



Region C Water Planning

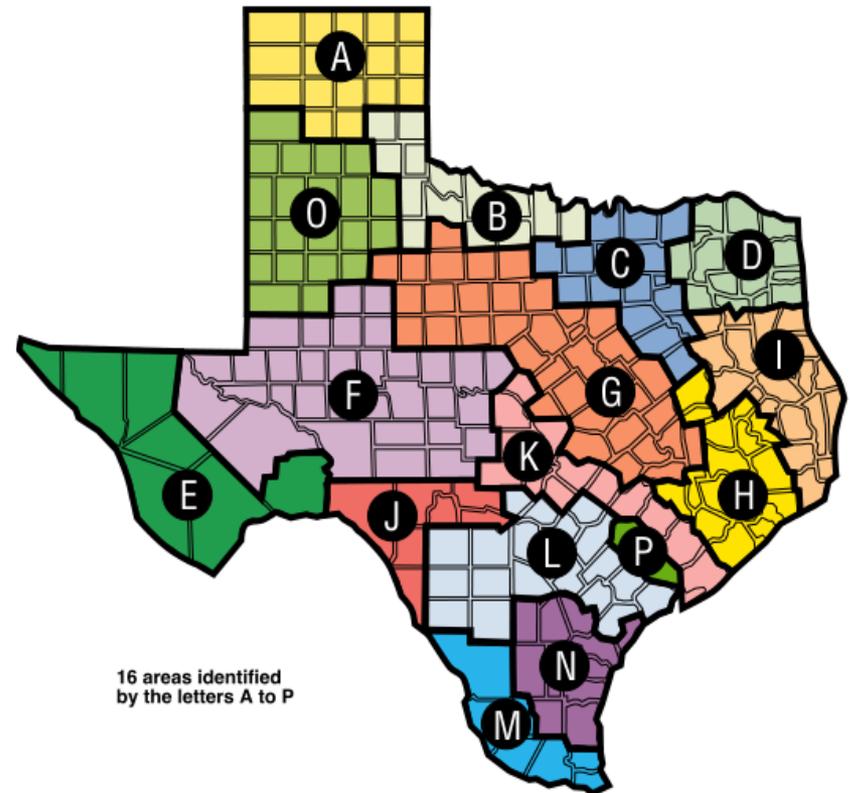
North Central Texas Council
of Governments
January 28, 2016



State Water Planning Effort

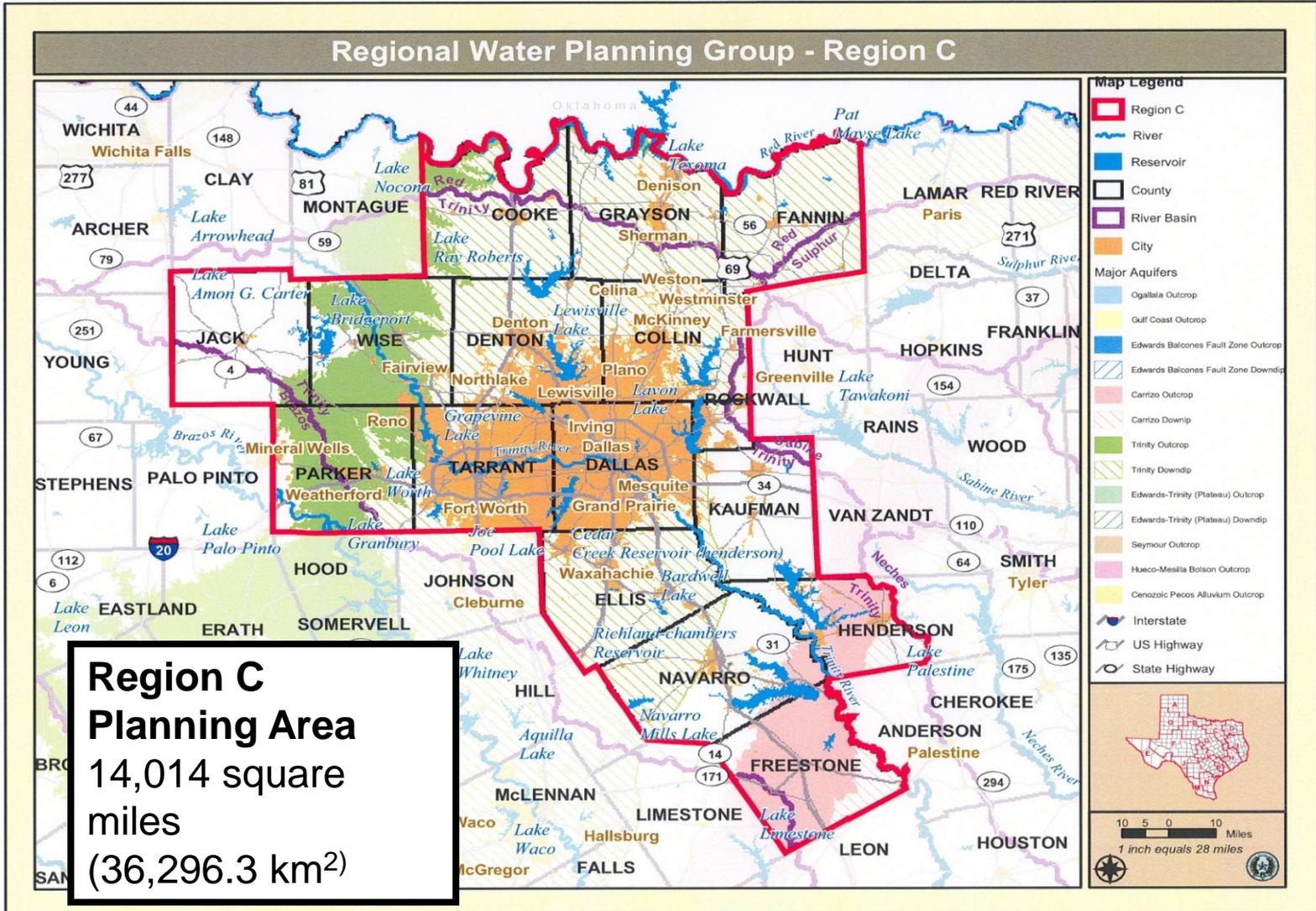
- Senate Bill 1 passed by the 1997 Legislature
- Spurred by 1996 drought
- “Bottom Up” water planning process, with a report every 5 years
- Texas Water Development Board
 - Adopted water planning rules
 - Set out 16 regions for planning
 - Dallas is in Region C
- State Water Plan due to Governor and Legislature in 2017 to meet the State Water Plan Schedule
 - Council approved water management strategies provided to Region C January 2015
 - Region C Water Plan submitted to Texas Water Development Board November 2015
 - TWDB to Submit State Water Plan to Legislature in January 2017

Regional Water Planning Areas



16 areas identified
by the letters A to P

Regional Water Planning Group - Region C



Map created by C. Archuleta, Texas Water Development Board, Data Resources Division, GIS Section. L:\projects\RI\OITS\archuleta\Maps_ArcGIS\MXD

Region C Water Planning Group

- Jo M. (Jody) Puckett, Chair
- Russell Laughlin, Vice Chair
- Kevin Ward, Secretary
- David Bailey
- John Carman
- Bill Ceverha
- Gary Douglas
- James Hotopp
- Tom Kula
- Harold Latham
- John Lingenfelder
- GK Maenius
- Howard Martin
- Vacant
- Steve Mundt
- Bob Riley
- Drew Satterwhite
- Bob Scott
- Gary Spicer
- Connie Standridge
- Jack Stevens
- Dr. Tom Woodard

Municipalities
Industry
River Authority
GMA 12
Municipalities
Public
GMA 11
Municipalities
Water Districts
GMA 8
Public
Counties
Municipalities
Water Utilities
Small Business
Environment
Water Districts
Environment
Electric Generating Utilities
Water Utilities
Water Districts
Agriculture

GMA – Groundwater Management Area



Review of Approved 2016 Region C Water Plan Including Comparisons to 2011 Region C Water Plan



2016 Region C Water Plan

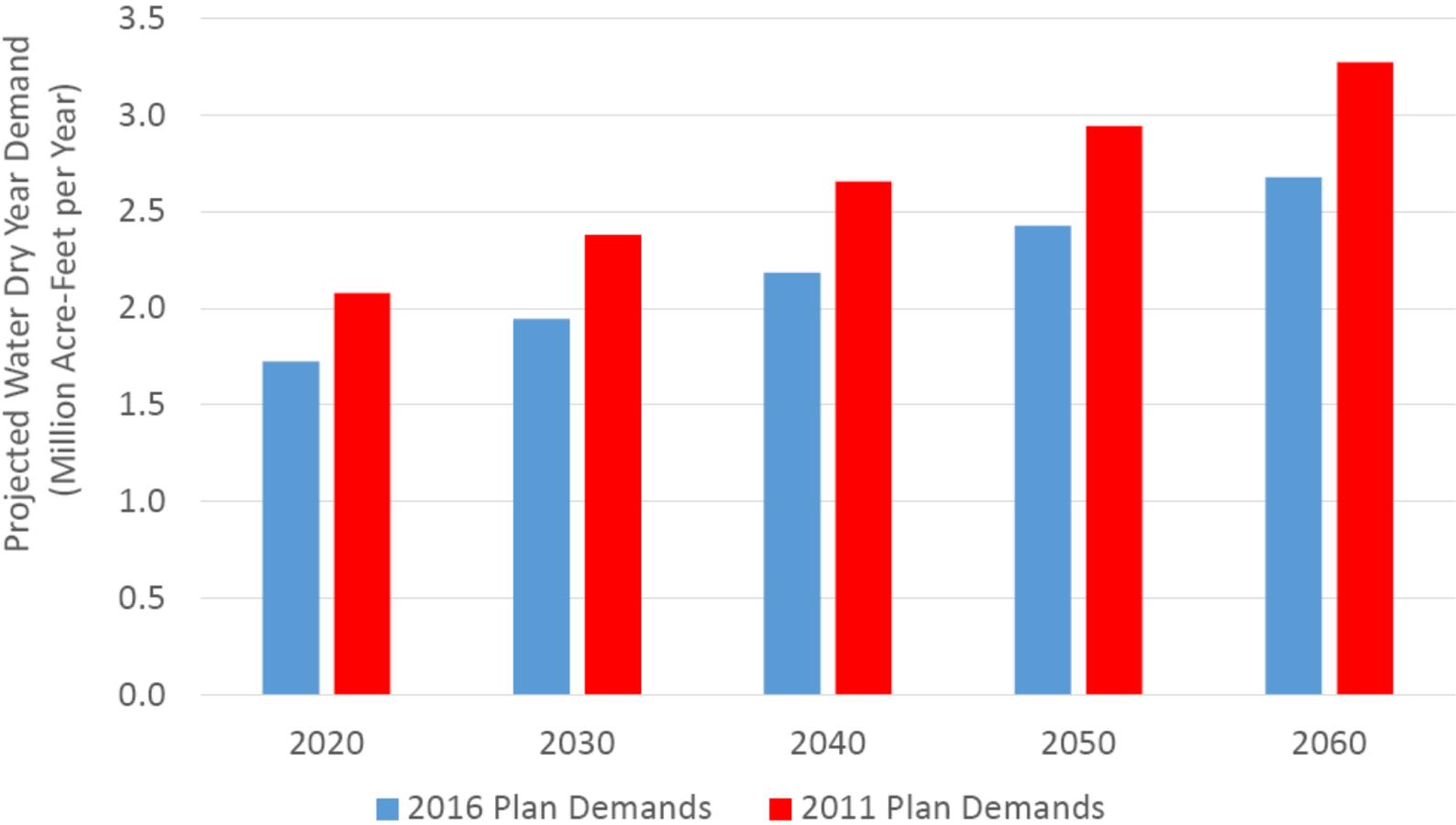
- Approved by Region C on November 9, 2015
- Submitted to Texas Water Development Board
- Regional Water Plan contains:
 - Description of the Region
 - Population and water demand projections
 - Currently available water supply
 - Identification of water needs
 - Identification, Evaluation & Selection of water management strategies (WMS)
 - Impacts of regional plan
 - Drought responses
 - Public Participation
 - Implementation and comparison to previous Regional Water Plan

Population and Water Demand

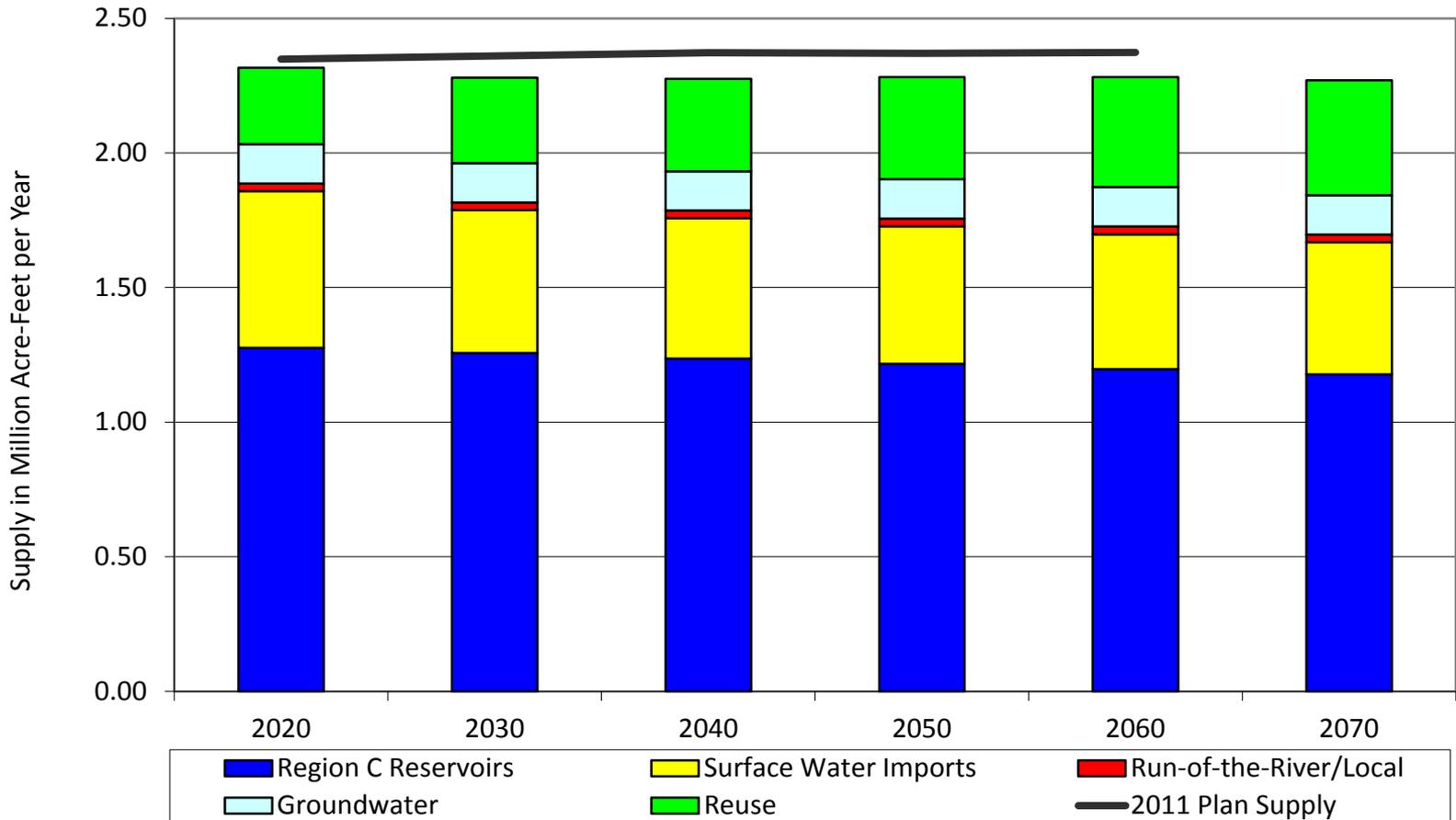
- Population
 - 2020 -7.5 million
 - 2070 –14.3 million
- Per Capita
 - TWDB required use of 2011 Historical gpcd
 - 2011 was not worst recent drought year for much of Region C
 - TWDB allowed corrections to 2011 data & limited use of average 2006, 2008, 2011 gpcd
- 2011 Plan –2060 gpcd = 200*
- 2016 Plan –2060 gpcd = 165*
- 2060 Total Demand
 - 2011 Plan –3.27 million ac-ft/yr
 - 2016 Plan –2.68 million ac-ft/yr
 - Difference –decrease of 590,000 ac-ft/yr

*before conservation & reuse strategies

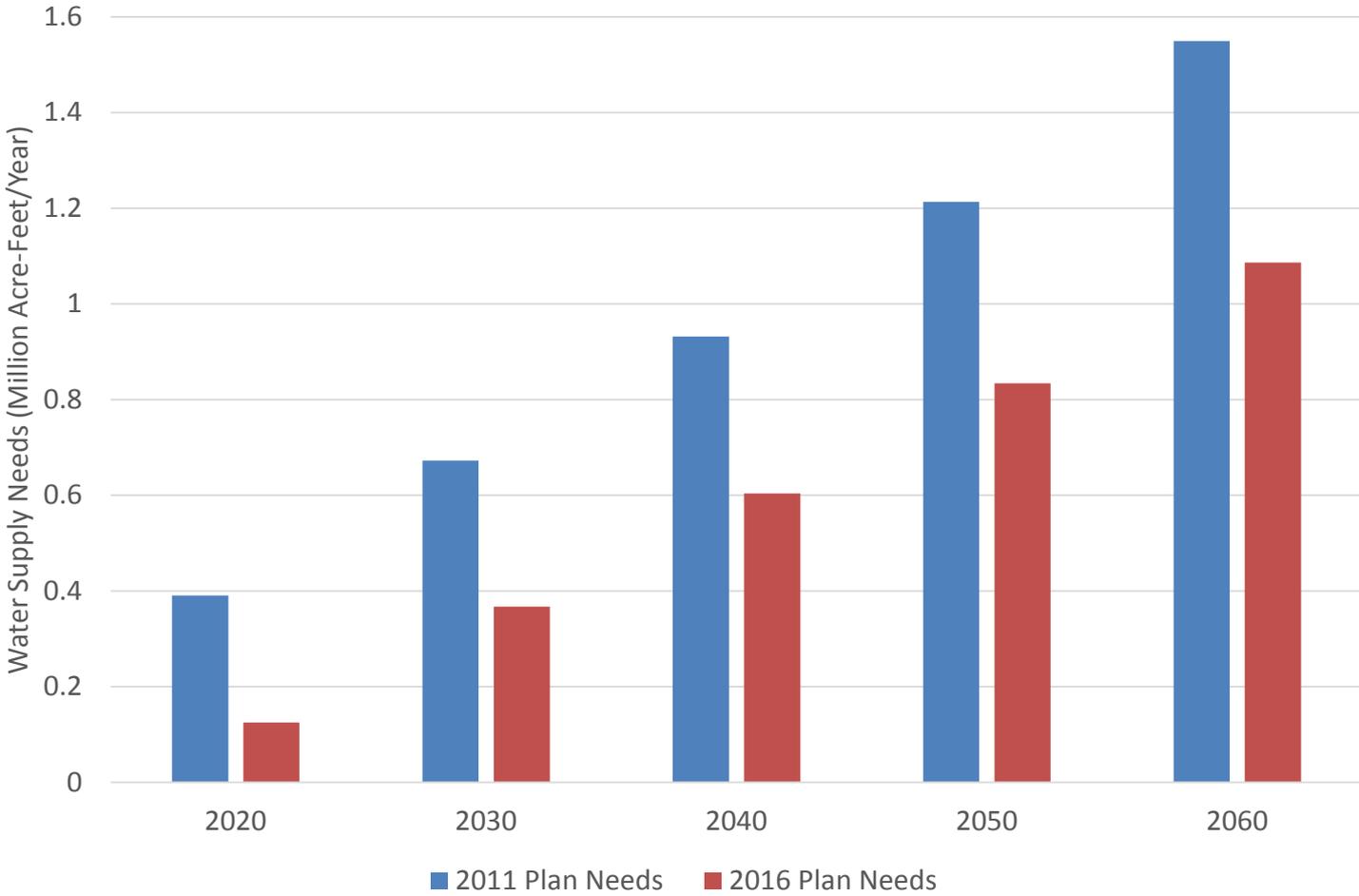
Changes to Total Demand



Currently Available Water

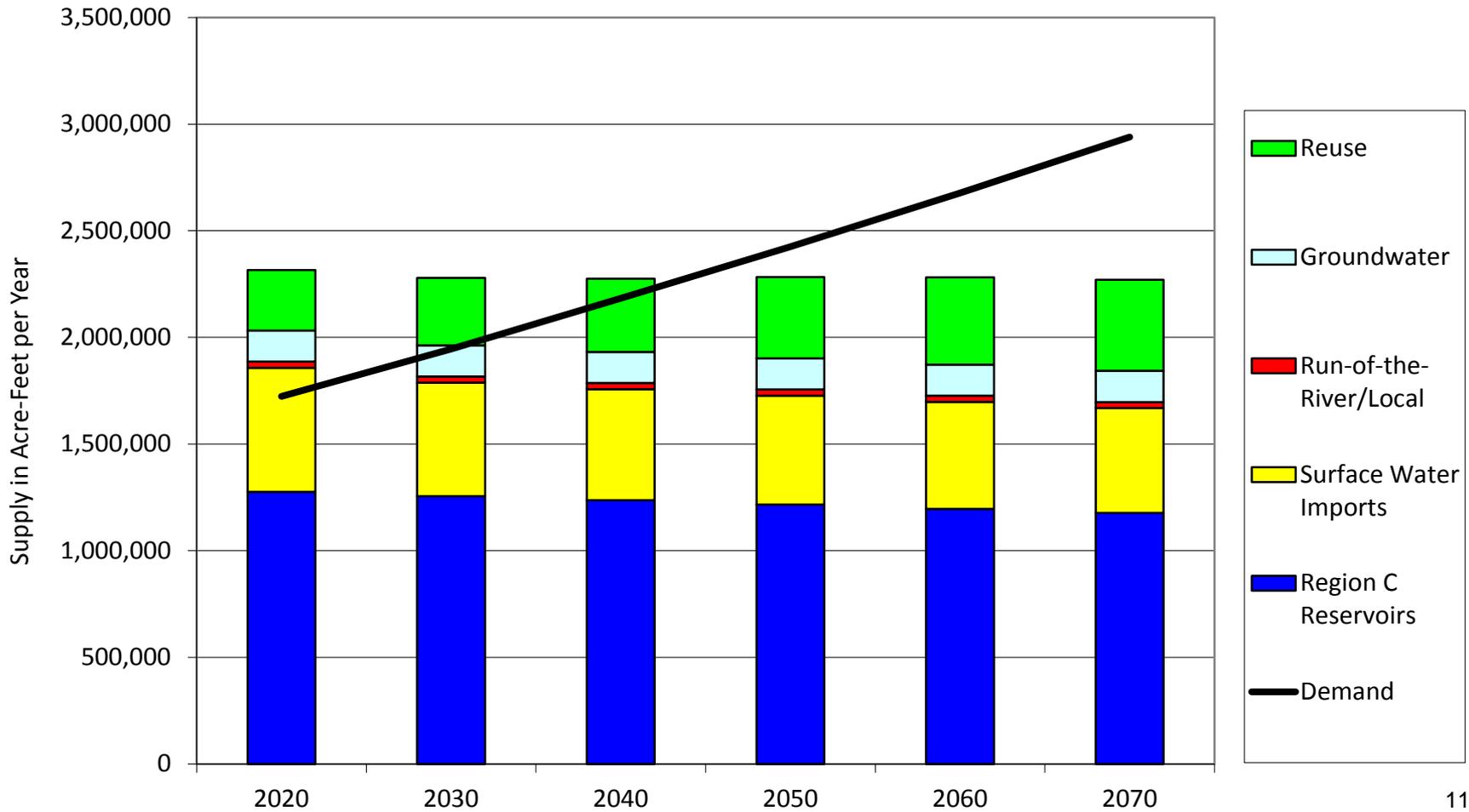


Identification of Water Needs



Region C Supply – Demand

(2016 Region C Water Plan)



Identification, Evaluation & Selection of WMSs

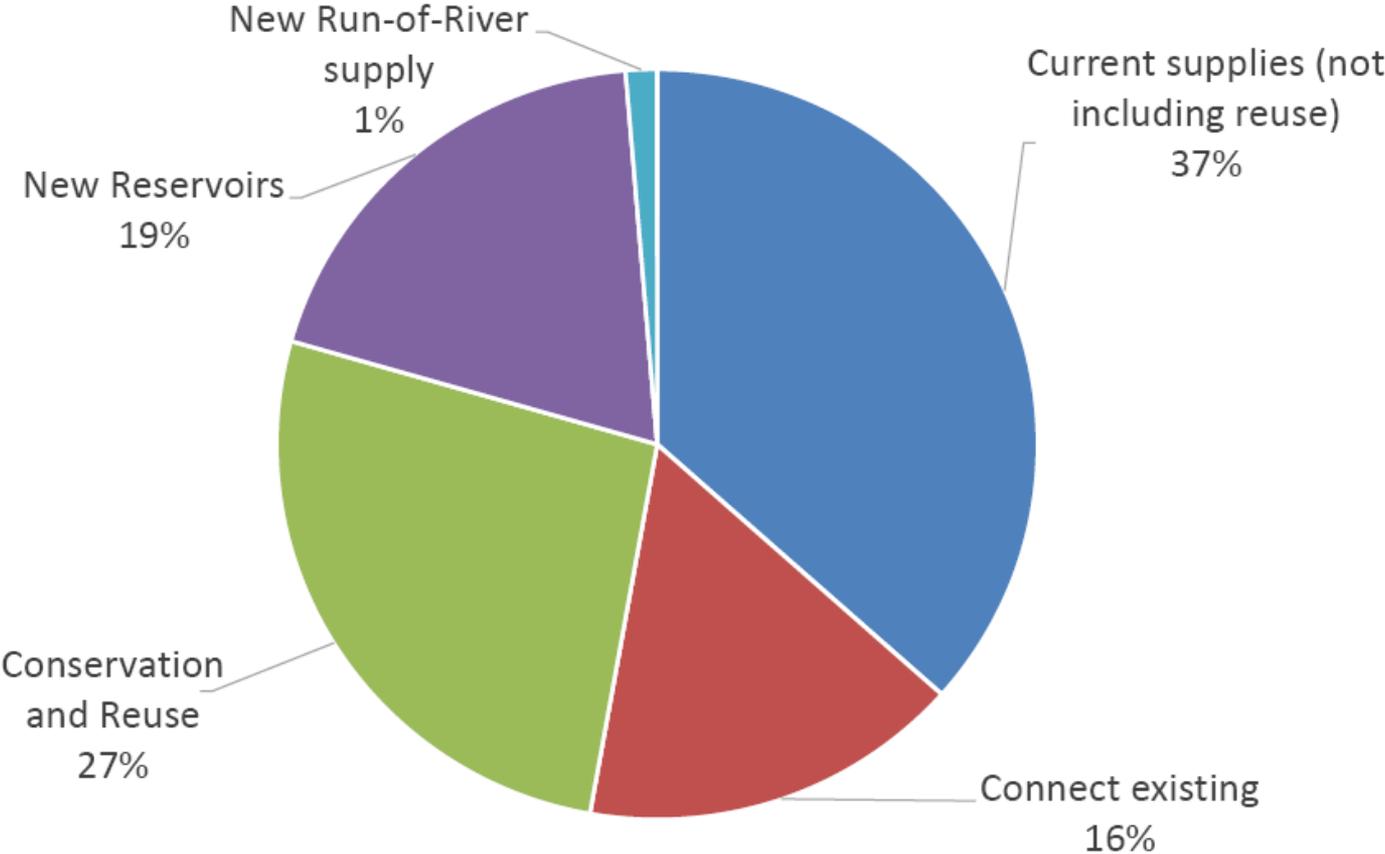
- Changes to the major WMSs
 - Dallas
 - More Reuse
 - Lake Columbia
 - Tarrant Regional Water District
 - More Reuse (new permits)
 - Lake Tehuacana
- Sulphur Basin Supplies
(TRWD, NTWMD, UTRWD, Dallas, Irving, SRBA)
 - Evolution of Marvin Nichols
 - Combination with Lake Wright Patman

Water Management Strategy

Supplies and Costs

- Supply from WMS development is 1.79 million acre-feet per year (vs 2.21 in 2011 Plan)
- Management supply factor region-wide is 1.166 in 2070 (vs 1.22 in 2011 Plan)
- Total cost of implementing all of the WMSs is \$23.6 billion (\$21 billion in 2011 Plan)

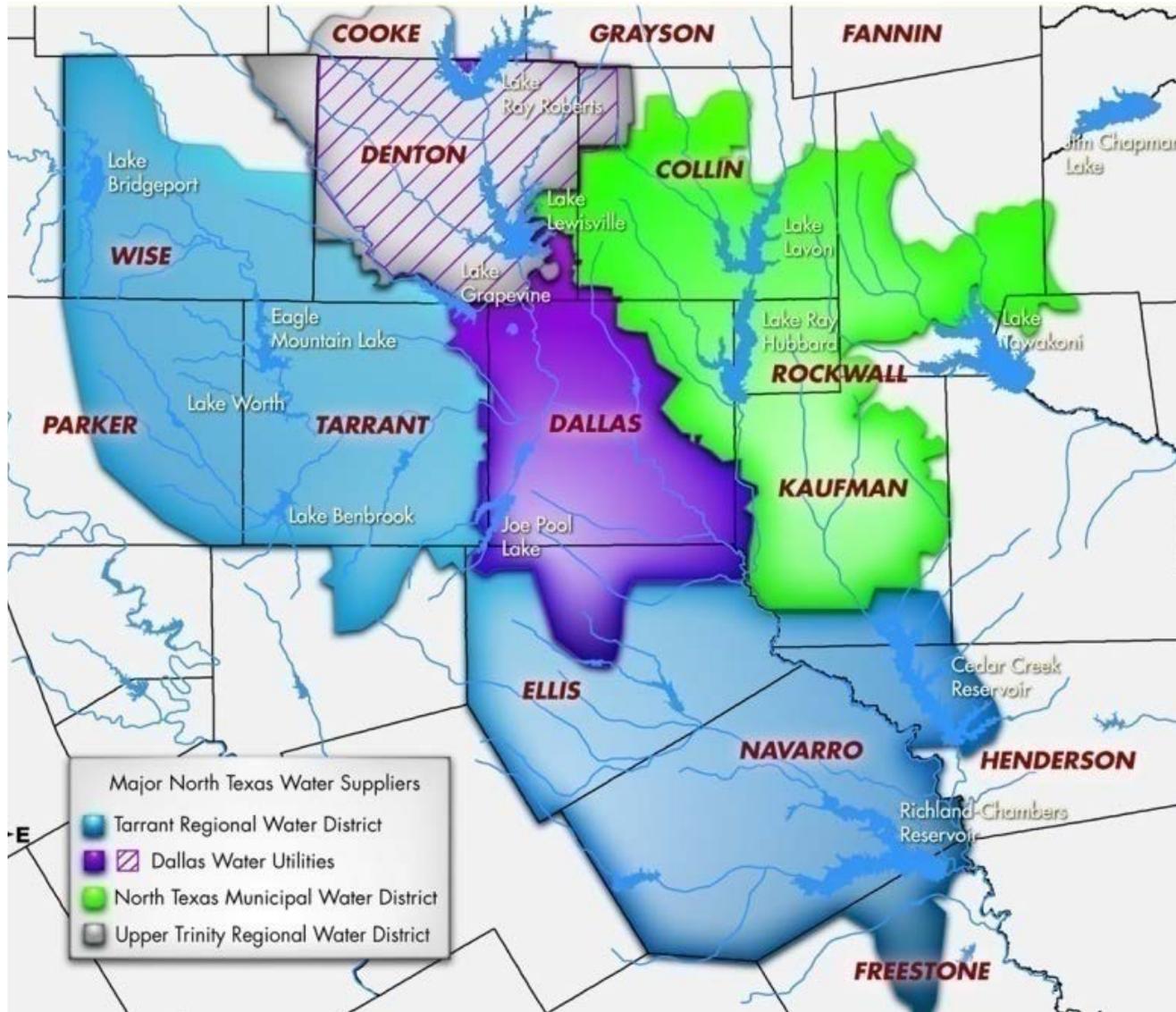
Chapter 5 -Sources of Water Available as of 2070



Recommended Major Water Management Strategies for Region C

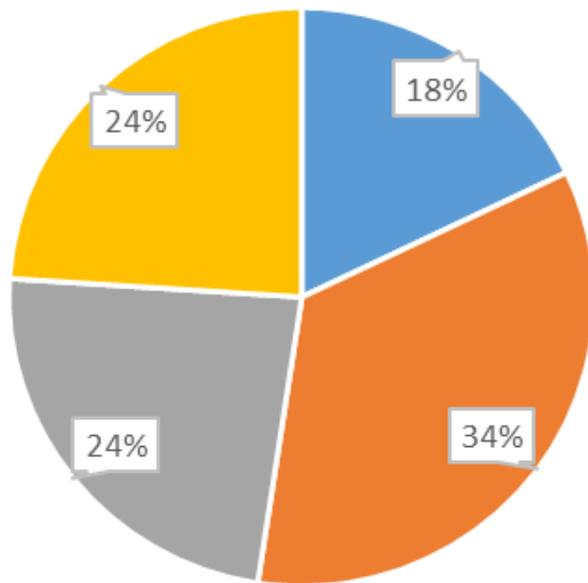
Strategy	Supplier	Decade	Supply in 2070 (Ac-Ft/Yr)	Supplier Capital Cost
Conservation	Multiple	2020-2070	135,991	\$420,878,859
Reuse Implementation (Main Stem Trinity River)	Dallas	2050	149,093	\$718,944,000
Connect Lake Palestine	Dallas	2030	110,670	\$900,817,000
Sulphur Basin Supplies	TRWD	2050	280,000	\$3,004,413,000
	NTMWD	2060	174,800	\$1,206,634,000
	UTRWD	2060	35,000	\$305,499,000
Lower Bois d'Arc Creek Reservoir	NTMWD	2020	120,200	\$625,610,000
Toledo Bend	NTMWD	2070	100,000	\$1,248,461,000
Cedar Creek Wetlands (Reuse)	TRWD	2030	88,059	\$139,078,000
Lake Texoma blending	NTMWD	2040	97,838	\$521,775,000
Lake Columbia	Dallas	2070	56,050	\$327,187,000
Lake Ralph Hall and Associated Reuse	UTRWD	2030	50,121	\$316,160,000
Oklahoma	NTMWD	2070	50,000	\$167,541,000
Neches Run-of-River	Dallas	2060	47,250	\$226,790,000
Lake Tehuacana	TRWD	2040	41,600	\$742,730,000
Lake Texoma Desalination	GTUA	2030	41,076	\$142,222,000

Major North Texas Water Suppliers

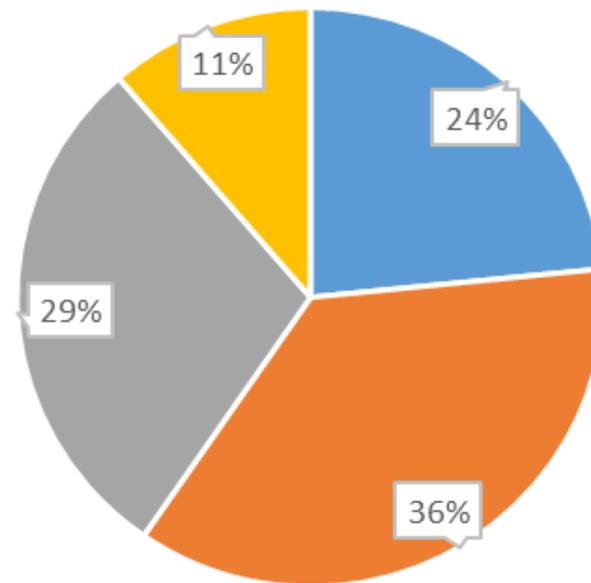


Major Water Providers Water Management Strategies

Capital Costs
(\$23.8 Billion)



Quantity
(1.79 Million Ac-Ft/Yr)



- Dallas
- Tarrant Regional Water District

- North Texas Municipal Water District
- Other

Water Management Strategies

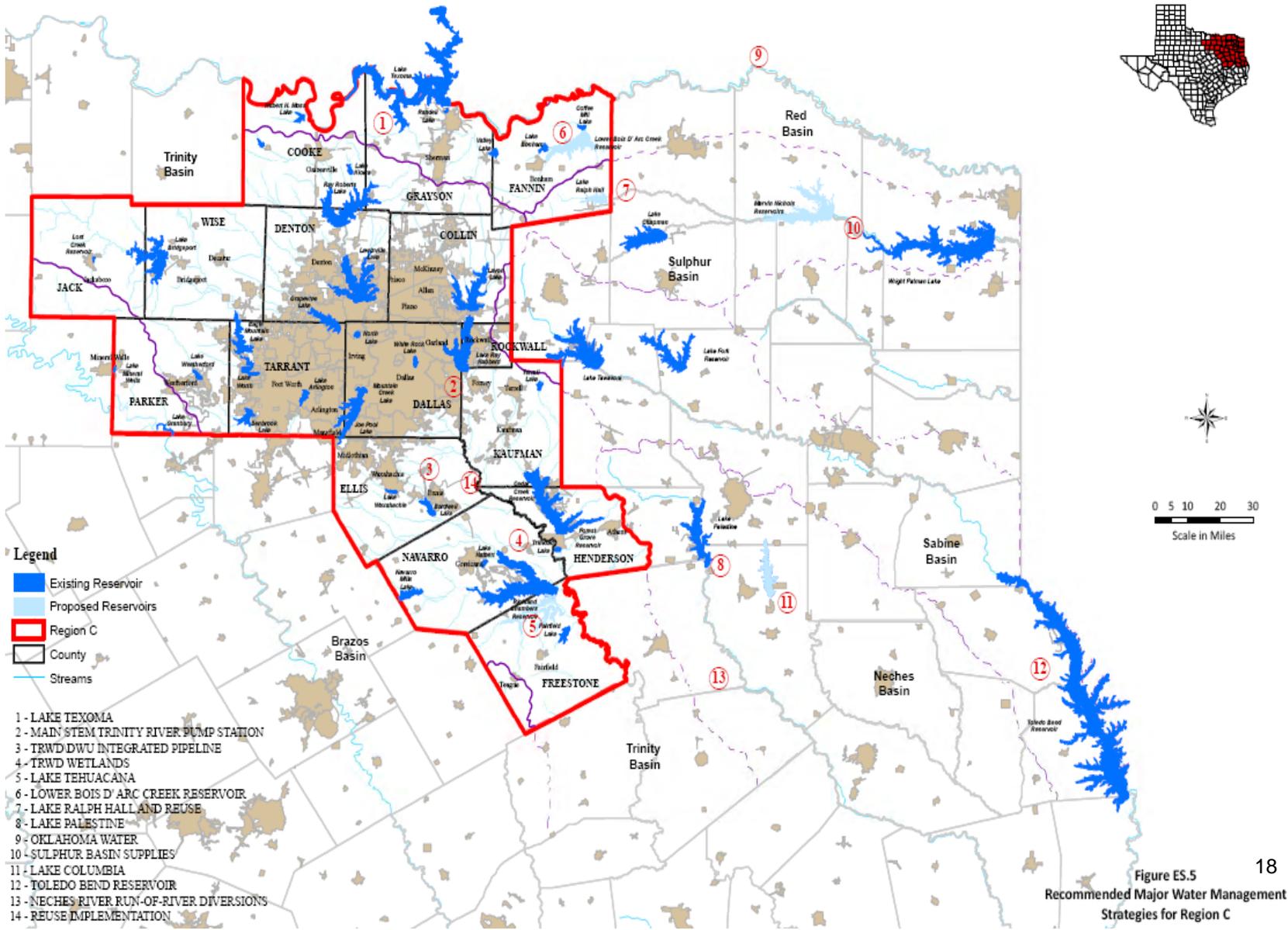


Figure ES.5
Recommended Major Water Management
Strategies for Region C



Drought Response

- Drought of record for most of Region C (1950-1957)
- Jim Chapman (Cooper) Lake in Sulphur Basin experiencing a new drought of record
- Drought triggers
 - Surface water –follows triggers in Drought Contingency Plans (DCP) of the owner/operator
 - Groundwater –follows trigger in DCPs of the operator
 - Emergency Interconnects

Drought Response

- Recommendations
 - Regular monitoring of drought conditions
 - Coordination with Wholesale Water Providers (WWP) stages
 - Regular review & update of the DCP
 - Communication with customers during times of decreased supply or precipitation
 - Consistent enforcement procedures
 - Model Plans available on www.regioncwater.org

Public Participation

- Includes a discussion of:
 - Planning Group Members
 - Outreach to the public
 - Public meetings and hearings
 - Summary of Region C/D Interregional Conflict



Summary



2016 Region C Plan

- Population is projected to more than double over the next 50 years from nearly 6.5 million in 2010 to over 14.3 million by 2070
- Water demands in dry years will grow tremendously from just over 1.5 million acre-feet per year in 2011 to 2.9 million acre-feet per year by 2070
- Currently available water supplies are 1.7 million acre-feet per year
- Potential shortage of 1.2 million acre-feet per year by 2070 in new supplies are not developed.
- If new supplies are not developed based on a single year drought:
 - Regional income would reduce by over 34.6 billion
 - Regional employment would be reduced by over 373,000 jobs
 - Regional Population would be reduced by nearly 70,000 persons
 - An extended drought would have an even greater impact on the region

Region C Plan

- Five Major new reservoirs are recommended
- The 2060 projected demand decreased 600,000 acre-feet per year from the 2011 Region C Plan
- The 2060 total municipal gallon per capita per day (gpcd) decreased 35 gpcd from the 2011 Region C Plan
- Total reuse and conservation supply will make up 41 percent of Region C's 2070 demand without conservation
- Recommended Water Management Strategies to meet demands
 - 37% currently available surface and groundwater
 - 27% conservation and reuse
 - 16% connection of existing supplies
 - 20% development of new supply (including reservoirs)
- Conflict Between the Region C and Region D Initially Prepared Water Plans resolved by
 - Region C moving the Marvin Nichols Reservoir as a designated strategy to the year 2070 and
 - Region C support Region D in studying alternatives to Marvin Nichols

Schedule

- Nov 9 – RCWPG meeting, approved Final Region C Water Plan
- Dec 1 –
 - RCWPG Submitted Final Plan to TWDB, then distribute to libraries
 - TWDB opens application process for 2nd round of SWIFT funding
- Dec 14 – TWDB approved Region C Water Plan
- Early Spring 2016 – TWDB publishes draft State Water Plan for Public Comment
- Early Summer 2016 – TWDB Approves 2017 State Water Plan
- Summer 2016 – TWDB awards 2nd round of SWIFT funding
- Jan 5, 2017 – TWDB delivers plan to governor, the lieutenant governor, and the speaker of the house of representatives