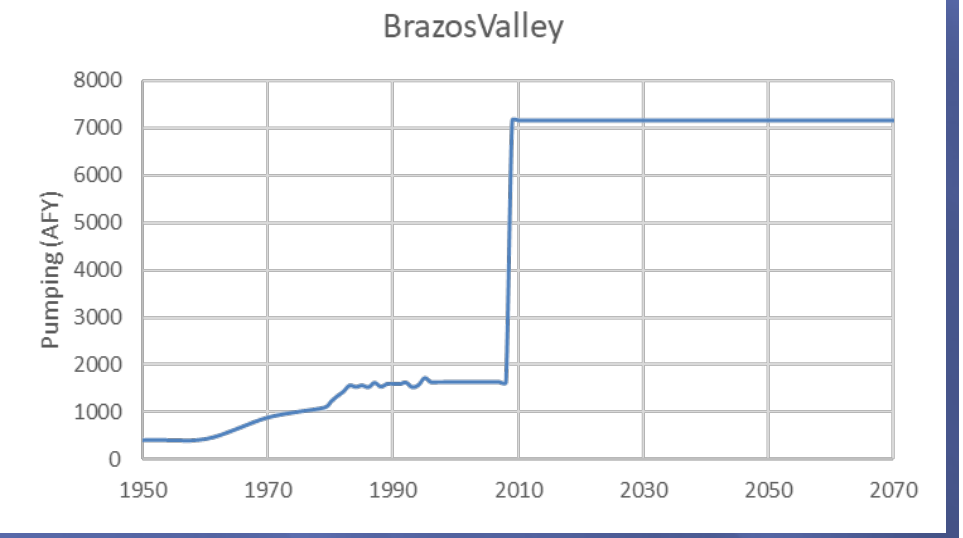
(2) A summary of aquifer characteristics, groundwater demands, and current groundwater uses, including the total estimated recoverable storage as provided by the executive administrator, that support the conclusion that desired future conditions in adjacent or hydraulically connected relevant aquifer(s) will not be affected; and

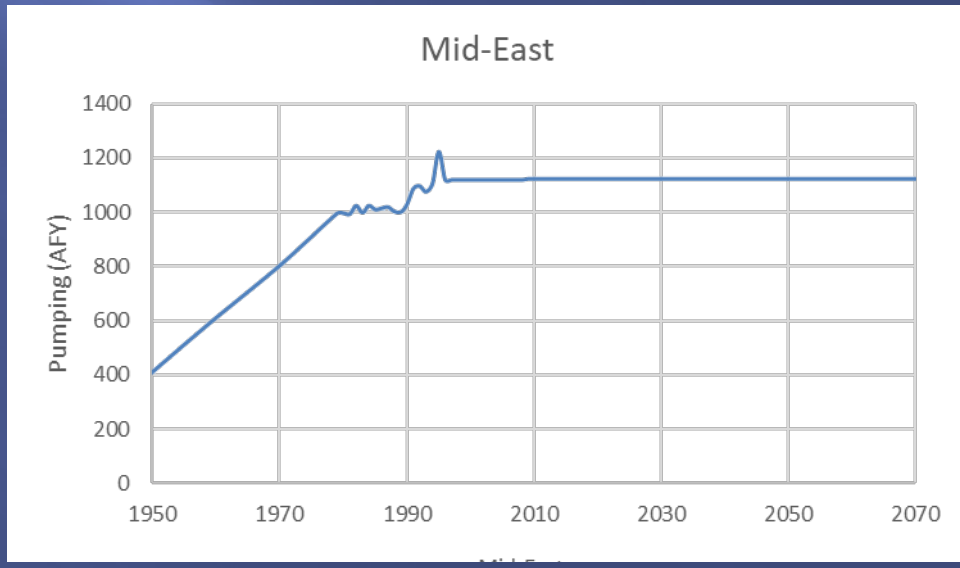
(3) An explanation of why the aquifer or portion of the aquifer is non-relevant for joint planning purposes.

Yegua-Jackson Pumping Over Time in GMA 12









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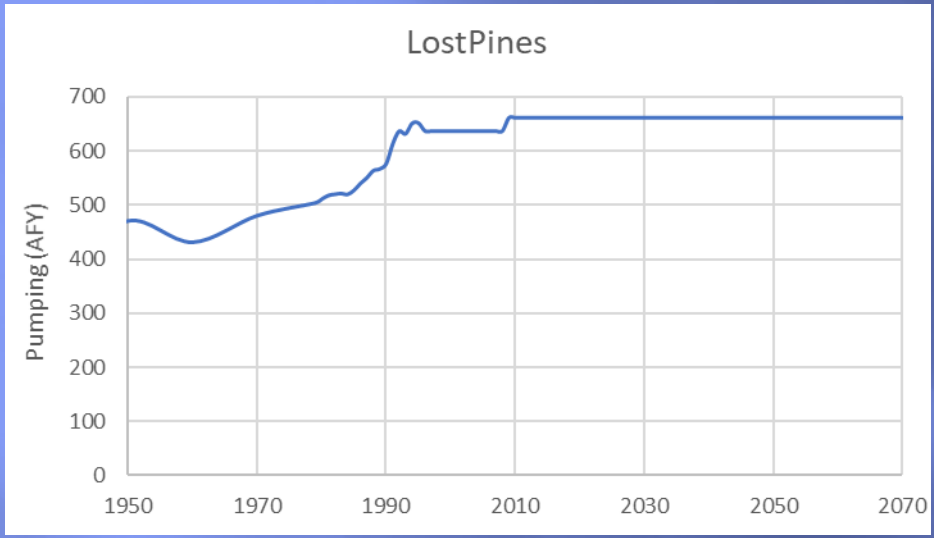

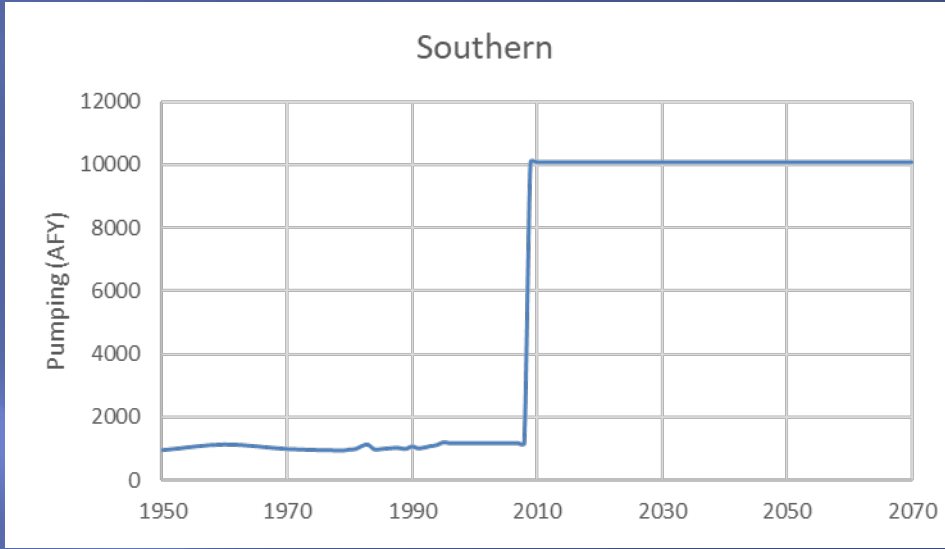

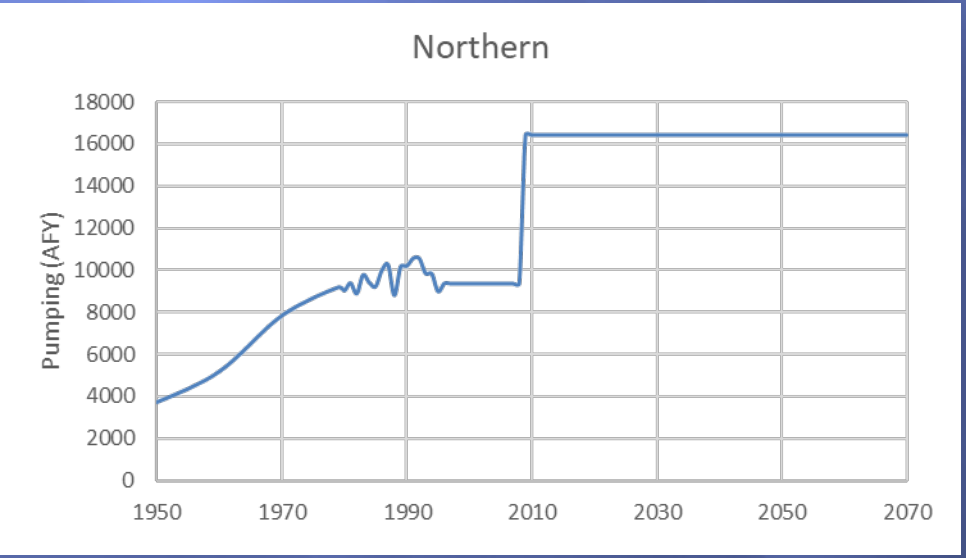

Questions???