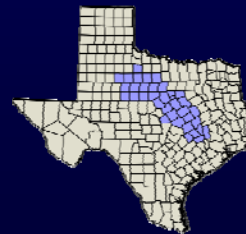


## ***Agenda Item 6.7***

# ***Surface Water Availability Modeling Assumptions for the 2011 Brazos G Regional Water Plan***

**February 18, 2009**



# ***Modeling Approach – Surface Water Supplies***

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- ✓ **TWDB has mandated use of the TCEQ Water Availability Model (WAM)**
  - **Analyzes water available to ~1,300 individual rights in Brazos Basin**
  - **Period of record hydrology (1940-1997)**
  - **TCEQ “Run 3” assumptions**

## ***TCEQ WAM - Major Assumptions (Run 3)***

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- ✓ Full authorized use of existing, perpetual water rights
- ✓ Strict application of Prior Appropriation Doctrine
  - No Subordination Agreements – unless specified as part of the water right
- ✓ As-permitted reservoir capacities
  - Assumes no sedimentation
- ✓ 1940 – 1997 historical period of record
- ✓ No Return Flows
- ✓ All Diversions Assumed Lakeside

# ***Brazos G WAM - Major Assumptions***

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- ✓ TCEQ WAM with following Exceptions
- ✓ Same Assumptions as used for the 2006 Plan
  - Latest TCEQ WAM – Water Rights through December 2008
  - Includes Conservative Amount of Return Flows
    - ✓ Approved during 2006 Plan
  - BRA contracts modeled at actual diversion locations

# **Brazos G WAM - Major Assumptions (cont.)**

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- ✓ TCEQ WAM with following Exceptions
  - 3 existing subordination agreements
    - ✓ Possum Kingdom Reservoir water rights are subordinated to Lake Alan Henry;
    - ✓ Possum Kingdom Reservoir water rights are subordinated to the City of Stamford's California Creek pump-back operation into Lake Stamford; and
    - ✓ Lake Waco is subordinated to the City of Clifton's 1996 priority date water right.
  
  - Will use estimated 2000 (current) and 2060 (future) sedimentation conditions for all reservoirs larger than 5,000 acft

# **Brazos G Mini-WAM**

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- ✓ **From Phase 1 Studies**
  - **Subset of Brazos G WAM**
    - ✓ Extended Period of Record – through June 2008
      - ✓ Recent drought included
    - ✓ Upper Brazos Basin
    - ✓ Clear Fork Basin to Possum Kingdom Reservoir
  - **Used to determine supplies in Upper Basin**
    - ✓ Safe Yields of Major Reservoirs

# ***Preliminary Results in April***

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- ✓ **Water availability**
  - **Minimum Annual Diversion**
  - **Reservoir Firm Yield**
  - **Reservoir Safe Yield**
  
  - **TWDB will allow 75/75 for Irrigation Supplies**
  
- ✓ **Surface Water Availability on County Basis**

# ***BRA System-Operations Permit***

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- ✓ **Because of the Pending Status of the Application at TCEQ...**
  - **Not included in Base Water Supply Analysis**
  - **Evaluated as a Water Management Strategy**

# ***What's Next***

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- ✓ **Possible action:**

***The BGRWPG adopts the surface water availability modeling assumptions for use in determining surface water supplies for the 2011 Brazos G plan as described in the February 9, 2009 technical memorandum prepared by HDR describing the assumptions, and adopts the concept of safe yield to determine supplies for Lake Palo Pinto and for reservoirs upstream of Possum Kingdom Reservoir.***

- ✓ **Formal Request to TWDB to approve these assumptions**
- ✓ **Draft Availability Estimates to be presented at the April Meeting**