Modeled Available Groundwater (MAG) Peak Factor

Presented to
Groundwater
Management
Area 12

May 11, 2018

BACKGROUND

- New concept in groundwater management for planning administered by the TWDB
- Provides reasonable flexibility and accommodation for variations in groundwater pumping during the planning period above the MAG, but total pumping during the planning period does not change
- Can accommodate anticipated fluctuations in pumping between wet and dry periods, or to account for other shifts in the timing of pumping while remaining consistent with desired future conditions

BACKGROUND(cont'd)

- Allows regional water planning groups to develop plans that reflect more realistic drought condition groundwater availability and pumping, where appropriate
- Maintains the integrity of the regional and state water planning process

Requirements for Use of Proposed MAG Peak Factor

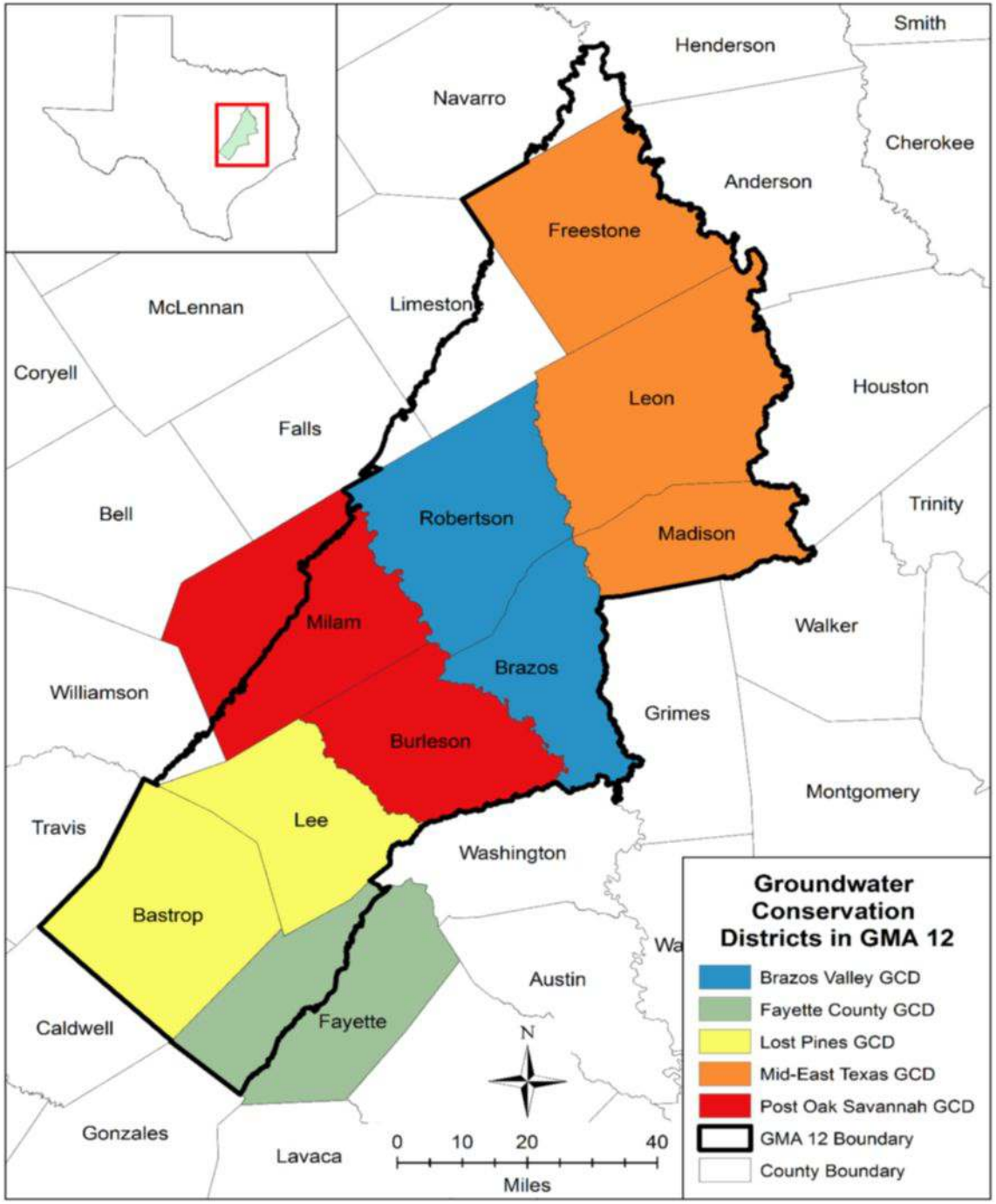
- Provide basis for the request for MAG Peak Factor
- Document how the MAG Peak Factor will not cause adjoining groundwater conservation districts to area using MAG PF to exceed their desired future conditions

Consideration of Modeled Available Groundwater Peak Factor for Brazos County

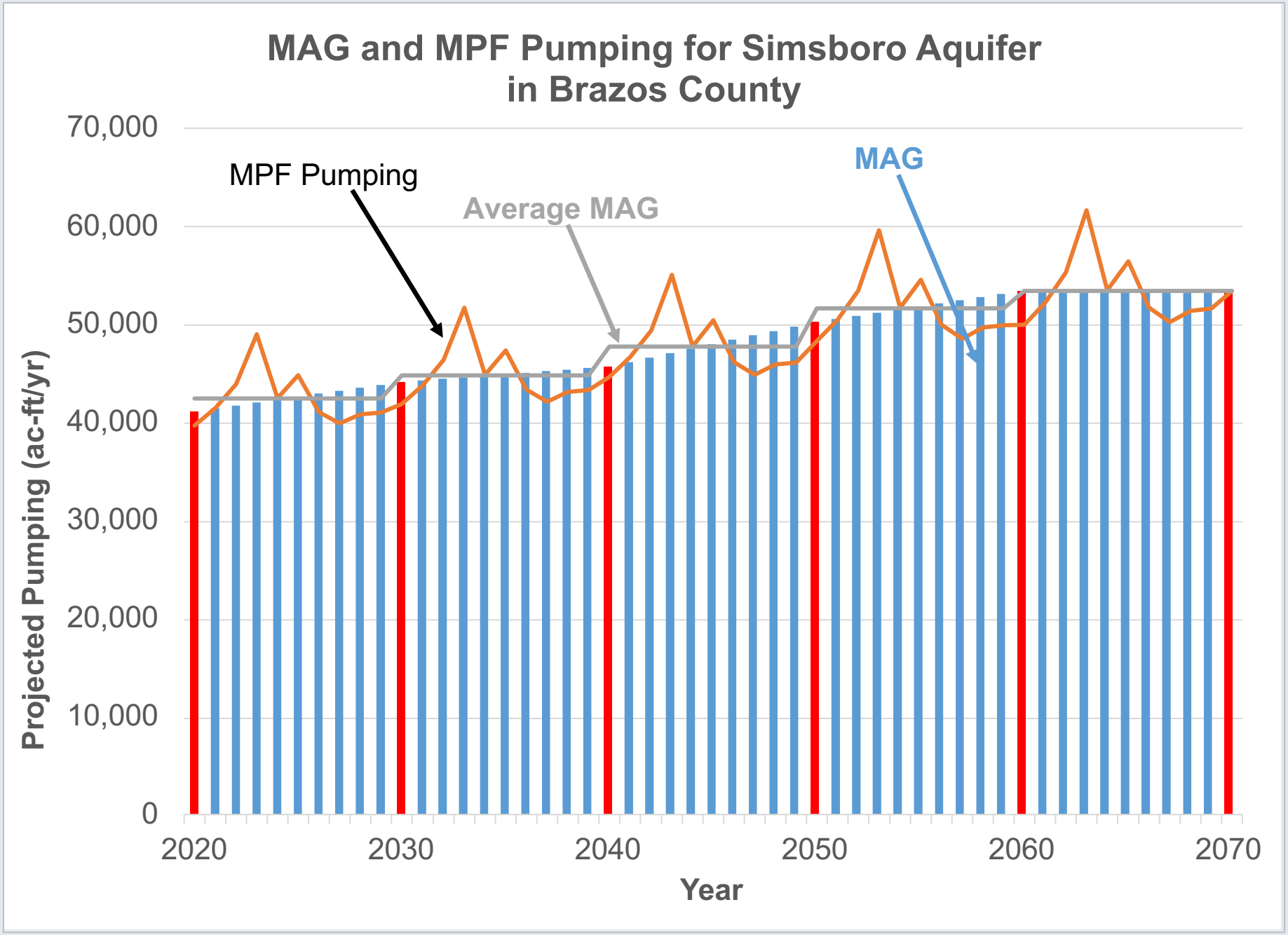
- Peak Factor pumping scenario developed by Region G for period 2020 to 2070 using Peak Factor of 1.2. Pumping from 2000 to 2019 the same as in MAG run.
- Scenario includes Peak Factor pumping variations for Simsboro and Carrizo aquifers only in Brazos County
- Model run performed using Queen City – Sparta GAM, same model as used in GMA 12 planning

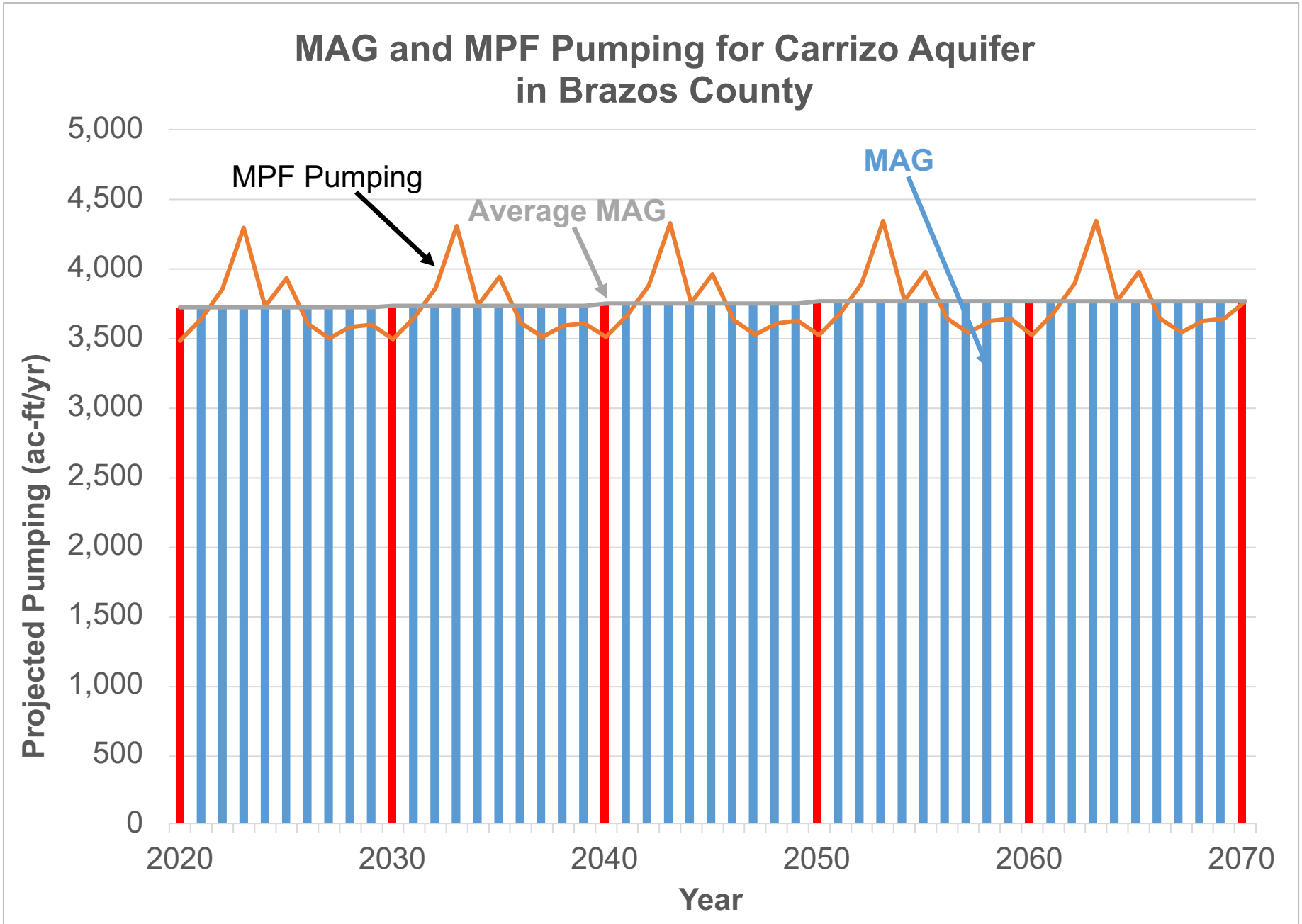
Consideration of Modeled Available Groundwater Peak Factor for Brazos County (cont'd)

- Simulation perfomed to evaluate if pumping using the MAG Peak Factor would effect in District and out of District Desired Future Conditions
- Results are applicable to proposed groundwater project in Brazos County for City of College Station regarding the Simsboro Aquifer



Groundwater Conservation Districts in GMA 12


MAG and MPF Pumping for Simsboro Aquifer in Brazos County
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
Projected Pumping (ac-ft/yr)
MPF Pumping
Average MAG
MAG
2020
2030
2040
2050
2060
2070
Year


MAG and MPF Pumping for Carrizo Aquifer in Brazos County
MPF Pumping
Average MAG
MAG
Projected Pumping (ac-ft/yr)
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
2020
2030
2040
2050
2060
2070
Year

Results of MAG Peak Factor Modeling

Entity / Scenario	Calvert Carrizo	Calvert Bluff	Simsboro	Hooper
Brazos Valley GCD				
MAG	60	125	295	207
MPF	60	123	290	205
Mid-East Texas GCD				
MAG	80	89	138	125
MPF	80	89	136	124
Lost Pines GCD				
MAG	68	109	252	181
MPF	68	109	250	181
Post Oak Savannah GCD				
MAG	66	149	322	206
MPF	66	147	318	205
GMA 12				
MAG	75	114	228	168
MPF	75	113	226	167

- MAG = Results from GMA 12 simulation used to develop DFCs for 2017 cycle of GMA Planning
- MPF = Results from simulation using pumping from the Simsboro Aquifer modified in Brazos County by a peaking factor provided by Region G

Results

- MAG Peak Factor has no impact on Desired Future Conditions in the District, in surrounding districts or in GMA 12 as a planning area
- Approval process of MAG Peak Factor
  - Brazos Valley GCD
  - GMA 12
  - Region G
  - TWDB Executive Administrator


??Questions??
Thank you!