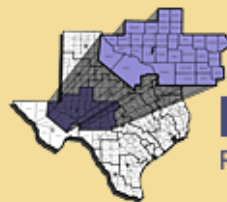


Region F Water Planning Group Meeting

September 26, 2013

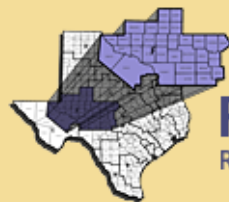


REGION F WATER PLAN
Regional Water Planning Group

PRELIMINARY DRAFT NEEDS ANALYSIS

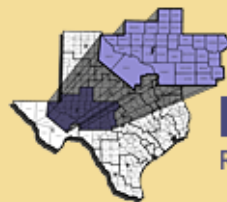
Groundwater Supplies

Surface Water Supplies



REGION F WATER PLAN
Regional Water Planning Group

Development of Needs



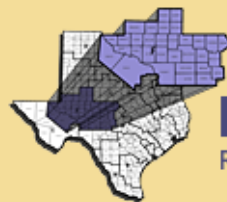
Groundwater Allocation

Source Availability

- MAGs
- RWPG Approved
 - Non-relevant areas
 - Other Aquifer

Considerations

- Well field capacity
- Contracts
- Historical usage
(non-municipal users)



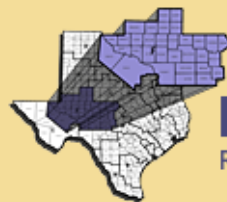
Surface Water Allocation

Source Availability

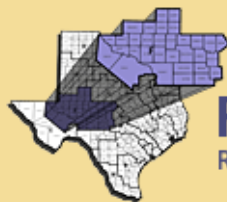
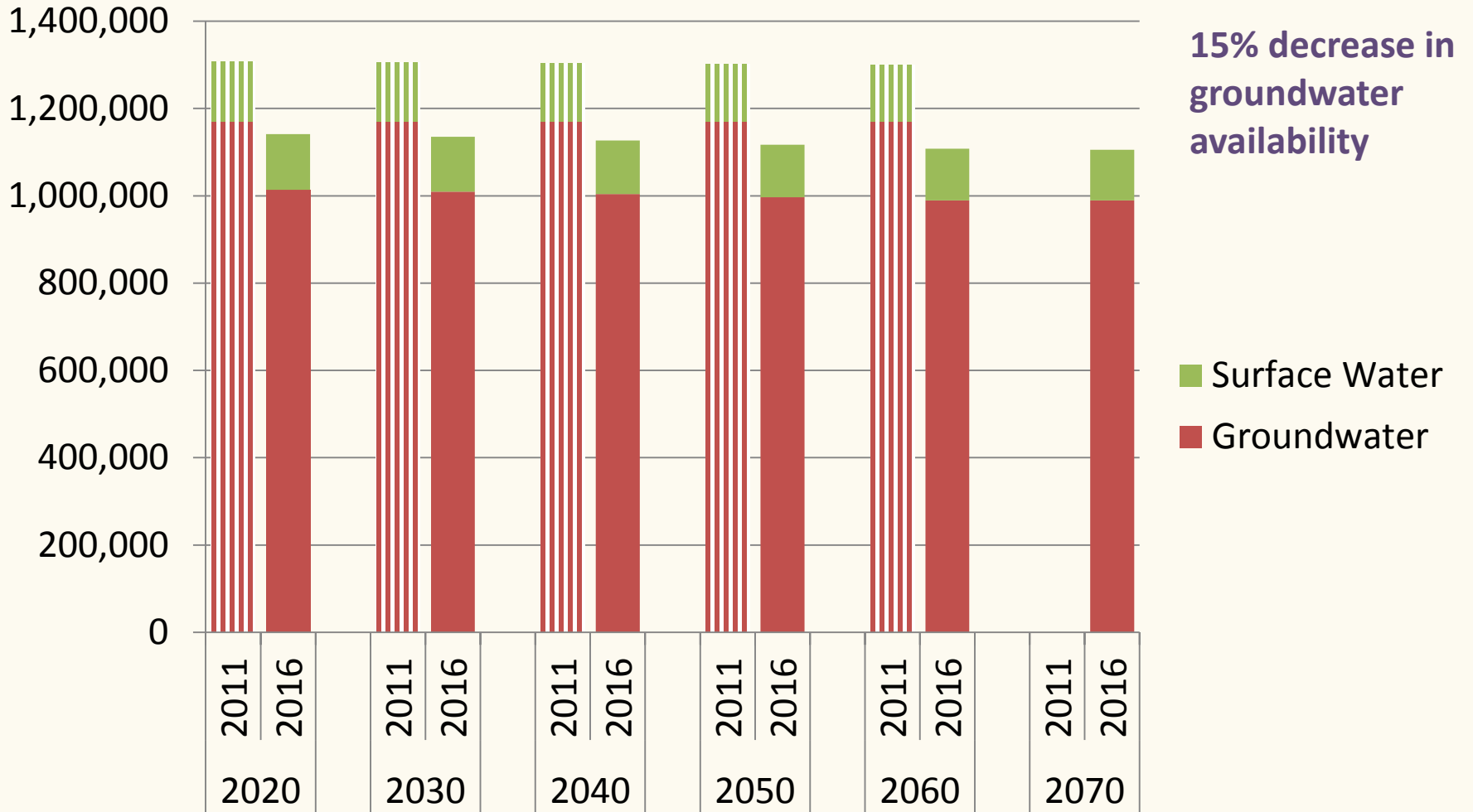
- Safe yield (WAM Run 3)
 - “0” supply to most reservoirs
 - Lakes Ivie, Brownwood and Red Bluff yields total 125,000 af/y
- Lake Brownwood has new safe yield (updated hydrology): 21,300 af/y

Considerations

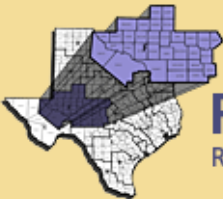
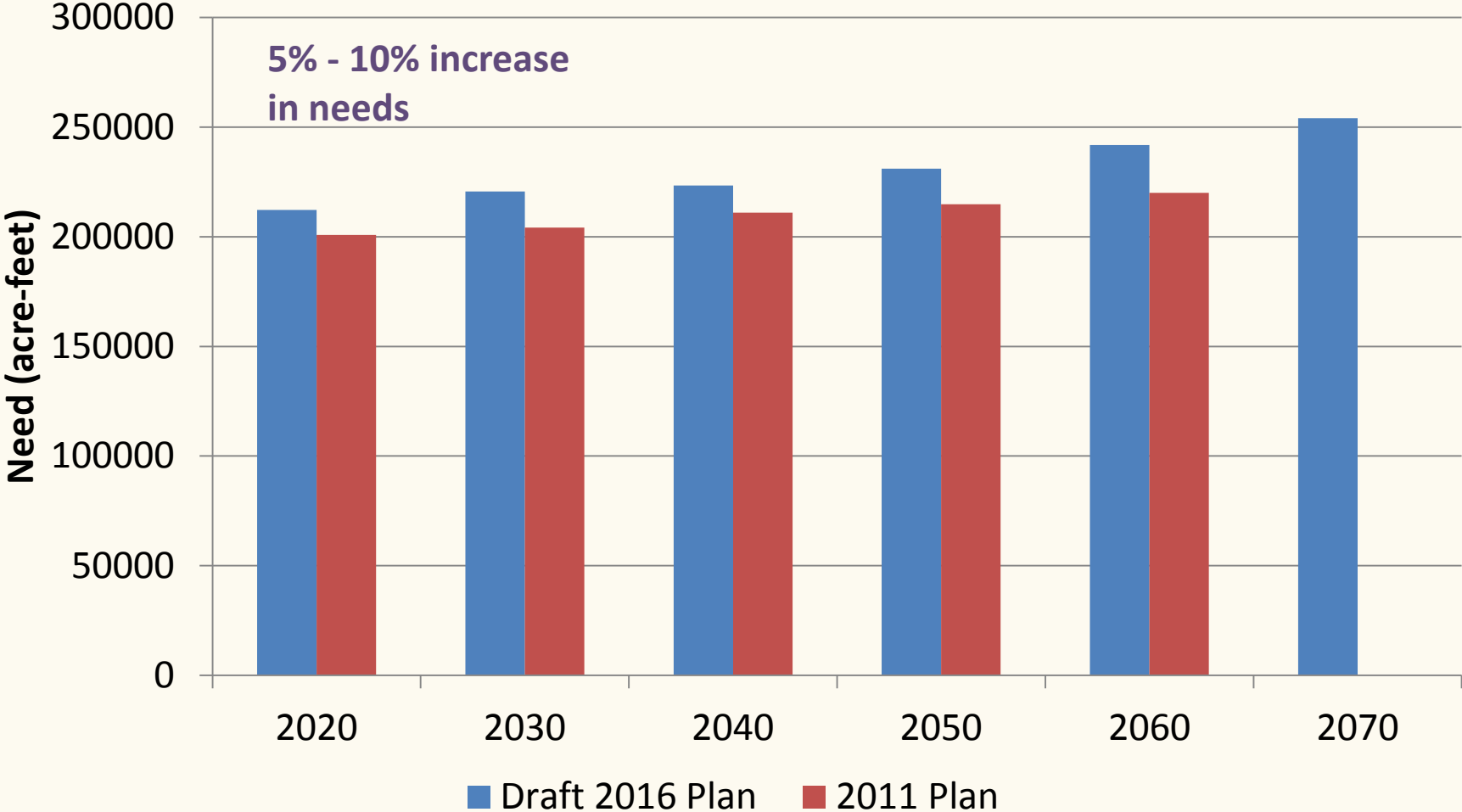
- Water treatment plant capacities
- Contracts
- Other infrastructure
- Permits



Source Availability



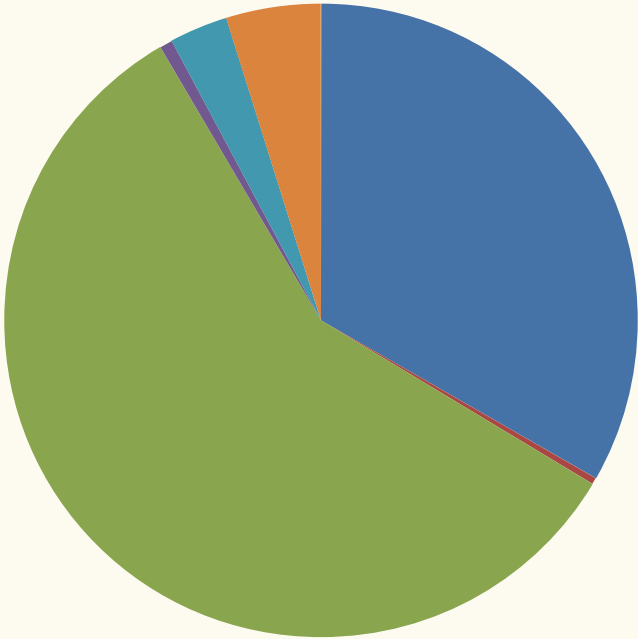
Region F Need



Region F Draft Need by Use Type

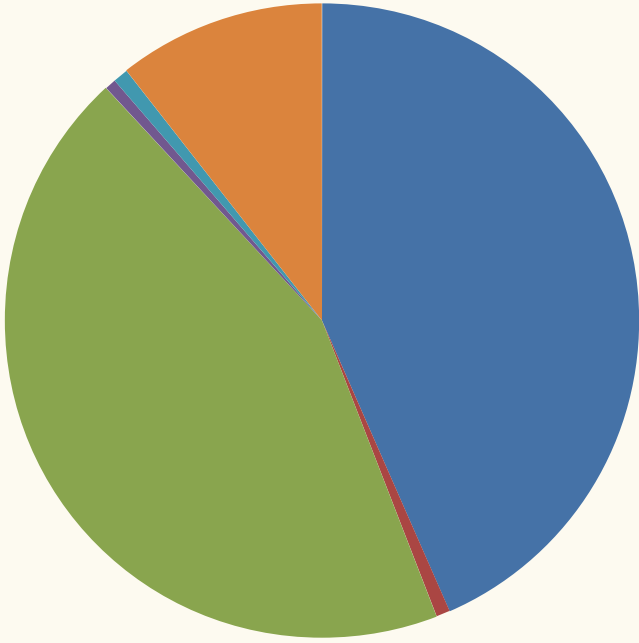
2020

212,000 acre-feet



2070

254,000 acre-feet



■ Municipal

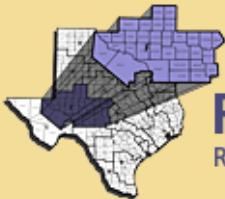
■ Irrigation

■ Mining

■ Manufacturing

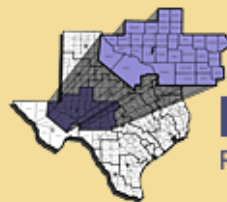
■ Livestock

■ Steam Electric Power



Factors Affecting Region F Needs

- **Higher Demands**
 - Increased mining demand
 - Increased population due to mining activity
 - Andrews, Midland, Miles, San Angelo, Colorado City, Snyder
- **Source availability**
 - Reservoir yields
 - MAGs



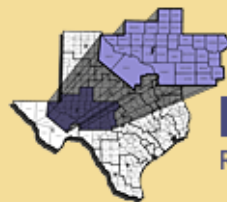
Significant Groundwater Supply Limitations

Aquifers

- Hickory
- Ogallala
- Dockum

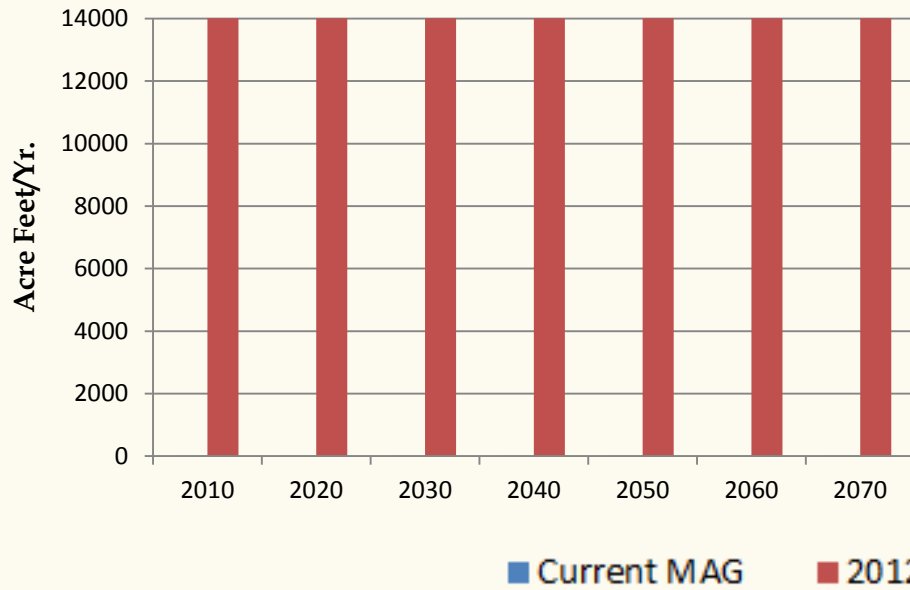
Counties

- Andrews
- Concho
- Howard
- Martin
- McCulloch
- Scurry

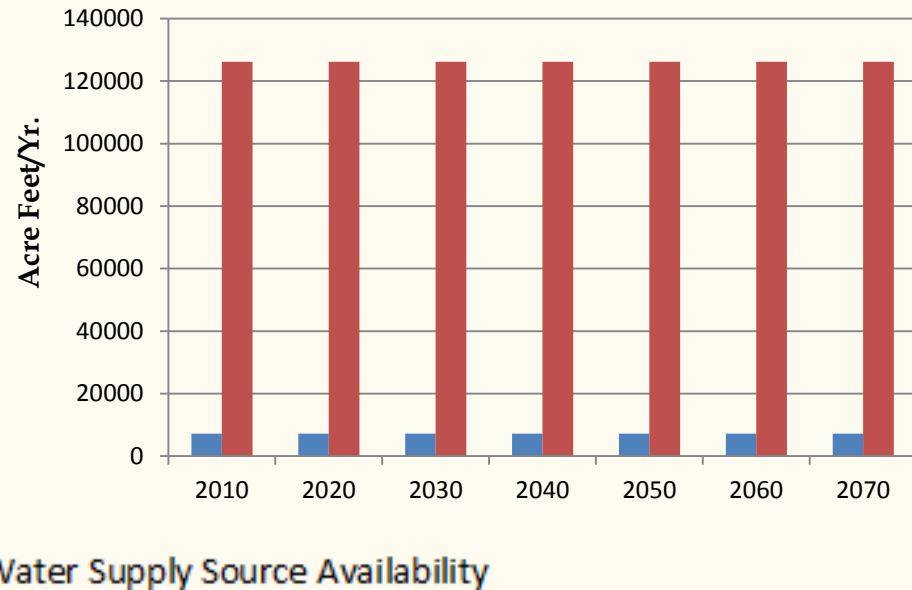


Hickory Aquifer MAGs

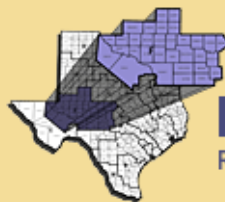
Concho County
GMA: 7
DFC: 7 feet drawdown



McCulloch County
GMA: 7
DFC: 7 feet drawdown



Impacts both local and out-of-county users

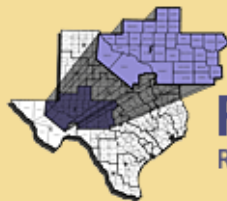
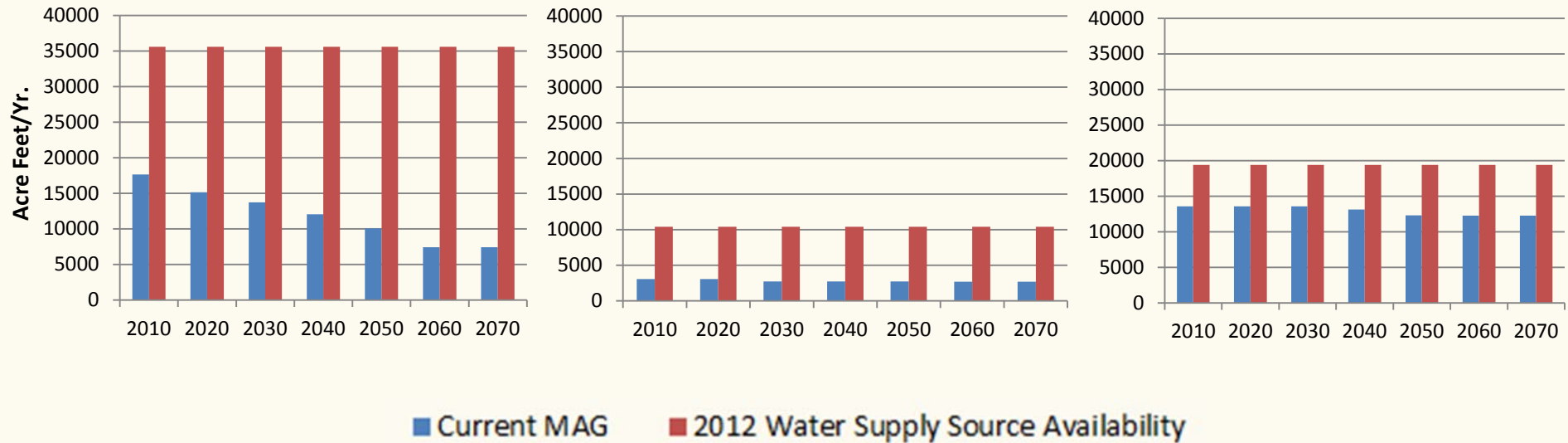


Ogallala-Edwards Trinity (Plateau) Aquifer MAGs

Andrews County
DFC: 6 feet drawdown

Howard County
DFC: 1 foot drawdown

Martin County
DFC: 8 feet drawdown

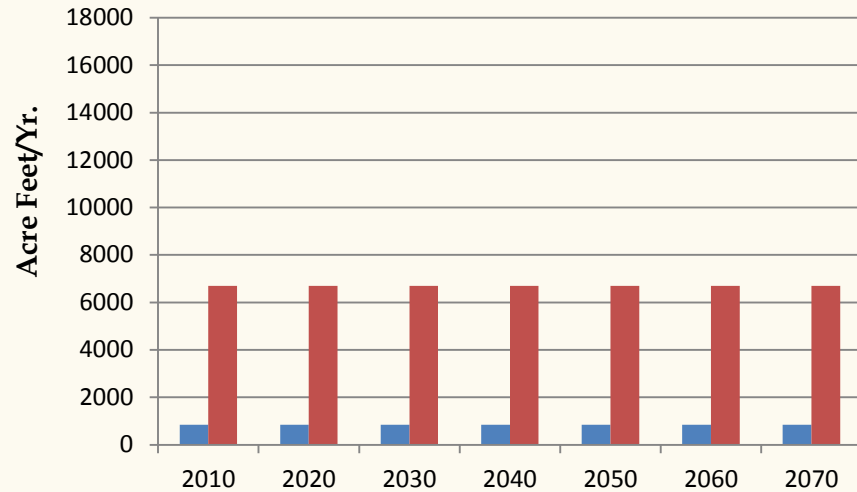


Dockum Aquifer

Andrews County

GMA: 2

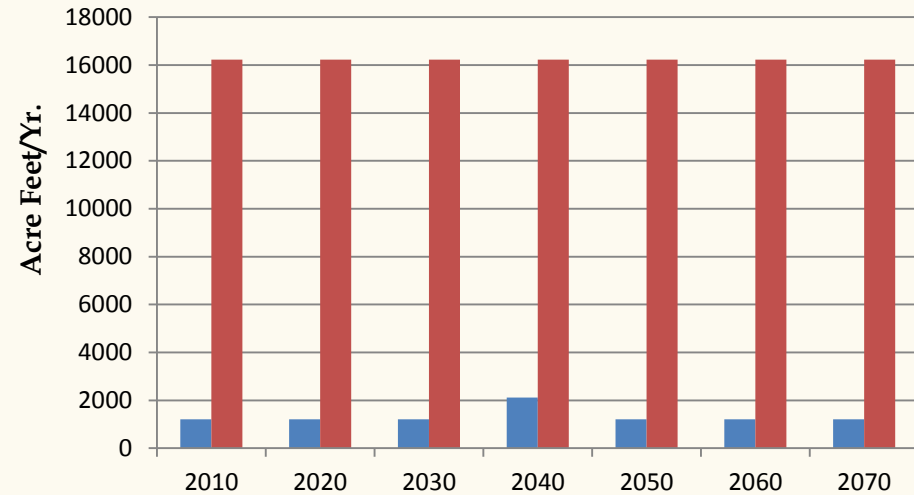
DFC: 23 feet drawdown



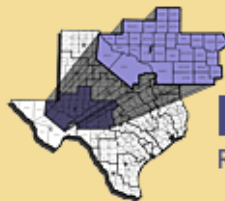
Scurry County

GMA: 7

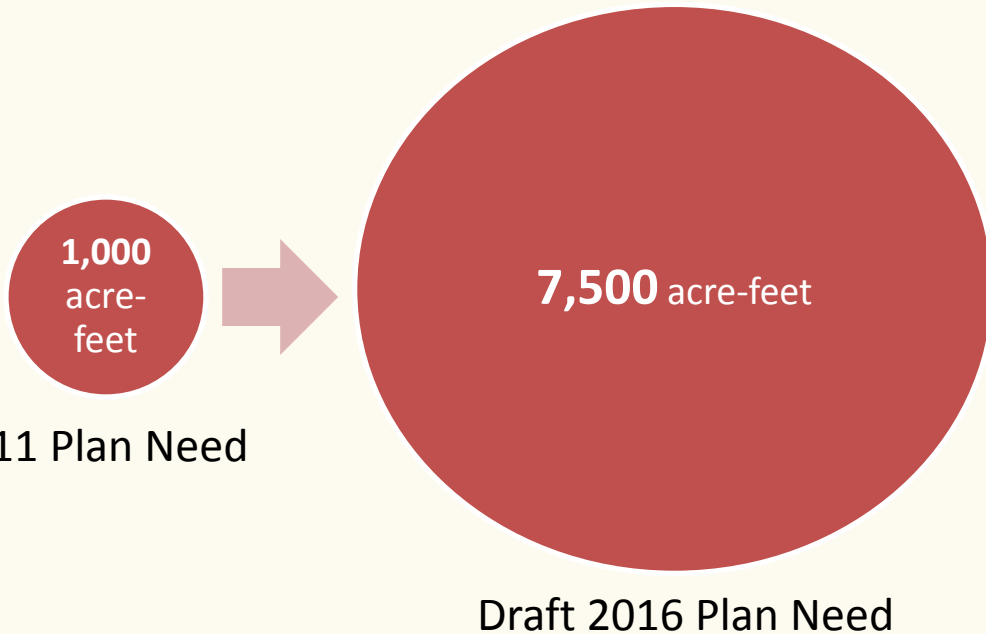
DFC: 4 feet drawdown



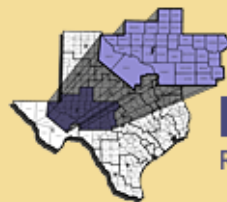
■ Current MAG ■ 2012 Water Supply Source Availability



Greater Municipal Needs



- **Andrews County**
 - City of Andrews
 - Higher demand
 - Demand for water from Ogallala will exceed available supply by 70% in 2060



Greater Municipal Needs

- **Concho County**

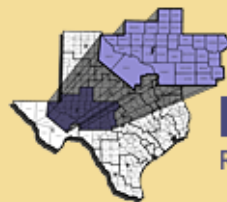
- City of Eden

- Hickory Aquifer has a MAG value of 1 AF/Y
 - Non-relevant supplies - TBD

- **McCulloch County**

- Demand for water from the Hickory Aquifer exceeds supply by about 40%

- Cities of Brady, San Angelo
 - Millersview-Doole WSC
 - County-Other

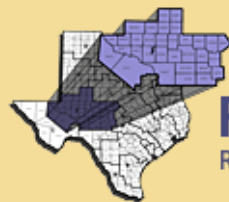


Higher Mining Need

- Higher mining demands
- Existing supplies were assumed to be at historical levels
- More information on current mining supplies is needed

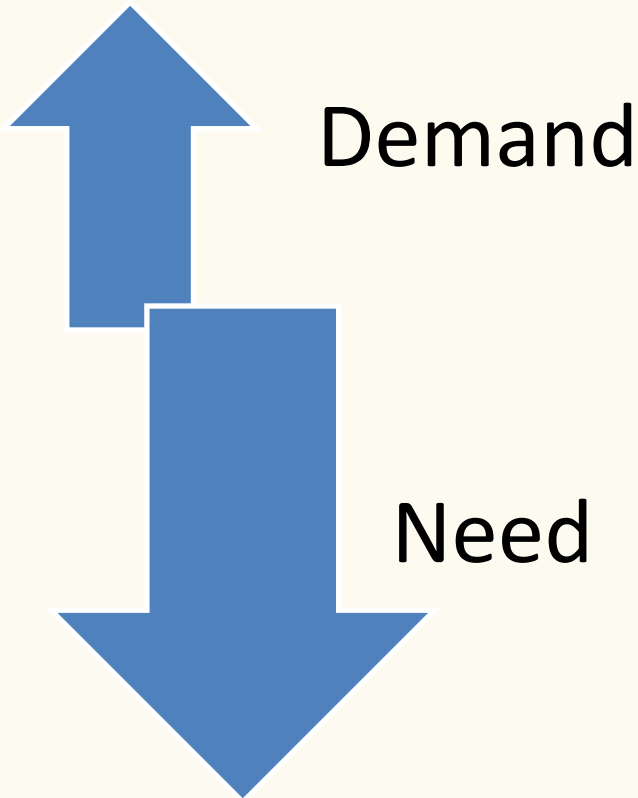


Image obtained from <http://www.parker-mcdonaldlaw.com>



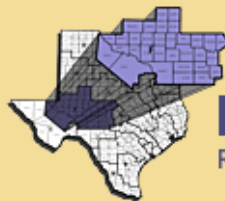
REGION F WATER PLAN
Regional Water Planning Group

Lower Irrigation Need



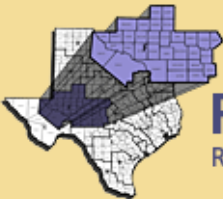
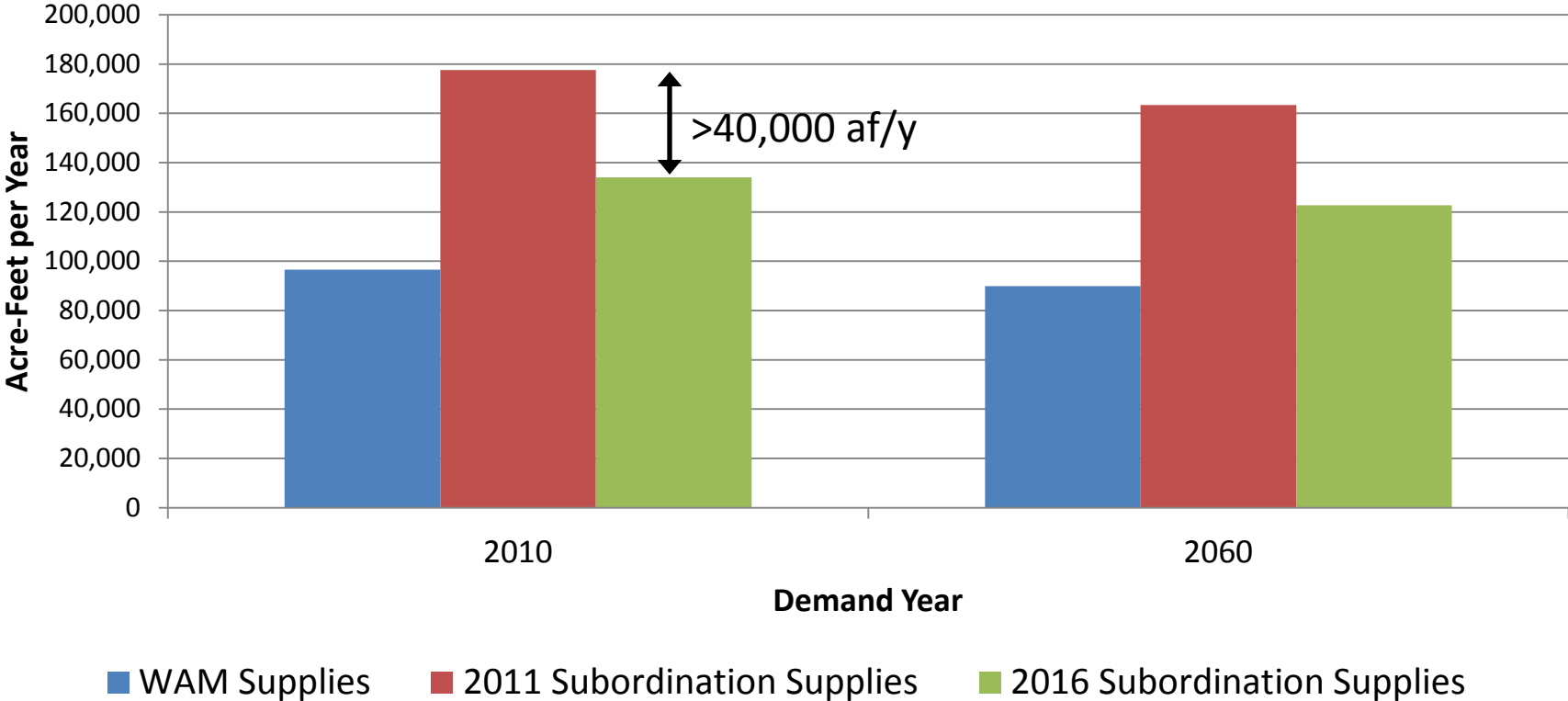
Despite an additional 20,000 AF/Y of irrigation demand, irrigation needs decreased by 30,000 AF/Y

- Greater groundwater availability in Glasscock and Upton Counties
- Lower demands in some counties with previously large shortages (Tom Green & Ward)



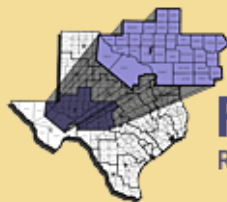
Subordination

Comparison of Colorado Basin Supply With and Without Subordination



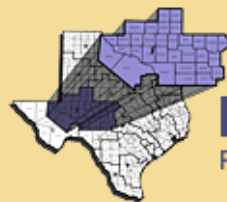
Counties with all Groundwater Allocated for Existing Supply

- Andrews County (Ogallala Aquifer)
- Borden County (Ogallala Aquifer)
- Concho County (Ellenburger- San Saba Aquifer, Hickory Aquifer, Lipan Aquifer)
- Howard County (Ogallala Aquifer)
- Martin County (Ogallala Aquifer)
- McCulloch County (Hickory Aquifer)
- Scurry County (Dockum Aquifer)



Refine Needs Analysis

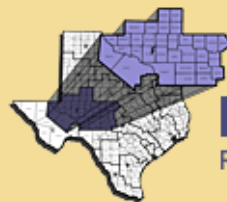
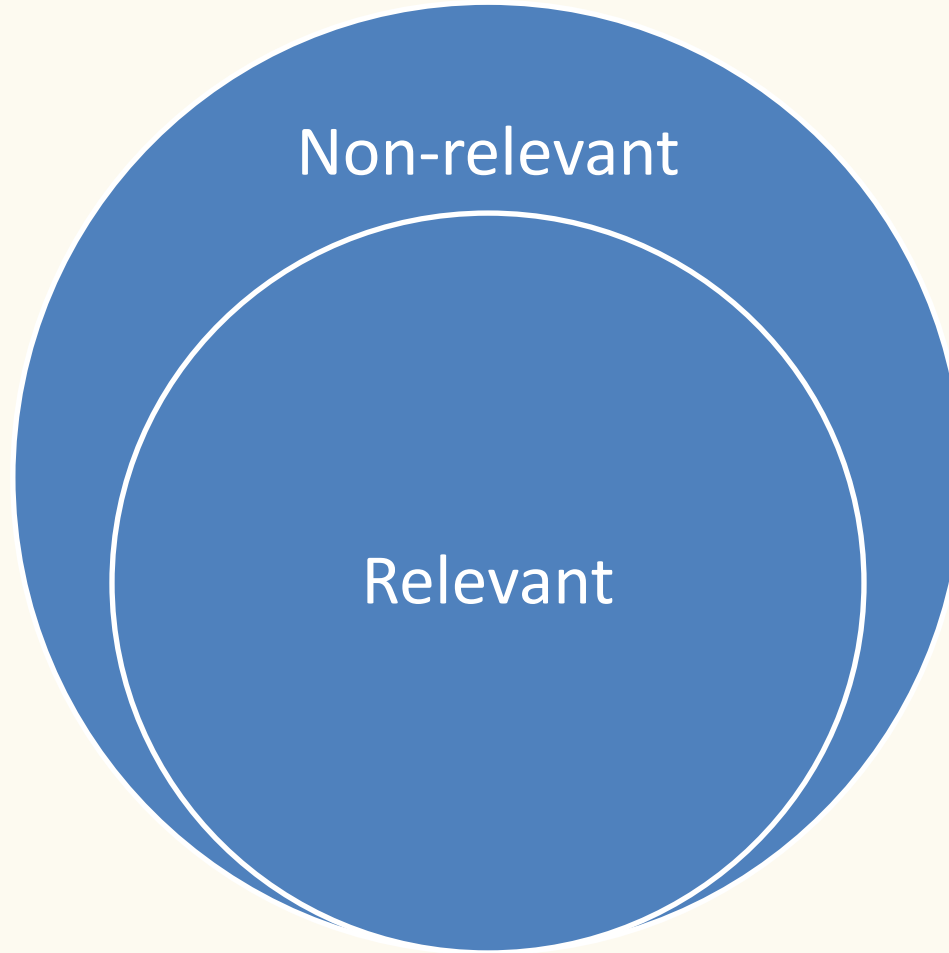
- Non-relevant groundwater supplies
 - Other aquifer
- Refine groundwater supplies for mining
 - GCDs, wholesale water providers (WWPs)
- Meet with WWPs
 - contracts
 - Current supplies



GROUNDWATER SUPPLIES



Groundwater



In general, what are relevant* and non-relevant* aquifers?

- **Relevant:**

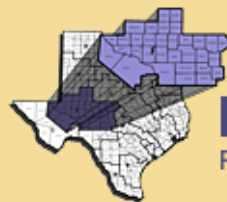
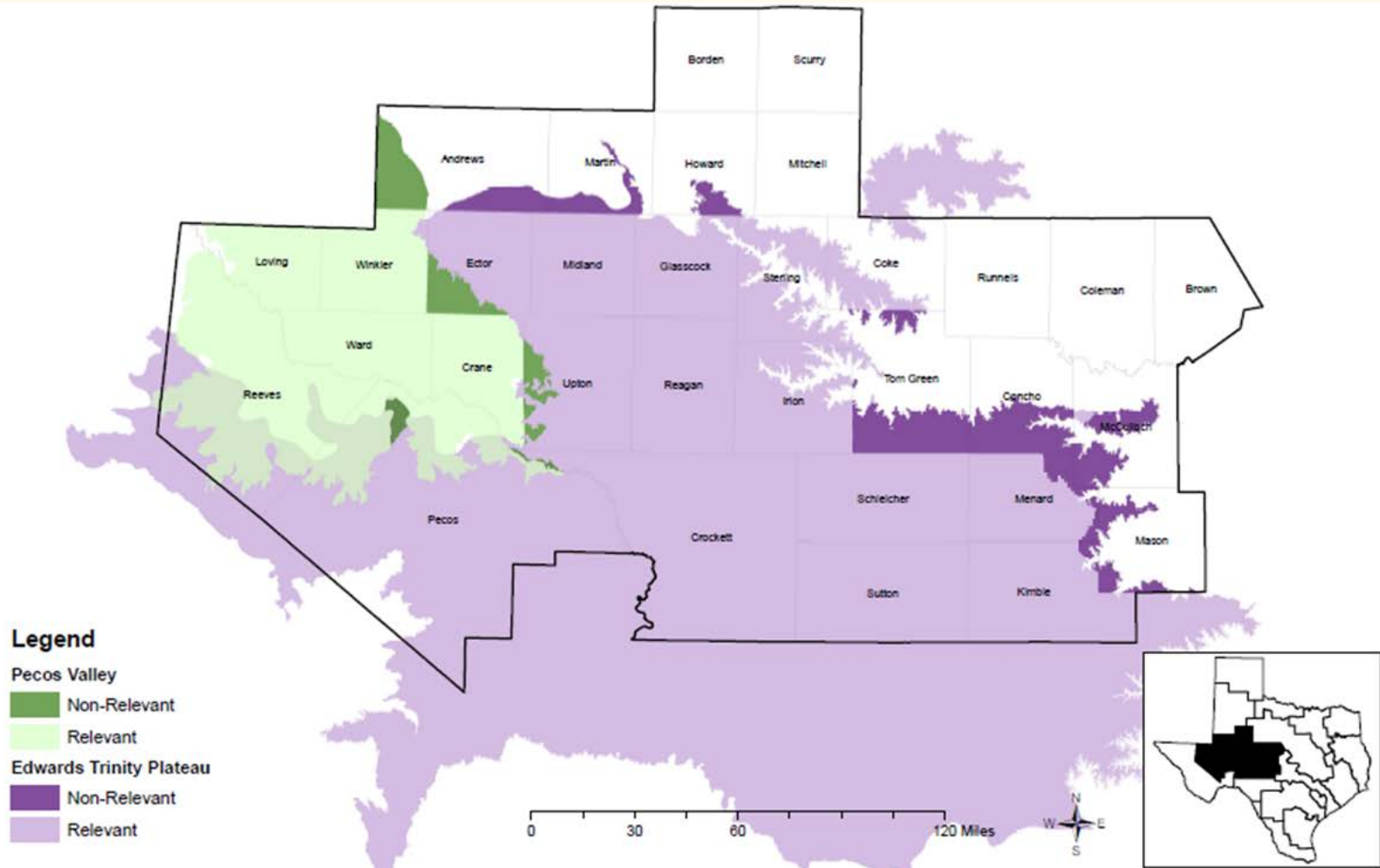
- Major (9) and minor (21) aquifers defined by TWDB*
- Any other aquifer where groundwater production is now or expected to be managed by GCD (i.e., permitted)

- **Non-Relevant:**

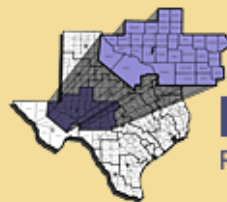
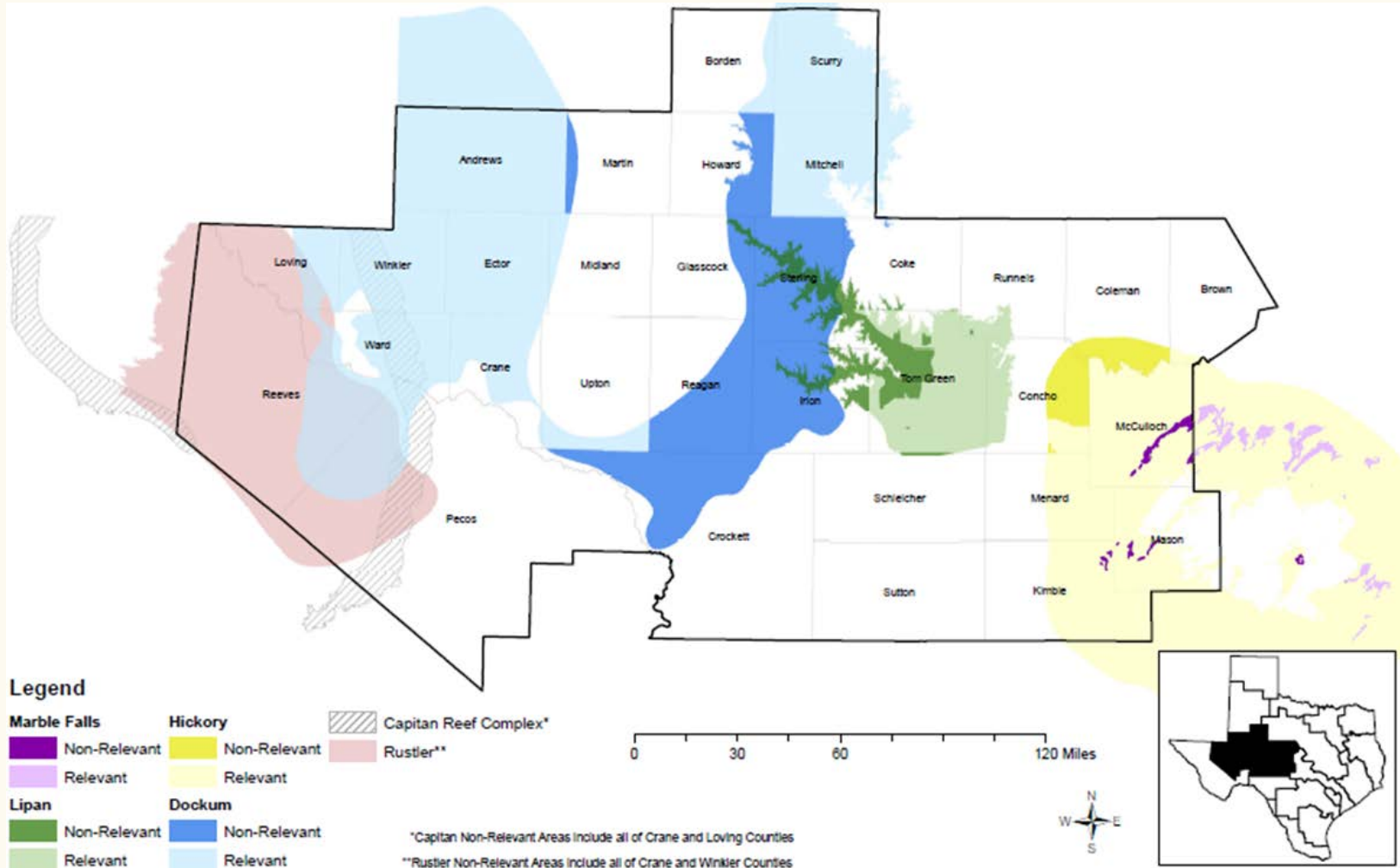
- No large-scale production anticipated
- Production assumed not to affect conditions in relevant portions of aquifer(s)
- Look at proposed definition in draft TAC Chapter 356 rules (next slide)

*Fine print caution: these statements are “common practice” but not legally defined in statute or current rule

Non Relevant Major Aquifers in Region F

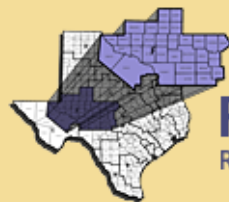


Non Relevant Minor Aquifers in Region F

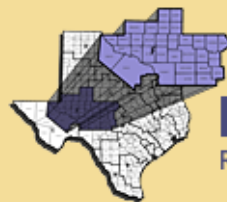
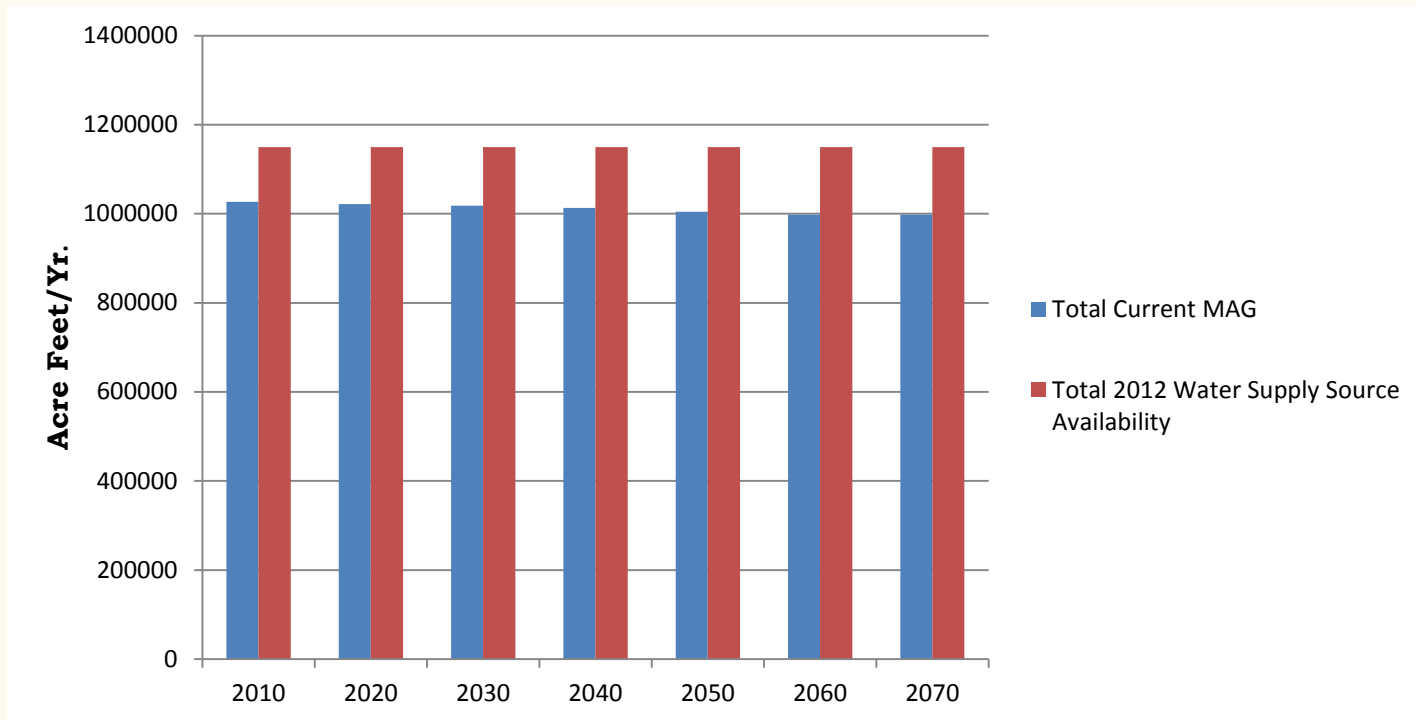


Groundwater Supplies

- Developed through DFC Planning Process:
 - Relevant Aquifers – Modeled Available Groundwater (MAG)
- Determined by RWPG:
 - Non-relevant Aquifer supplies
 - Other Undifferentiated Aquifer supplies



Total Modeled Available Groundwater vs. Total 2012 Water Supply Source Availability

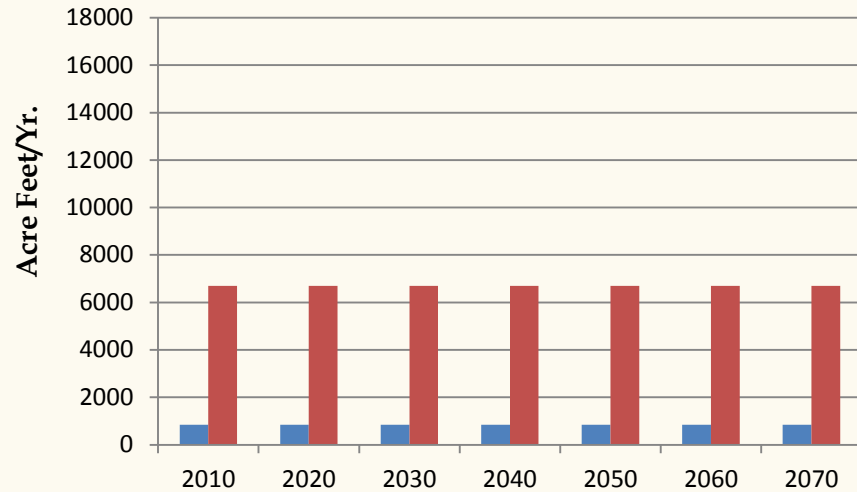


Dockum Aquifer

Andrews County

GMA: 2

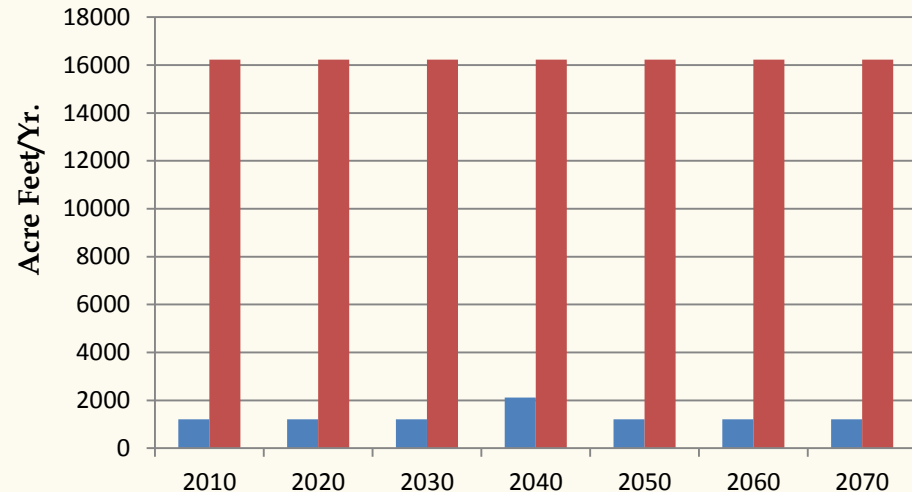
DFC: 23 feet drawdown



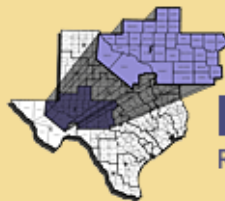
Scurry County

GMA: 7

DFC: 4 feet drawdown

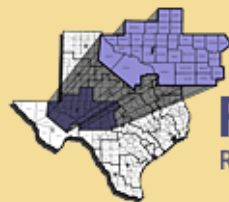


■ Current MAG ■ 2012 Water Supply Source Availability



Caroline Runge

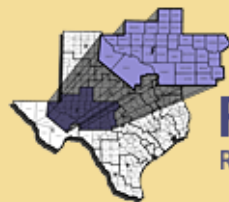
DFC PLANNING PROCESS



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Regional Water Planning Group

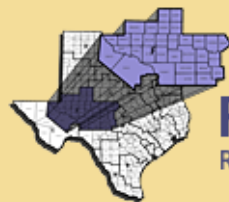
Non-relevant Areas and Other Aquifers

REVIEW AND APPROVAL OF GROUNDWATER SUPPLIES



REGION F WATER PLAN
Regional Water Planning Group

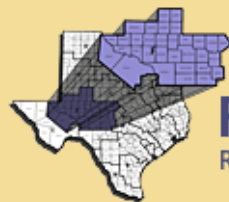
DRAFT SCOPE OF WORK AND BUDGET FOR WATER MANAGEMENT STRATEGIES (TASK 4D)



REGION F WATER PLAN
Regional Water Planning Group

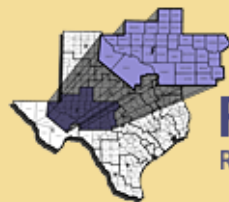
Water Management Strategy (WMS) Development

- Subordination
- Conservation
- Desalination
- Infrastructure Improvements
- New Groundwater Development
- Voluntary Re-distribution
- New Surface Water



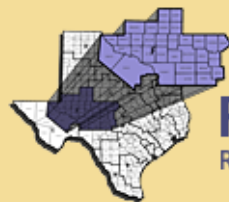
Water Management Strategies

- 30 Strategies from 2011 Region F Plan to be retained
- 6 strategies have been implemented:
 - CRMWD Ward County well field expansion
 - Big Spring reuse
 - Midland T-Bar ranch well field development
 - Phase 1 – Hickory well field – San Angelo
 - Eden RO plant (in progress)
 - Richland SUD interconnection



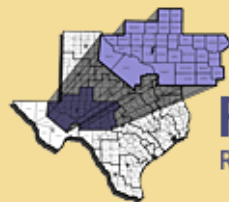
New Water Management Strategies

- West Texas Water Partnership (Midland, San Angelo)
- Reuse Projects (Midland, Brownwood, Crockett Co WCID #1, non-municipal users)
- Infrastructure Improvements with Purchase (Bronte)
- Desalination:
 - CRMWD Diverted water system
 - Odessa Brackish desalination
- New groundwater with ASR (CRMWD)
- Red Arroyo surface water project



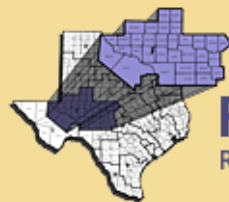
New Water Management Strategies

- Additional groundwater development (new needs)
- City of Junction dredging of intake storage
- Mining
 - New groundwater
 - Voluntary Re-distribution (sales)
 - Reuse

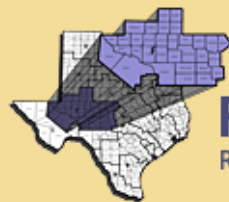


Water Management Strategy Scope

- Includes 7 Major Strategy Types:
 - Subordination
 - Conservation
 - Desalination
 - Infrastructure Improvements
 - New Groundwater Development
 - Voluntary Re-distribution
 - New Surface Water
- Total Fee - \$303, 293



PROCESS FOR REGIONAL SUPPORT OF NEW OR CHANGED RECOMMENDED WATER MANAGEMENT STRATEGIES



REGION F WATER PLAN
Regional Water Planning Group

DRAFT

NEW WATER MANAGEMENT STRATEGY INFORMATION
(Additional information can be attached separately if needed)

ENTITY: _____

NAME OF STRATEGY: _____

DATE: _____

Please provide a brief description of the water management strategy and why this strategy is needed at this time.

Source of water (include aquifer name and general location if groundwater): _____

Is the proposed source of water identified in the current regional water plan for the proposed use?:

Total amount of new water supply (acre-feet): _____

If purchased water, provide the name of the seller: _____

List of users and potential users of water from this water management strategy: _____

Please provide the following information as required for regional water planning:

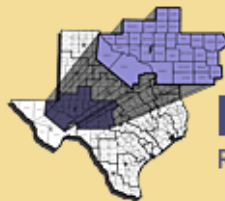
1. Capital Cost _____
2. Reliability _____
3. Quality _____
4. Environmental impacts _____

5. Impacts to rural and agricultural areas _____

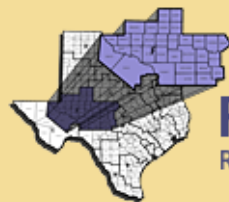
6. Impacts to natural resources _____

7. Impacts to other water management strategies _____

Please provide any other information pertinent to this strategy: _____



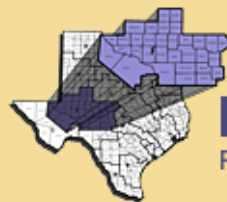
PROVISIONS OF HOUSE BILL 4 AND IMPLICATIONS FOR REGION F



REGION F WATER PLAN
Regional Water Planning Group

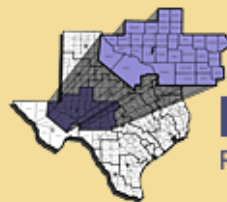
Background of House Bill 4

- **2012 State Water Plan:**
 - \$53 billion over the next 50 years to meet the need for water in Texas
- **2013 Texas Legislature:**
 - HB 4 authored by Rep. Allan Ritter
 - Bill passes both houses unanimously
 - Signed into law May 28, 2013



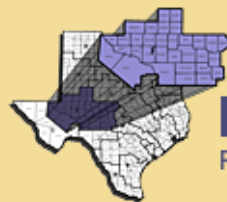
House Bill 4 Funding Provisions

- Article 1: Overhaul of TWDB
- Article 2: Establishes State Water Implementation Fund for Texas (SWIFT)
 - \$2 billion from Rainy Day Fund
 - SWIFT serves as a water infrastructure bank

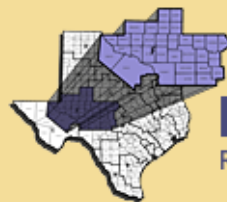
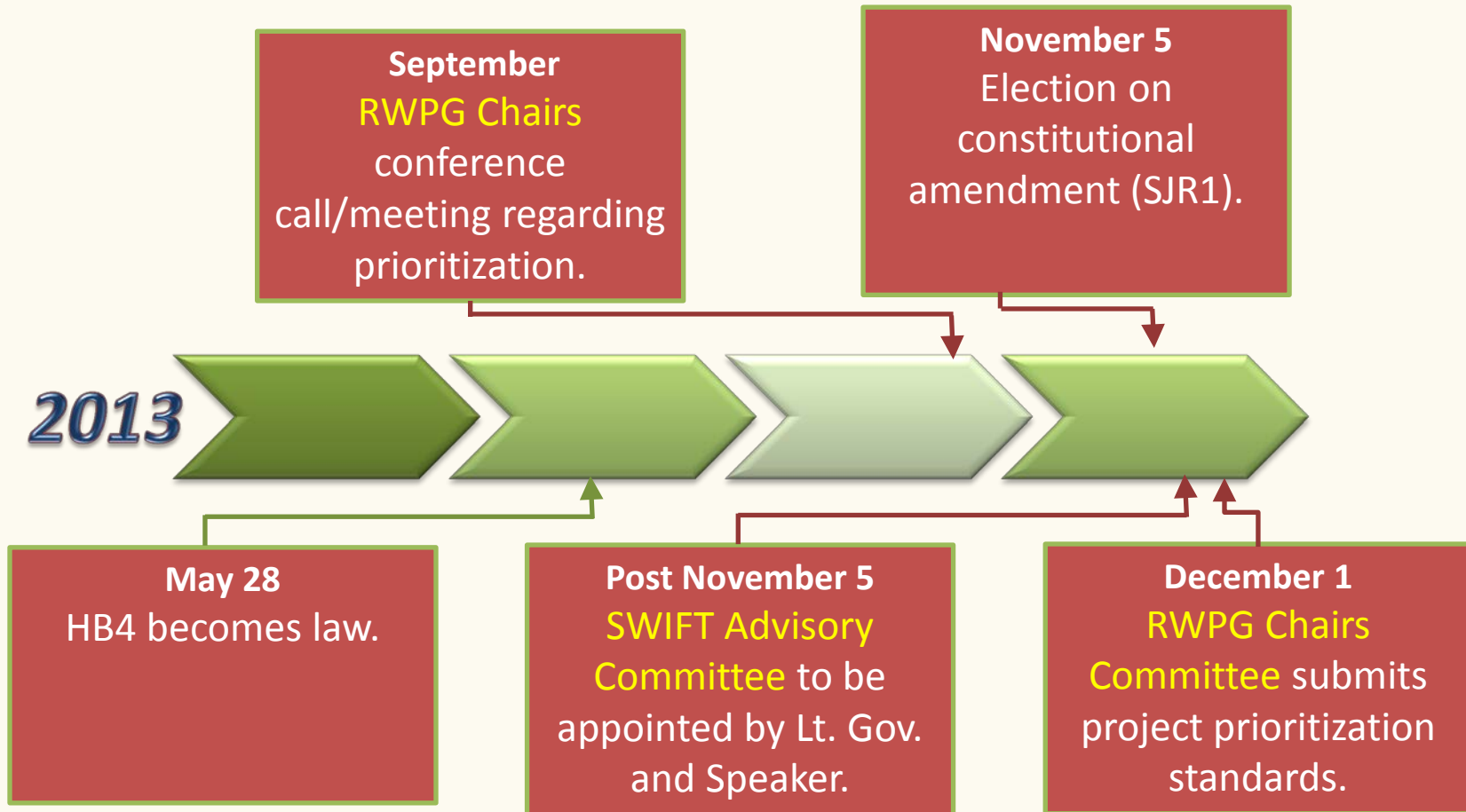


House Bill 4 Funding Provisions

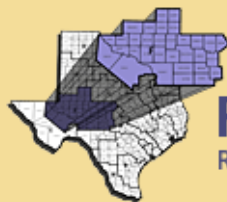
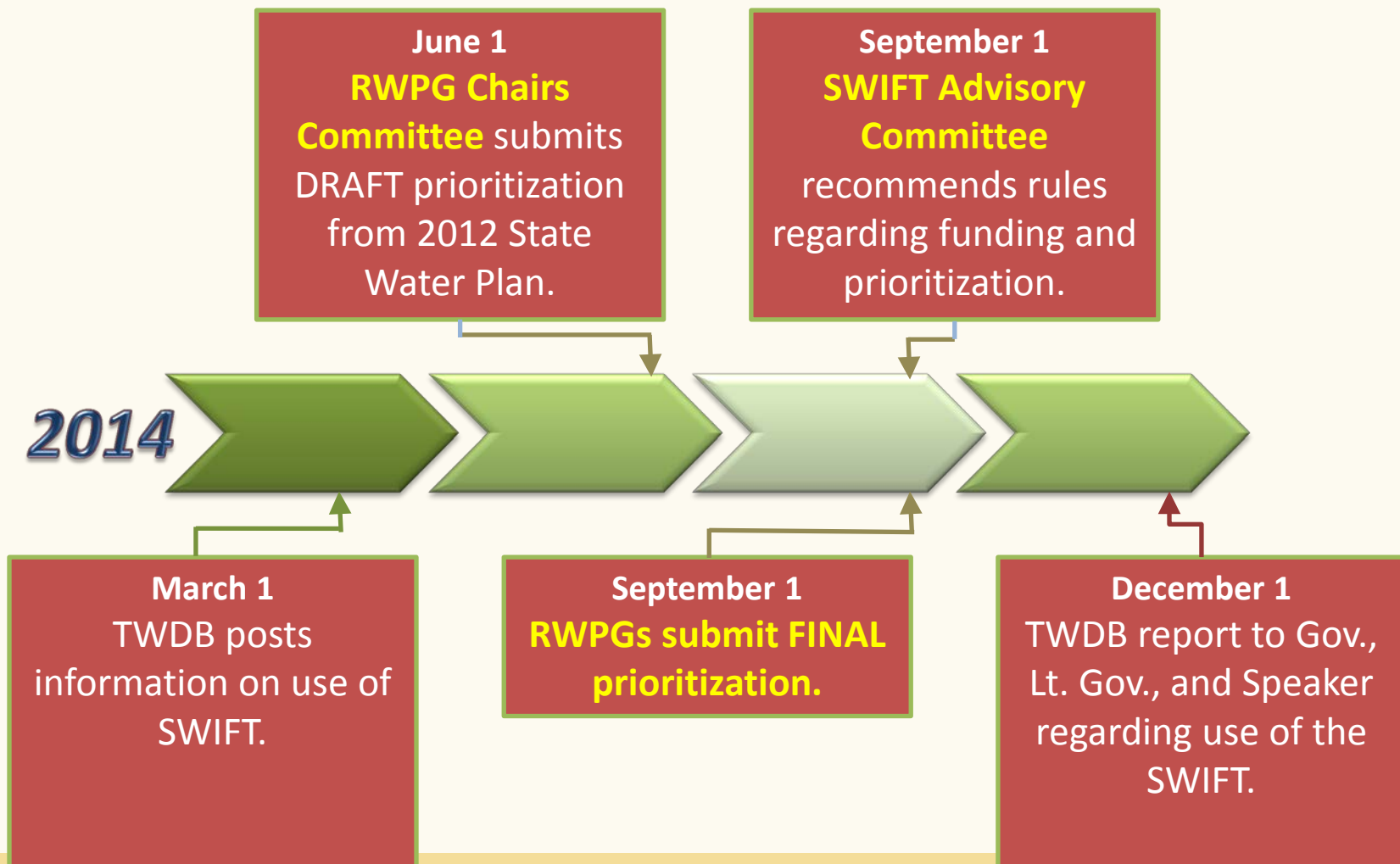
- Voter approval of funding required – Nov. 5, 2013 (SJR 1)
 - **Proposition 6 on the ballot**
- Funding for:
 - reservoirs
 - conservation programs
 - water infrastructure projects
- May not be used for grants
- 10% for rural and agricultural projects
- 20% for conservation and reuse



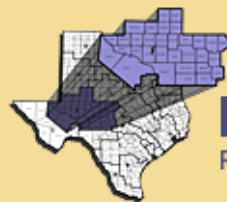
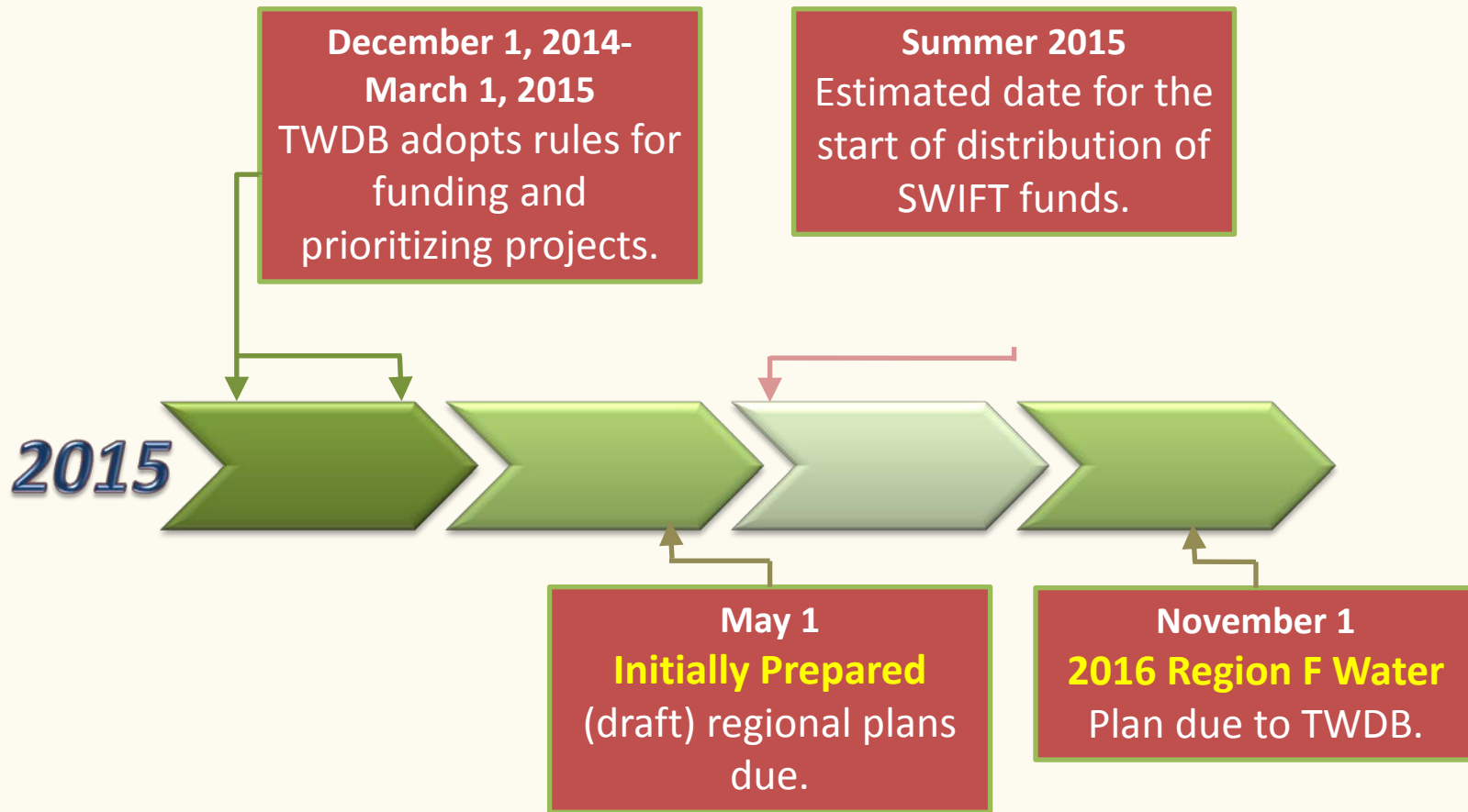
Implementation Schedule



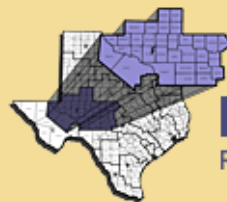
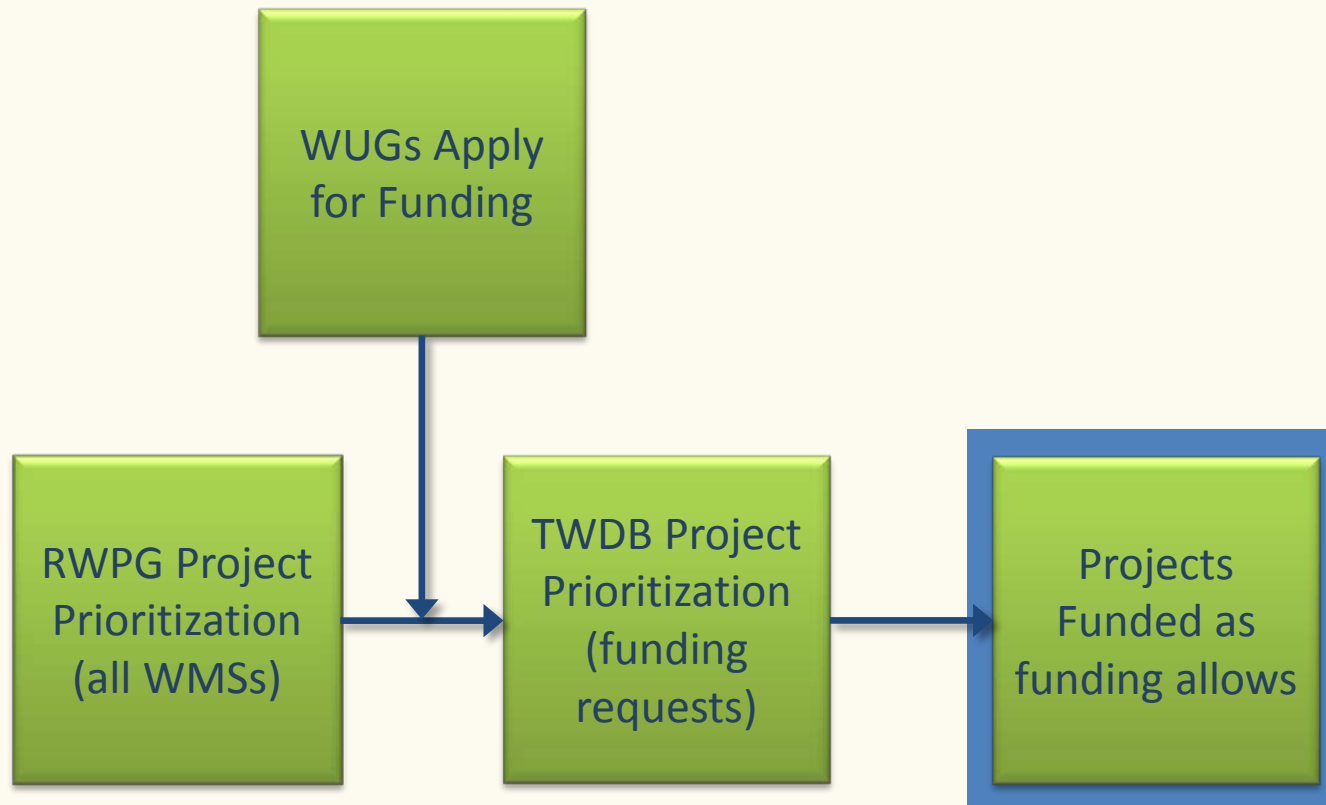
Implementation Schedule



Implementation Schedule

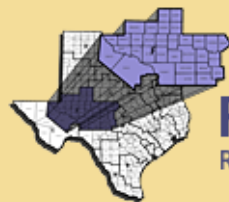


Project Prioritization and Funding Process



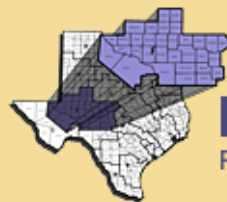
RWPG Project Prioritization

- RWPG Stakeholder Committee will be formed
- Must consider the following criteria
 - Decade when needed
 - Feasibility – availability, water rights, practicability
 - Viability – comprehensive solution
 - Sustainability
 - Cost effectiveness
 - Long term & short term needs



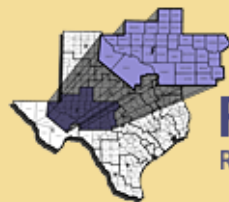
TWDB Project Prioritization

- Point system for prioritization
- Prioritization Standards:
 - Large population
 - Diverse urban and rural population
 - Regionalization
 - Meets high percentage of water needs



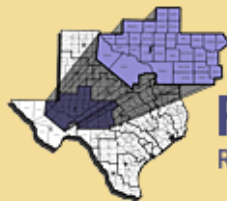
TWDB Project Prioritization

- Other Considerations:
 - Local financial contribution
 - Ability to repay
 - Emergency need
 - “Shovel ready”
 - Other funding
 - Water conservation
 - Water loss prevention
 - **RWPG** prioritization of the project



RWPG Project Prioritization

- **Region F Input:**
 - Point system or Priority groups (such as high, moderate and low) or Other method
 - Other factors:
 - Emergency need
 - Time to implement
 - Conservation
 - Others
 - Project definition
 - Categorize projects:
 - Rural or urban



Implications for Region F

- Loan money by spring/summer 2015 for water infrastructure – if voter approval on November 5
- To be eligible, projects must be recommended in Regional Water Plan
- RWPG will be responsible for prioritization of projects
- May require additional coordination between regions:
 - For projects that move water from one region to another
 - Still being decided

