North Texas GCD Board Meeting

April 14, 2020

Agenda Item 8

- Presentation and discussion regarding Socioeconomic Impacts, Feasibility of Desired Future Conditions (DFCs), and Other Relevant Information factors as they relate to Desired Future Conditions (DFCs) adoption pursuant to Texas Water Code Section 36.108(d)

GMA 8 Schedule to Discuss Nine Factors

November 2019		
Environmental Impacts	Subsidence Impacts	Hydrological Conditions
February 2020		
Aquifer Uses or Conditions	Supply Needs & Management Strategies	Private Property Rights
May 2020		
Socioeconomic Impacts	DFC Feasibility	Other Relevant Information

Standard for Desired Future Conditions

Highest Practicable Level of Groundwater Production

Conservation, Preservation, Protection, Recharging, and Prevention of Waste of Groundwater, and Control of Subsidence

Socioeconomic Impacts

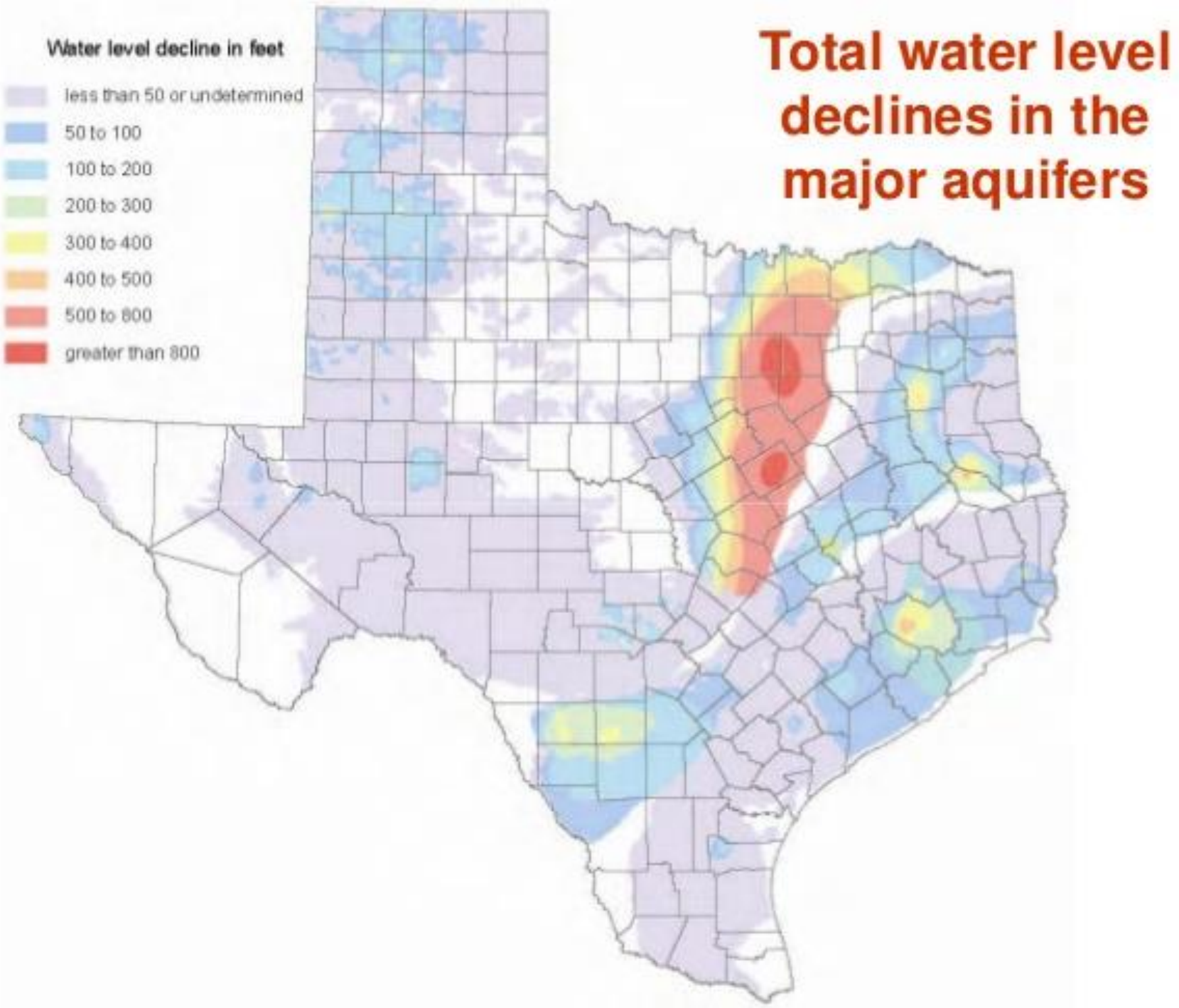
- Current Explanatory Report points to socioeconomic impact in Regional Water Planning Areas (RWPA)
- This socioeconomic impact for each RWPA is based on failure to develop adequate water supply
- Includes all water strategies, not just groundwater

Example of Socioeconomic Impact in Region G for current planning cycle

Table ES-1 Region G socioeconomic impact summary

Regional Economic Impacts	2020	2030	2040	2050	2060	2070
Income losses ($ millions)*	$13,299	$15,465	$13,353	$12,695	$12,154	$12,080
Job losses	65,131	86,060	80,693	86,373	91,113	98,141
Financial Transfer Impacts	**2020**	**2030**	**2040**	**2050**	**2060**	**2070**
Tax losses on production and imports ($ millions)*	$967	$1,152	$932	$836	$749	$712
Water trucking costs ($ millions)*	$68	$87	$108	$137	$186	$532
Utility revenue losses ($ millions)*	$171	$299	$446	$624	$839	$1,074
Utility tax revenue losses ($ millions)*	$3	$5	$8	$12	$16	$20
Social Impacts	**2020**	**2030**	**2040**	**2050**	**2060**	**2070**
Consumer surplus losses ($ millions)*	$352	$510	$729	$1,290	$2,816	$3,883
Population losses	11,958	15,801	14,815	15,858	16,728	18,019
School enrollment losses	2,287	3,022	2,834	3,033	3,200	3,447

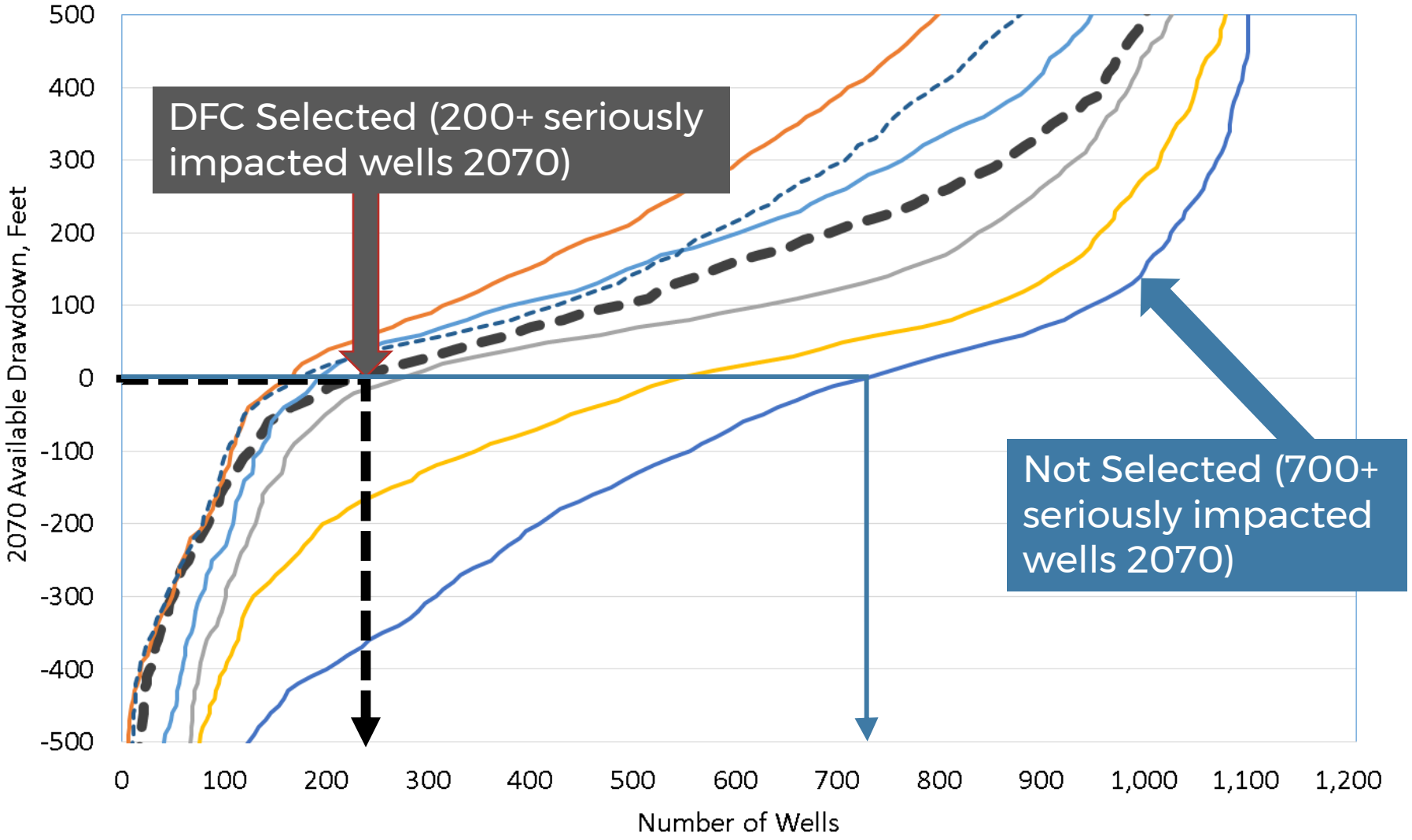
Total water level declines in the major aquifers



Estimated Lift Cost for Groundwater

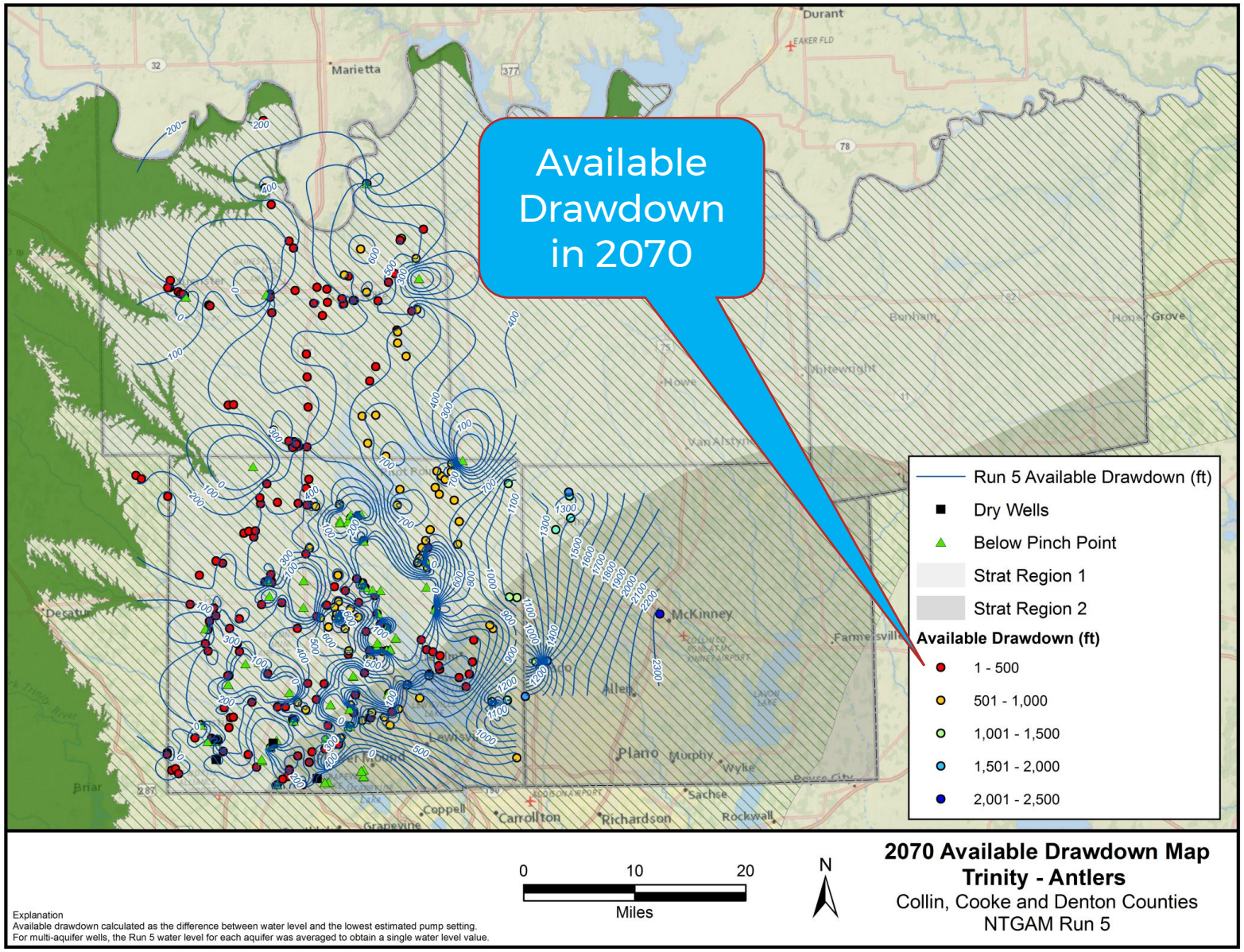
		Average Pumping Rate (Million Gallons per Day, MGD)					
		1	2	5	10	15	20
		Average Pumping Rate (Gallons Per Minute, GPM)					
		694	1,389	3,472	6,944	10,417	13,889
Total Dynamic Head (feet)	Cost Per 1,000 Gallons	Cost per MGD					
		Annual Cost of Pumping					
100	$0.044	$15,940	$31,870	$79,690	$159,370	$239,060	$318,750
200	$0.087	$31,870	$63,750	$159,370	$318,750	$478,120	$637,490
300	$0.131	$47,810	$95,620	$239,060	$478,120	$717,180	$956,240
400	$0.175	$63,750	$127,500	$318,750	$637,490	$956,240	$1,274,980
500	$0.218	$79,690	$159,370	$398,430	$796,860	$1,195,300	$1,593,730
600	$0.262	$95,620	$191,250	$478,120	$956,240	$1,434,350	$1,912,470
700	$0.305	$111,560	$223,120	$557,800	$1,115,610	$1,673,410	$2,231,220
800	$0.349	$127,500	$255,000	$637,490	$1,274,980	$1,912,470	$2,549,960
900	$0.393	$143,440	$286,870	$717,180	$1,434,350	$2,151,530	$2,868,710
1,000	$0.436	$159,370	$318,750	$796,860	$1,593,730	$2,390,590	$3,187,460

Public Water Supply Well Impacts



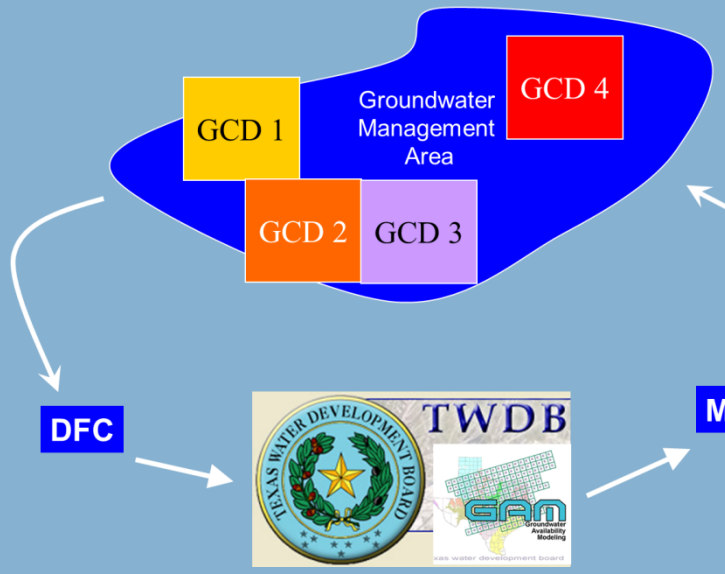
Map showing available drawdown in wells

(Results from 1 of 10 runs completed)

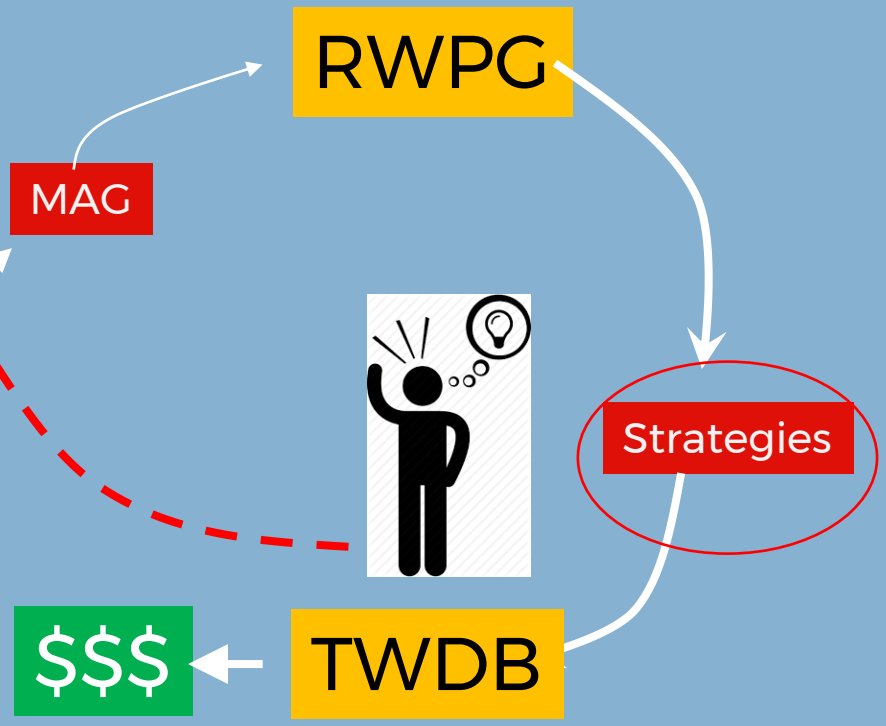


One reason DFCs/MAGs matter

Joint Planning



Regional Water Planning



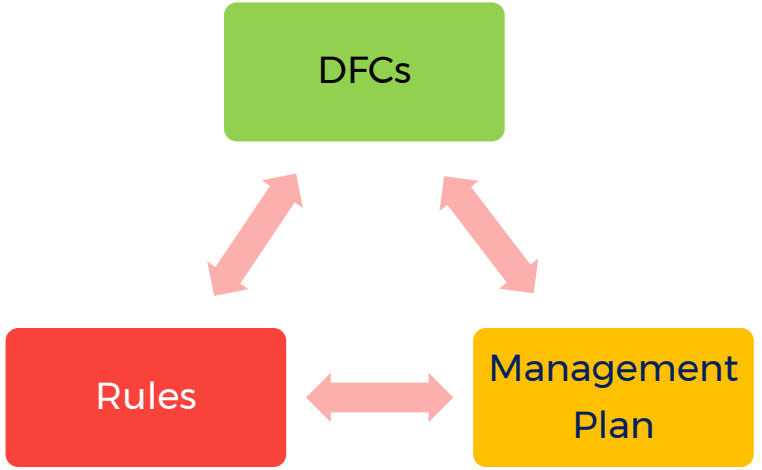
Private Property Rights and Socioeconomic Issues are sometimes intertwined

- Balancing existing uses with projected future uses
- Investment-backed expectations of existing users and property owners within the GCD
- Long-term viability of groundwater resources in area
- Whether immediate cutbacks would be required in setting a particular DFC or whether cutbacks, if any, would need to occur over a certain timeframe
- Availability of groundwater during extreme drought on outcrop areas
- Economic consequences to existing users (i.e., cost to drop pumps, reconfigure or drill new wells) and the economic consequences of less water available for new users
- Balance is defined by each GCD, between all of these considerations

Feasibility of Achieving the DFC

- Physical Achievability
  - *Is the DFC physically possible within the aquifer?*
  - ➢ *Groundwater Availability Models help ensure that DFCs are generally physically achievable in the aquifer*

- Regulatory Achievability
  - *Can the DFC be achieved via GCD management plan and rules?*
  - *Does the regulated community and stakeholders agree with the management approach required to achieve the DFC?*
  - ➢ *NTGCD has implemented Rules and has an approved Management Plan*



Thank you!

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