Region C Water Planning Group

February 10, 2020
ACTION ITEMS
A. Approval/Adoption of 2021 Initially Prepared Region C Water Plan

Kevin Ward
Region C Chair
Chapter 1
Description of Region

Region C at a Glance

- **2016 Population:** 7.2 Million
- **26%** of State’s Population
- **31%** of State’s Economy
- **9%** of State’s Water Use
- **53** Cities over 20,000 population
- **90%** of Demand Met by Surface Water
Chapter 2
Population and Demand Projections

Population & Demand at a Glance

- Population almost **doubles** by 2070
- Population growing **300+ people/day**
- 90% of Demand is Municipal
- ~25% of State’s population
- 10% of State’s demand
Chapter 3
Available Water Supply (Total Water Supplies)

Supplies in Acre-Feet per Year

- 2016 Supplies
- 2020 2030 2040 2050 2060 2070

- Reservoirs in Region C
- Surface Water and Groundwater Imports
- Reuse
- Groundwater
- Livestock and Other Local Supply
- Run-of-River Irrigation

Legend:
Chapter 3
Available Water Supply (Connected Supplies)

Supplies in Acre-Feet per year

- Reservoirs in Region C
- Reuse
- Surface Water and Groundwater Imports
- Groundwater
- Livestock and Other Local Supply
- Run-of-River Irrigation

2016 Supplies
Chapter 4
Needs

![Graph showing trend of demand, supply, and total regional need for different years, including 2020, 2030, 2040, 2050, 2060, and 2070. The x-axis represents years, while the y-axis represents amount (acre-feet per year) ranging from 0 to 3,000,000. The graph indicates an increasing trend over the years.](image-url)
Chapter 5
Water Management Strategies

• 259 Recommended Strategies
• 35 Alternative Strategies

• Total Supply from WMS
  • 1.87 Million acre-feet per year
  • 39% Conservation and Reuse

![Pie chart showing water management strategies]

- Connect Existing: 24%
- New Surface Water: 32%
- Reuse: 28%
- Conservation: 11%
- Other New Supply: 3%
- Groundwater: 3%
Chapter 5
Conservation and Reuse

• Conservation and Reuse
  • 731,000 af/y existing supplies
  • 618,000 af/y future supply

• Major Reuse Strategies
  • Main Stem Balancing Reservoir
  • Cedar Creek Wetlands
  • Expanded Reuse
    • TRA Sources
    • NTMWD Sources
    • UTRWD Sources
Chapter 5
Major Water Management Strategies

- Major WMS (>30,000 af/y)
  - Account for 82% of WMS Supplies
- 5 New Reservoirs:
  - Bois d’Arc Lake
  - Lake Ralph Hall
  - Marvin Nichols
  - Lake Tehuacana
  - Lake Columbia
- Major Connection Project:
  - IPL (Palestine)

![Recommended Major WMS Pie Chart]

- New Surface Water - 49%
- Connection of Existing Supplies - 27%
- New Groundwater - 2%
- Reuse Strategies - 22%
Chapter 5
Water Management Strategy Costs

- Total Capital Cost
  - $30 Billion
- 84% Cost is for MWPs
- Other:
  - Regional WWPs
    - $0.7 billion
  - WUGs/WWPs
    - $4 billion
Chapter 5
Unmet Needs

• 7 Water User Groups
  • Irrigation
    • Ellis, Fannin
  • Mining
    • Fannin, Freestone, Kaufman, Navarro
  • SEP
    • Freestone
Chapter 6
Impacts of Strategies

• Impacts on:
  • Water Quality
  • Moving water from Rural and Agricultural areas to Urban areas
  • Third Party impacts
  • Invasive and Harmful Species

• Consistent with long-term protection of state resources

• Socio-economic impacts of not meeting water needs
Chapter 6
Impacts on Water Quality

• Selected Key Parameters
• Analyzed Water Quality
• Ranked by WMS’s effect on water quality

<table>
<thead>
<tr>
<th>Strategy Type</th>
<th>Range of Anticipated Impacts on Key Water Quality Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Surface Water Sources</td>
<td>Low to Medium</td>
</tr>
<tr>
<td>Existing Groundwater Sources</td>
<td>Low to Medium Low</td>
</tr>
<tr>
<td>New Surface Water Sources</td>
<td>Low to Medium</td>
</tr>
<tr>
<td>New Groundwater Sources</td>
<td>Medium Low to Medium</td>
</tr>
<tr>
<td>Direct Reuse</td>
<td>Low/Positive</td>
</tr>
<tr>
<td>Indirect Reuse</td>
<td>Medium</td>
</tr>
<tr>
<td>Conservation</td>
<td>Low</td>
</tr>
<tr>
<td>Other</td>
<td>Low</td>
</tr>
</tbody>
</table>

Key Water Quality Parameters Selected for 2021 Region C Plan

- Surface Water:
  - Ammonia-nitrogen
  - Nitrate-nitrogen
  - Total phosphorous
  - Chlorophyll-a
  - Total dissolved solids (TDS)
  - Chloride NEW
  - Sulfate NEW

- Groundwater
  - TDS
  - Chloride NEW
  - Sulfate NEW
Chapter 6
Impacts on Moving Water to Urban Areas

• Focused on connections to existing supplies and new reservoirs
• Types of Impacts:
  • Transfer of water rights from agricultural to other uses (none in Region C)
  • Removal of agriculture through inundation from new reservoirs
    • Bois d’Arc Lake – 16,641 total acres
    • Ralph Hall – 7,568 total acres
    • Tehuacana – 15,000 total acres
    • Marvin Nichols – 66,103 total acres
    • Columbia – 10,133 total acres
  • Changes in stream flow immediately downstream of a new reservoir
  • Increased water level fluctuations at existing lakes as more water is used
Chapter 6
Other Impacts

• Instream Flows
  • Environmental flow needs built into yield analyses.

• Water Level Fluctuations
  • Low impact on habitat and agricultural activities.

• Third Party
  • Recent economic studies for Bois d’Arc Lake and Marvin Nichols Reservoir show significant net economic benefit to local region

• Invasive and Harmful Species
  • Zebra mussels, giant Salvinia, golden algae
  • Specific measures are included as part of strategies to prevent migration of harmful species
Chapter 6
Consistency with Protection of State’s Resources

- Water Resources
  - Respected existing surface water rights
    - TCEQ-approved WAMs
  - Honored MAG values for groundwater

- Agricultural Resources
  - Respected existing agricultural water use

- Natural Resources
  - Identified potential impacts to natural resources
  - Considered during evaluation of each strategy
Chapter 6
Impact of Not Meeting Needs
Chapter 7  
Drought Response

• Drought of Record
  • 1950’s for most
  • 2011-2015 for Sulphur Basin
    • Chapman yield reduced 7%
    • Sulphur Basin future reservoir yields reduced 24%

• Current Preparation for Drought
  • Regional Coordination
  • 63 Drought Plans
Chapter 7
Drought Response

- Emergency Interconnections
- Drought Triggers and Responses
  - Surface Water: Follow DCP
  - Groundwater: U.S. Drought Monitor
- Drought Management WMS
  - No official drought strategies recommended
    - Zero reliable supply
    - Not long-term savings
    - Usually not implemented until well into drought
    - Allows for safety factor in case of demand greater than expected
Chapter 8
Unique Stream/Reservoir & Legislative Recommendations

• No Unique Stream Segments Recommended
• 7 Reservoir Sites Recommended for Unique Designation
  • Bois d’Arc Lake
  • Lake Ralph Hall
  • Marvin Nichols
  • Tehuacana
  • Columbia
  • Fastrill
  • George Parkhouse North

Currently Legislatively Designated
Chapter 8
Unique Stream/Reservoir & Legislative Recommendations

- 24 Policy and Legislative Recommendations
  - RWP Process (7)
  - TCEQ Policy/Water Rights (2)
  - Funding (9)
  - Technical Research (1)
  - State/Federal Programs (5)
Chapter 9
Infrastructure Financing

- To be Included in Final Plan
- Survey to be conducted this summer
- Asks providers how they will pay for projects
- TWDB uses info for SWIFT planning
Chapter 10
Public Participation and Plan Adoption

Public Participation Elements
- Outreach to the Public
  - RWPG Meetings
  - www.regioncwater.org
  - Media/ Press releases
- Outreach to Water Suppliers
  - Surveys/Emails
  - Meetings/Teleconferences
  - Review of Published Documents
- Outreach to Adjoining Regions
  - Region C/D Coordination
  - Regional Liaisons
- Adoption Process
  - Public Hearing

- Region C Planning Group
  - 22 Members
  - 13 Interests
- 10 RCWPG Meetings (to date)
- Over 50 unique news outlets
  - Reports on Region C providers, supplies, strategies
Chapter 11
Comparison to 2016 Plan

• Similar Population, Demand, and Supplies
• ~ 50 Removed and New WUGs
• Major Water Provider Designation
• New Drought of Record in Eastern Part of State
Chapter 11
Major Strategies Changes since 2016 Plan*

• **Implemented:**
  • NTWMD Main Stem Pump Station, TRA Central WWTP Reuse diversion to East Fork Wetlands, & Dredge Lavon Lake
  • Tarrant Regional WD Integrated Pipeline

• **Changed:**
  • More Conservation (including twice/week water restrictions)
  • Marvin Nichols and Wright Patman stand-alone
  • TRA Central WWTP Reuse to different uses
  • Dallas/NTWMD – Elm Fork Swap
  • Toledo Bend – moved to 2080

*Not exhaustive list
Chapter 11
Major Strategies Changes since 2016 Plan*

• New:
  • GTUA - Regional Water System
  • TRWD - Purchase reuse water from TRA Central WWTP
  • TRWD - Groundwater
  • Sherman - Connection to Collin-Grayson Municipal Alliance
  • Sale of 10 MGD to Region G entity (Cleburne)
  • Multiple Providers - Additional Reuse and ASR

*Not exhaustive list
Approve/Adopt IPP

• Consider approval of posted IPP, with:
  • Minor formatting or editorial changes
  • Addition of database tables
  • Addition of ongoing Socio-Economic Study on Impacts of Marvin Nichols Reservoir (Attachment to Appendix J); study to be complete in early April
  • Singular list of Potentially Feasible Water Management Strategies (Appendix F, currently in table format by county)
D. Update on Region C-D Coordination

Kevin Ward
Region C Chair
C-D Coordination

• Subcommittees met for a 3rd time on January 14, 2020
• Proposed Agreements presented by both regions
• No agreements made thus far
A. Infrastructure Financing Survey and Report

Freese and Nichols, Inc.
Infrastructure Financing Survey and Report

• Purpose – assist TWDB in planning for SWIFT funding

• Process –
  • Consultants have entered all strategies and projects into TWDB’s database
  • TWDB will generate a survey using database
  • Survey will be sent to all water providers who have strategy/project with capital cost
  • Survey asks if/when SWIFT funding will be needed
  • Consultants to tabulate survey responses into Chapter 9
B. Prioritization Task

Freese and Nichols, Inc.
Prioritization

• Purpose – assist TWDB in prioritizing SWIFT funding
• Process –
  • Consultants have entered all strategies and projects into TWDB’s database
  • TWDB will generate list of strategies/projects using database
  • Regional Chairs developed scoring system (in 2011)
  • Consultants to use scoring system to score/rank projects
Prioritization Scoring System

- Max Score = 1000
- 5 Categories of Questions
  - Decade of Need (40%)
  - Project Feasibility (10%)
  - Project Viability (25%)
  - Project Sustainability (15%)
  - Project Cost Effectiveness (10%)
Criteria 1 - Decade of Need
(40% or 400 Points)

- 1A - What is the decade the RWP shows the project comes online?

- 1B - In what decade is initial funding needed?
Criteria 2 – Feasibility
(10% or 100 Points)

• 2A - What supporting data is available to show that the quantity of water needed is available (models, etc)?
• 2B - If necessary, does the sponsor hold necessary legal rights, water rights and/or contracts to use the water that this project would require?
• 2C - What level of engineering and/or planning has been accomplished for this project?
• 2D - Has the project sponsor requested (in writing for the 2021 Plan) that the project be included in the Regional Water Plan?
Criteria 3 – Viability
(25% or 250 Points)

• 3A - *In the decade the project supply comes online, what is the % of the WUG's (or WUGs') needs satisfied by this project?*

• 3B - *In the final decade of the planning period, what is the % of the WUG's needs satisfied by this project?*

• 3C - *Is this project the only economically feasible source of new supply for the WUG, other than conservation?*

• 3D – *Does this project serve multiple WUGs*
Criteria 4 – Sustainability
(15% or 150 Points)

- 4A – Over what period of time is this project expected to provide water?
- 4B – Does the volume of water supplied by the project change over the regional water planning period?
Criteria 5–Cost Effectiveness
(10% or 100 Points)

• 5A – What is the expected unit cost of water supplied by this project compared to the median unit cost of all other recommended strategies in the region's current RWP?
C. Schedule Update

Amy Kaarlela
Freese and Nichols, Inc.
Schedule

• IPP Due to TWDB – March 3, 2020
• Distribution of plan to county clerks and libraries
• Public Hearing – May 13, 2020; 6pm, Bob Duncan Center, 2800 Center Street, Arlington
• Public comments deadline, 60 days after Public Hearing
• State Agency comments deadline, 90 days after Public Hearing
• Final Plan Due to TWDB – October 14, 2020, including:
  • Infrastructure Financing Report
  • Prioritization of Projects in 2021 Plan
Other Discussion

A. Updates from the Chair
B. Report from Regional Liaisons
C. Report from Texas Water Development Board
Region C TWDB Update Feb 10, 2020

Recent Communications from TWDB

• Potential Interregional Conflict Letter (January 13, 2020)
• Interregional Planning Council Status (January 17, 2020)
• Items for Administratively Complete IPP (January 21, 2020)
• RWPG Chairs Conference Call (January 27, 2020)
• RWP grant funding letter (January 28, 2020)
• Interactive SWP info sheet (January 30, 2020)
Other Discussion

D. Report from Texas Department of Agriculture
E. Report from Texas Parks and Wildlife Department
F. Report from Texas State Soil & Water Conservation Board
G. Other Reports
Other Discussion

H. Confirm Date and Location of Next Meeting
I. Public Comments
Adjournment
Thank you for attending.

Materials are available at
www.regioncwater.org