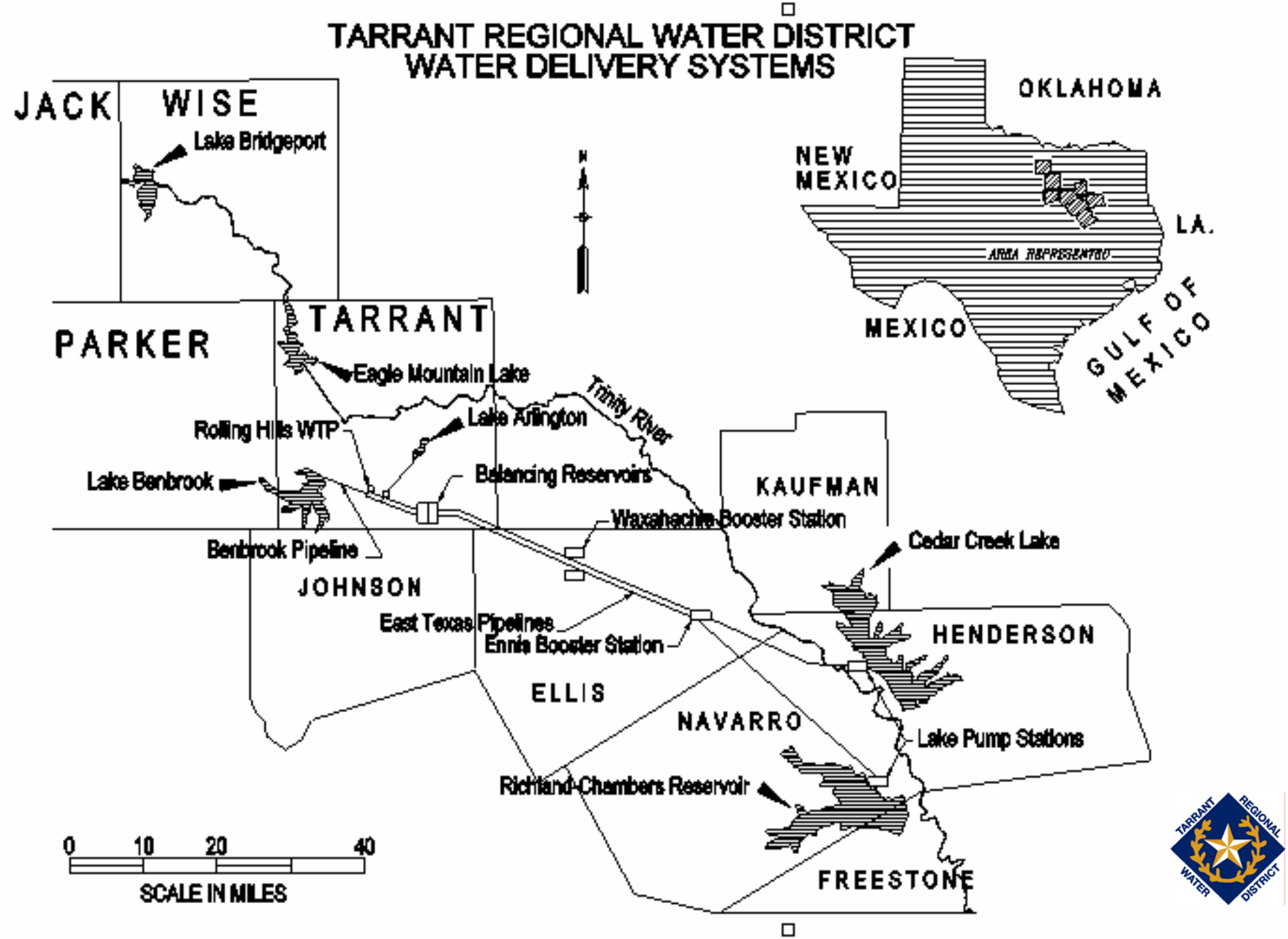
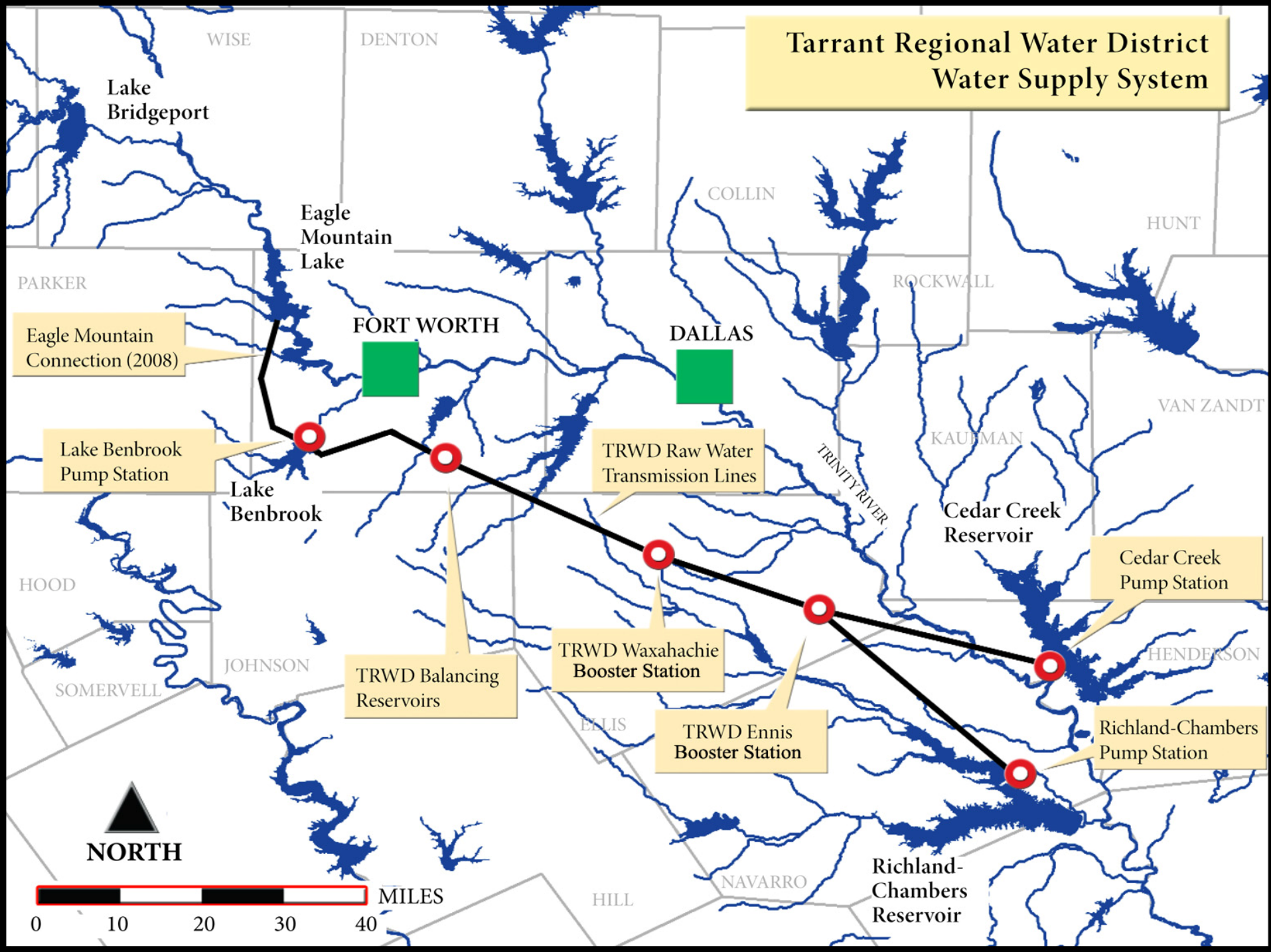
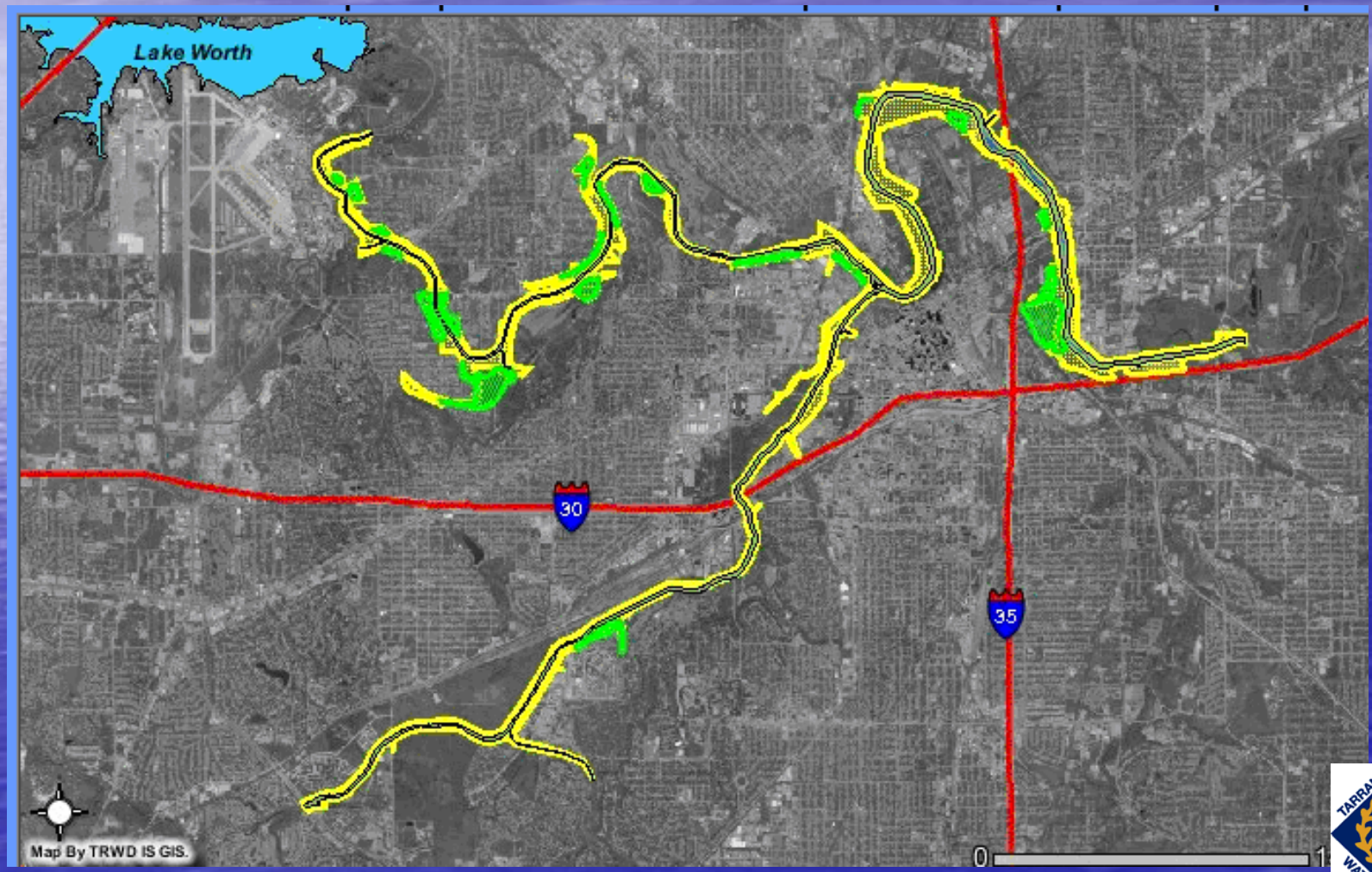

TARRANT
REGIONAL
WATER
DISTRICT


TARRANT REGIONAL WATER DISTRICT
WATER DELIVERY SYSTEMS
JACK
WISE
Lake Bridgeport
PARKER
TARRANT
Eagle Mountain Lake
Trinity River
Rolling Hills WTP
Lake Arlington
Lake Benbrook
Balancing Reservoirs
KAUFMAN
Waxahachie Booster Station
Cedar Creek Lake
Benbrook Pipeline
JOHNSON
East Texas Pipelines
Ennis Booster Station
HENDERSON
ELLIS
NAVARRO
Lake Pump Stations
Richland-Chambers Reservoir
FREESTONE
0 10 20 40
SCALE IN MILES
OKLAHOMA
NEW MEXICO
LA.
AREA REPRESENTED
MEXICO
GULF OF MEXICO
TARRANT REGIONAL WATER DISTRICT


Tarrant Regional Water District
Water Supply System
WISE
DENTON
Lake
Bridgeport
COLLIN
HUNT
Eagle
Mountain
Lake
PARKER
ROCKWALL
FORT WORTH
DALLAS
Eagle Mountain
Connection (2008)
VAN ZANDT
KAUFMAN
Lake Benbrook
Pump Station
TRWD Raw Water
Transmission Lines
TRINITY RIVER
Lake
Benbrook
Cedar Creek
Reservoir
Cedar Creek
Pump Station
HOOD
HENDERSON
JOHNSON
TRWD Waxahachie
Booster Station
SOMERVELL
TRWD Balancing
Reservoirs
ELLIS
TRWD Ennis
Booster Station
Richland-Chambers
Pump Station
NORTH
NAVARRO
Richland-
Chambers
Reservoir
HILL
MILES
0
10
20
30
40

27 Mile Floodway System

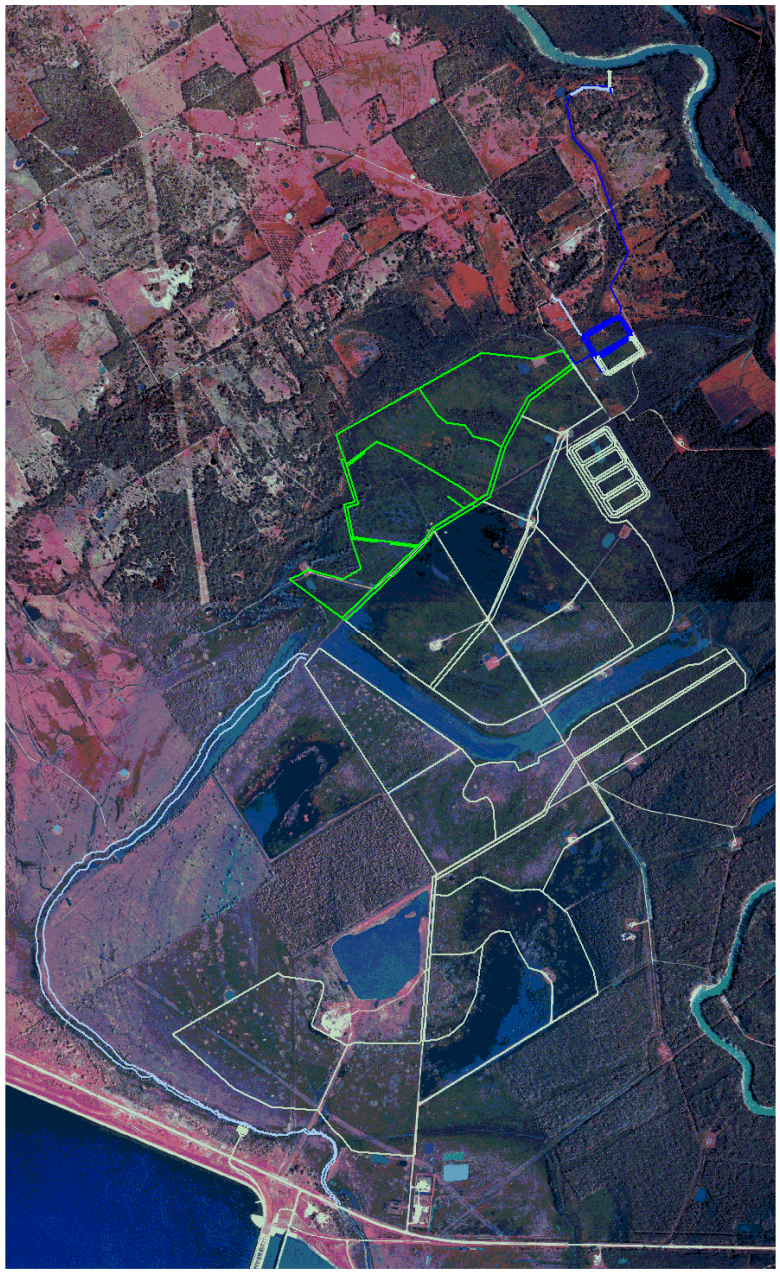


Future Sources

- Wetlands Recharge Facilities
- New Pipelines
- New Surface Water Reservoirs
- Maximize Current System

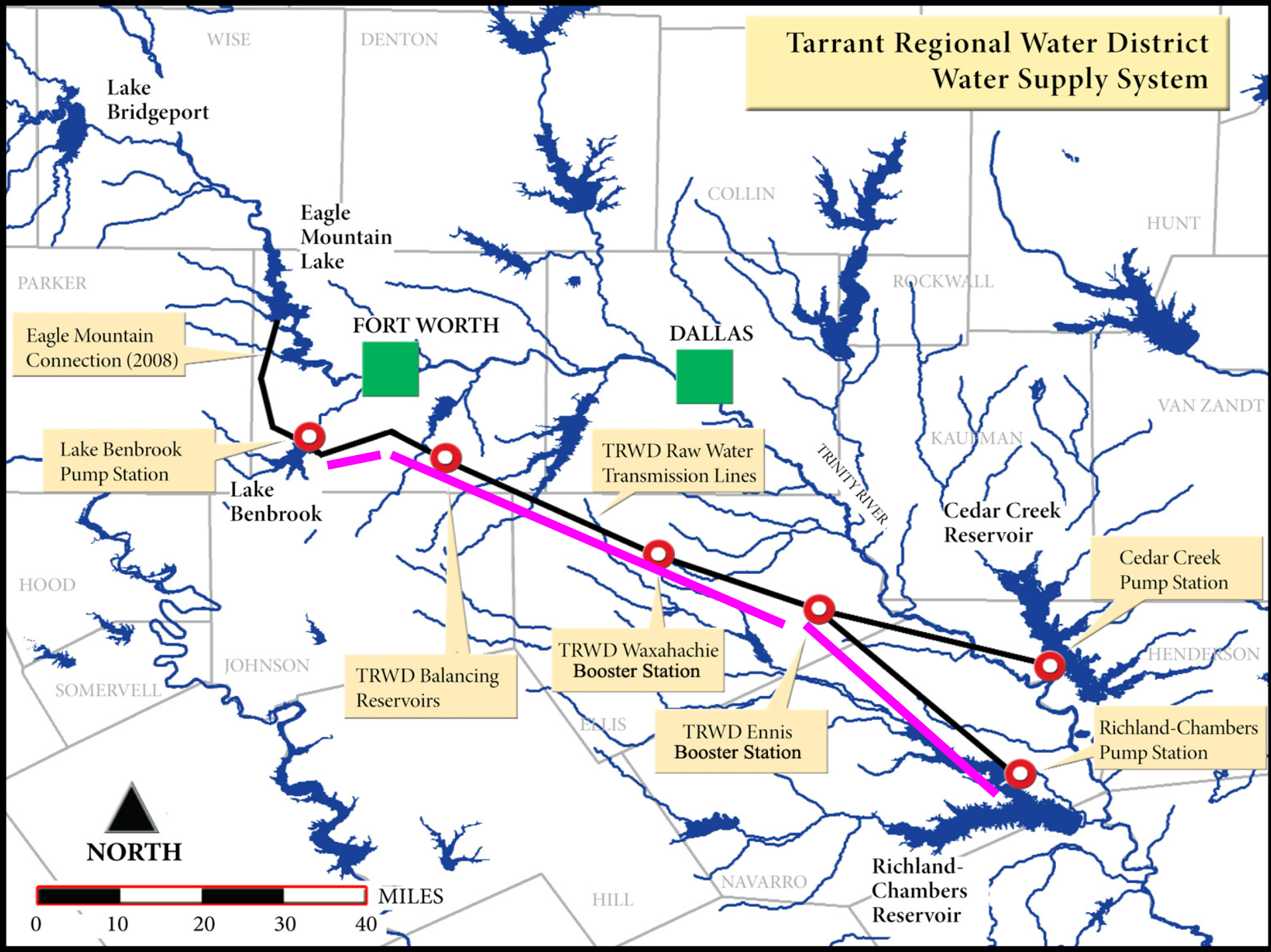
Constructed Wetlands

- Permit to Use Wetlands Flow as Surface Water Recharge Approved This Year
- Designed to Augment Safe Yield in East Texas Supply
- A Full Scale 250 acre Wetland was Constructed in 2002



Full Development

- About 2000 acres in all at Richland Chambers Lake
- 63,000 acre feet additional water
- Expected completion 2010
- Cedar Creek will have a parallel wetlands design
- Total of both will add 115,500 acre feet of supply to our system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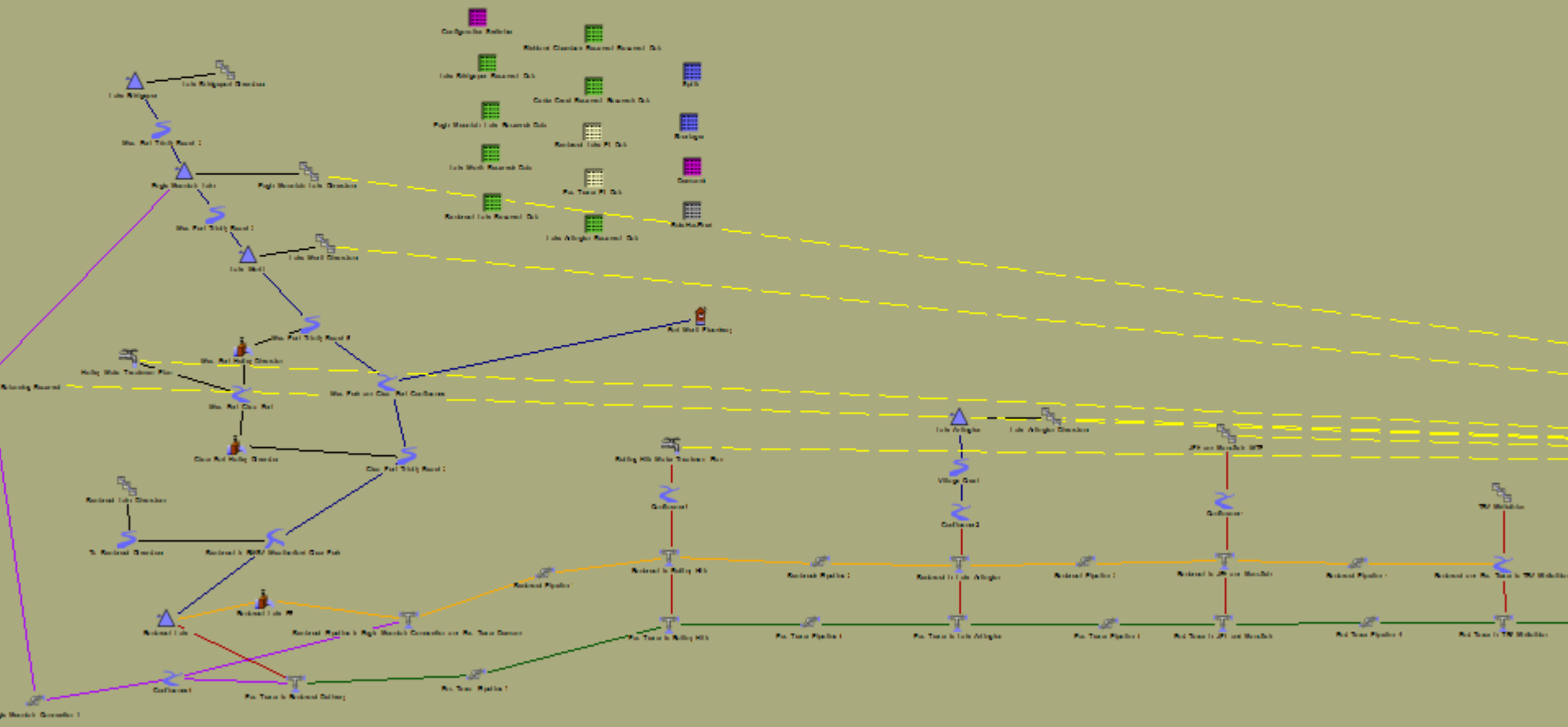
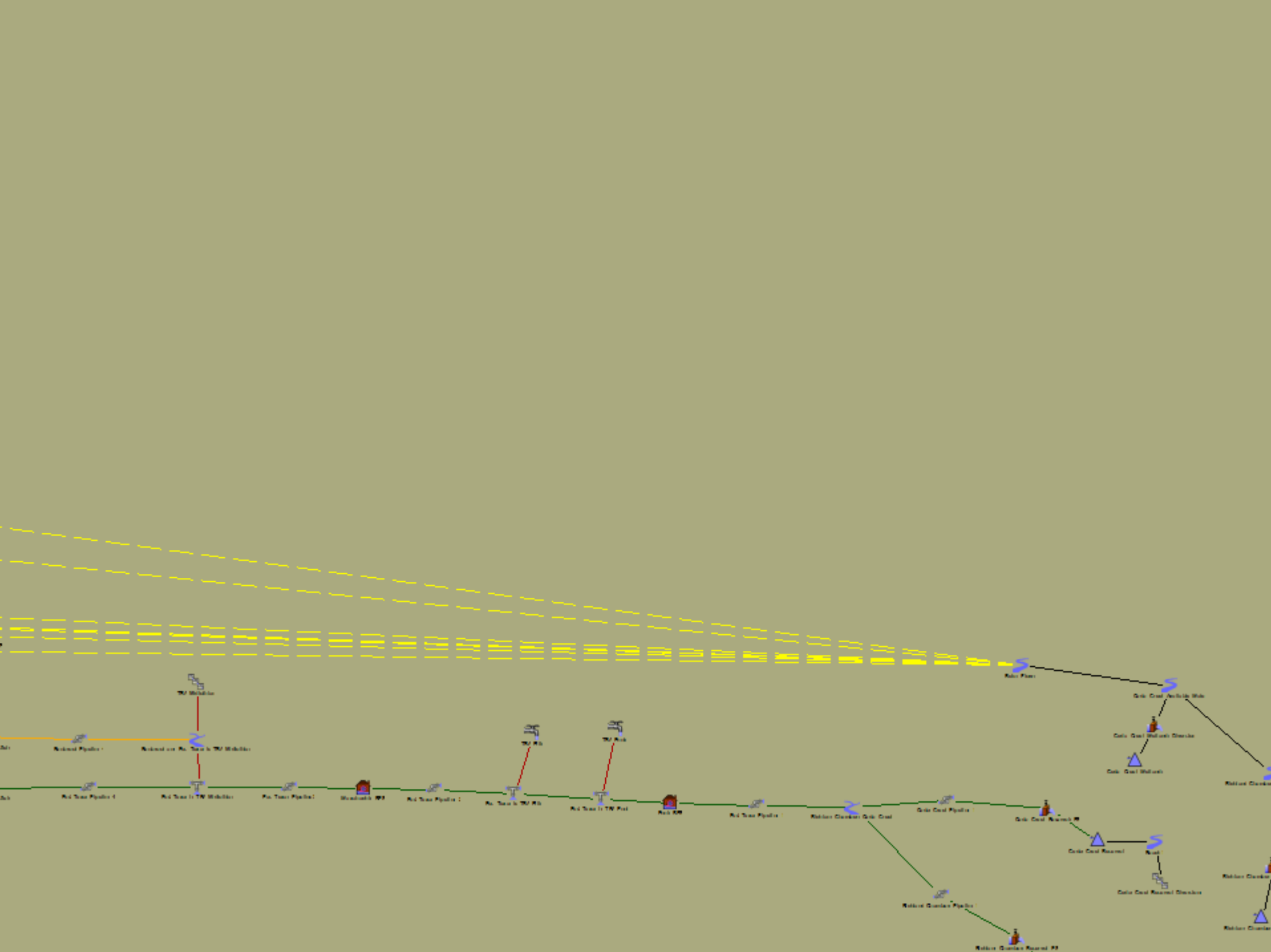
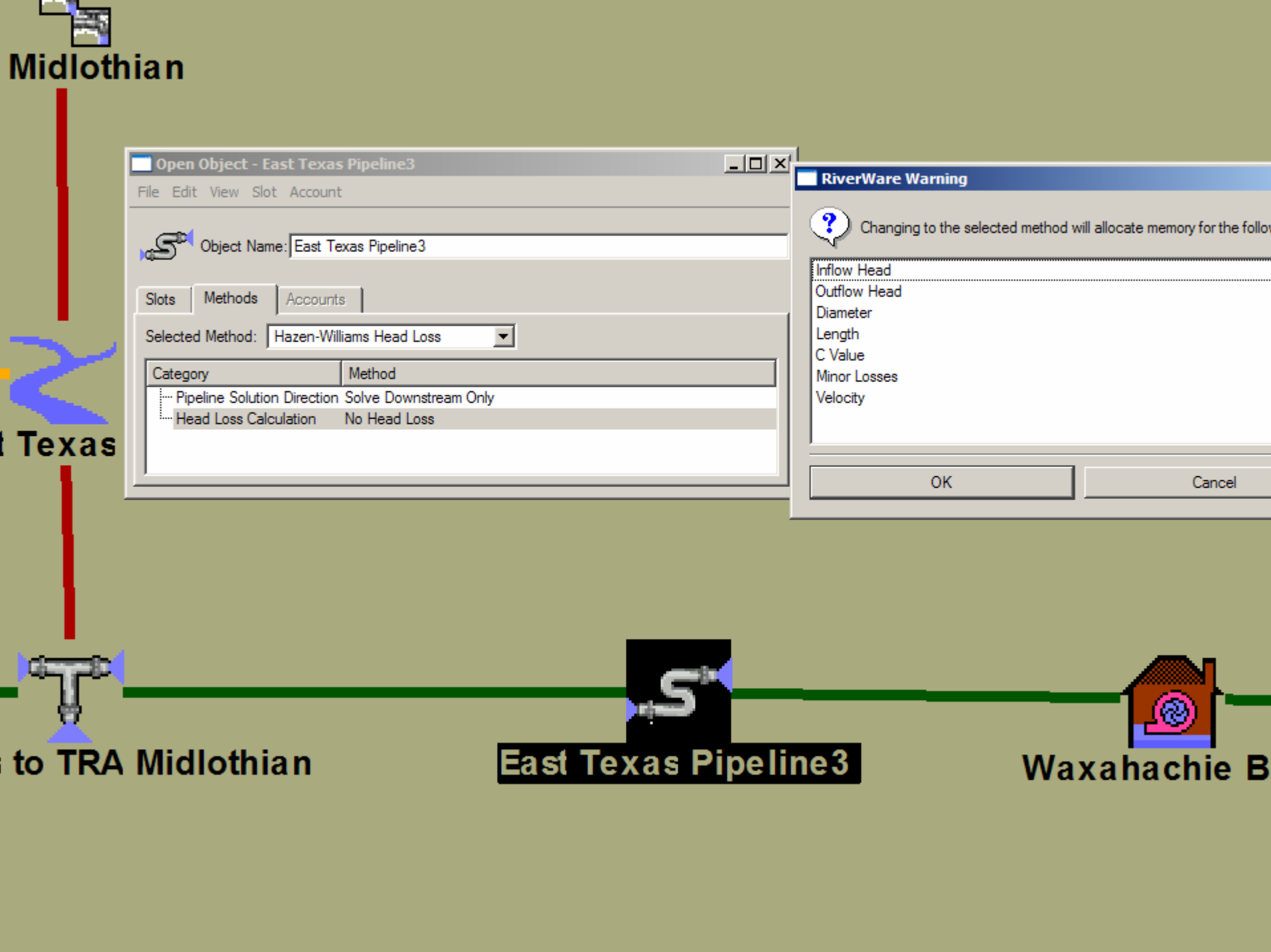
NAVARRO
Richland-
Chambers
Reservoir
HILL
MILES
0
10
20
30
40

Operations Nightmare

- Demand and Climate Driven
- Extremely Complex System
- Increasing Demand
- Increasing Risk
- Resource Optimization
- Best Management Practices






Midlothian
Open Object - East Texas Pipeline3
File Edit View Slot Account
Object Name: East Texas Pipeline3
Slots Methods Accounts
Selected Method: Hazen-Williams Head Loss
Category Method
Pipeline Solution Direction Solve Downstream Only
Head Loss Calculation No Head Loss
RiverWare Warning
Changing to the selected method will allocate memory for the follo
Inflow Head
Outflow Head
Diameter
Length
C Value
Minor Losses
Velocity
OK
Cancel
t Texas
to TRA Midlothian
East Texas Pipeline3
Waxahachie B

File Edit View Slot Account

Object Name: East Texas to JFK and Mansfield

Slots | Methods | Accounts

Selected Method: Propagate Head

Category	Method
Pipe Junction Solution Direction	Solve Downstream Only
Pipe Junction Hydraulics	No Hydraulics

RiverWare Warning

Changing to the selected method will allocate memory for the following 4 slots:

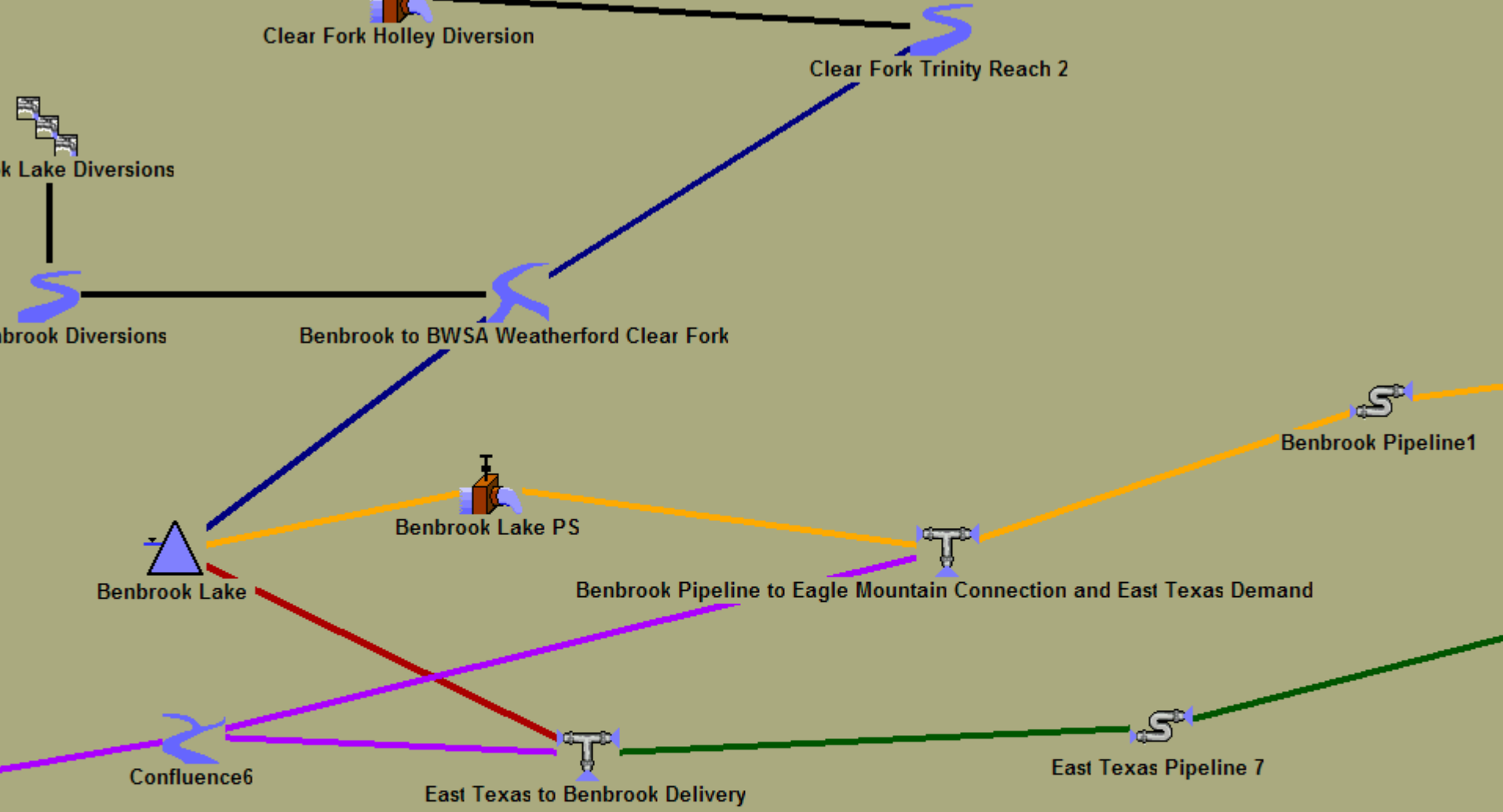
- Inflow Head
- Outflow 1 Head
- Outflow 2 Head
- Convergence

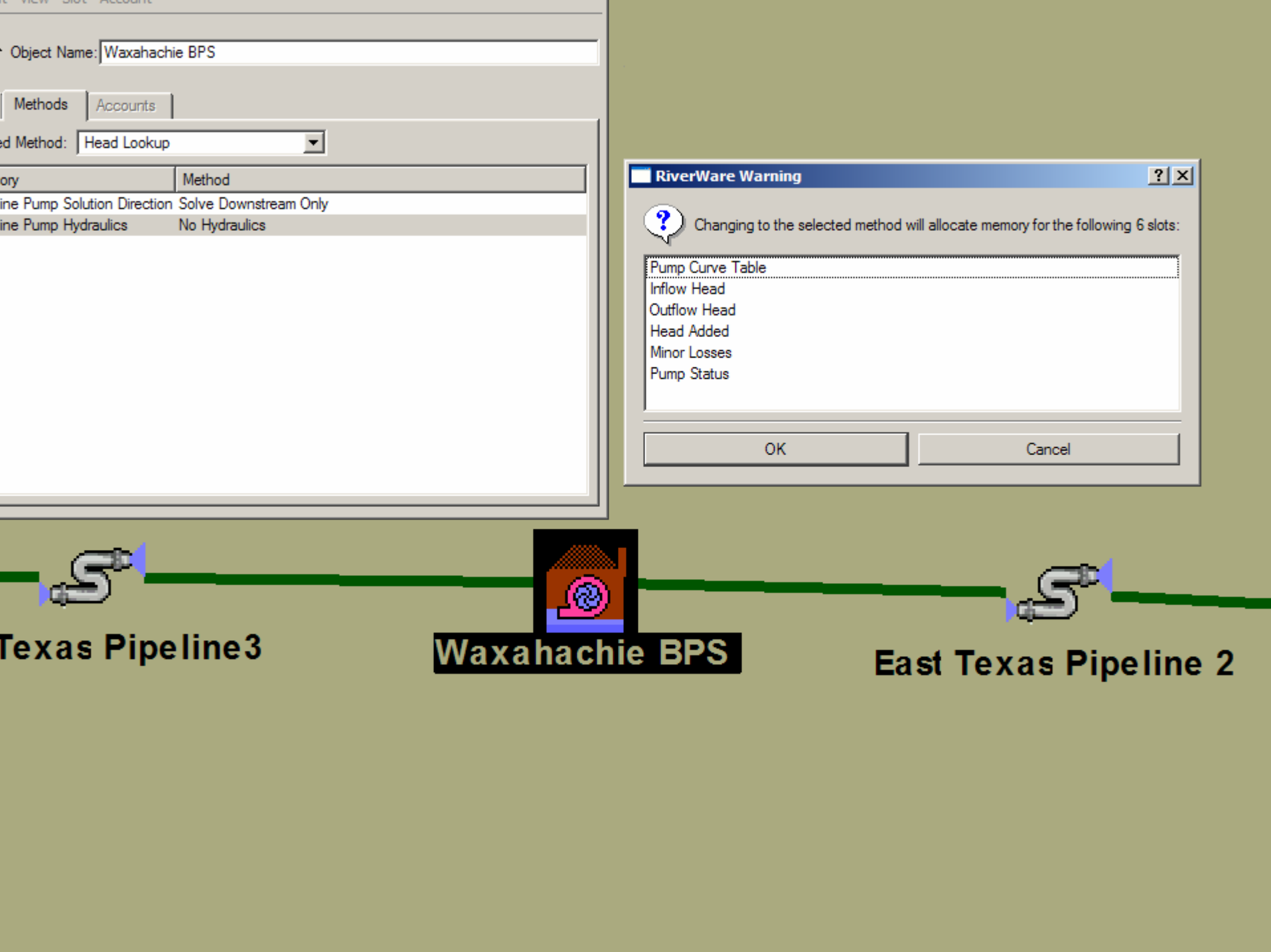
OK | Cancel

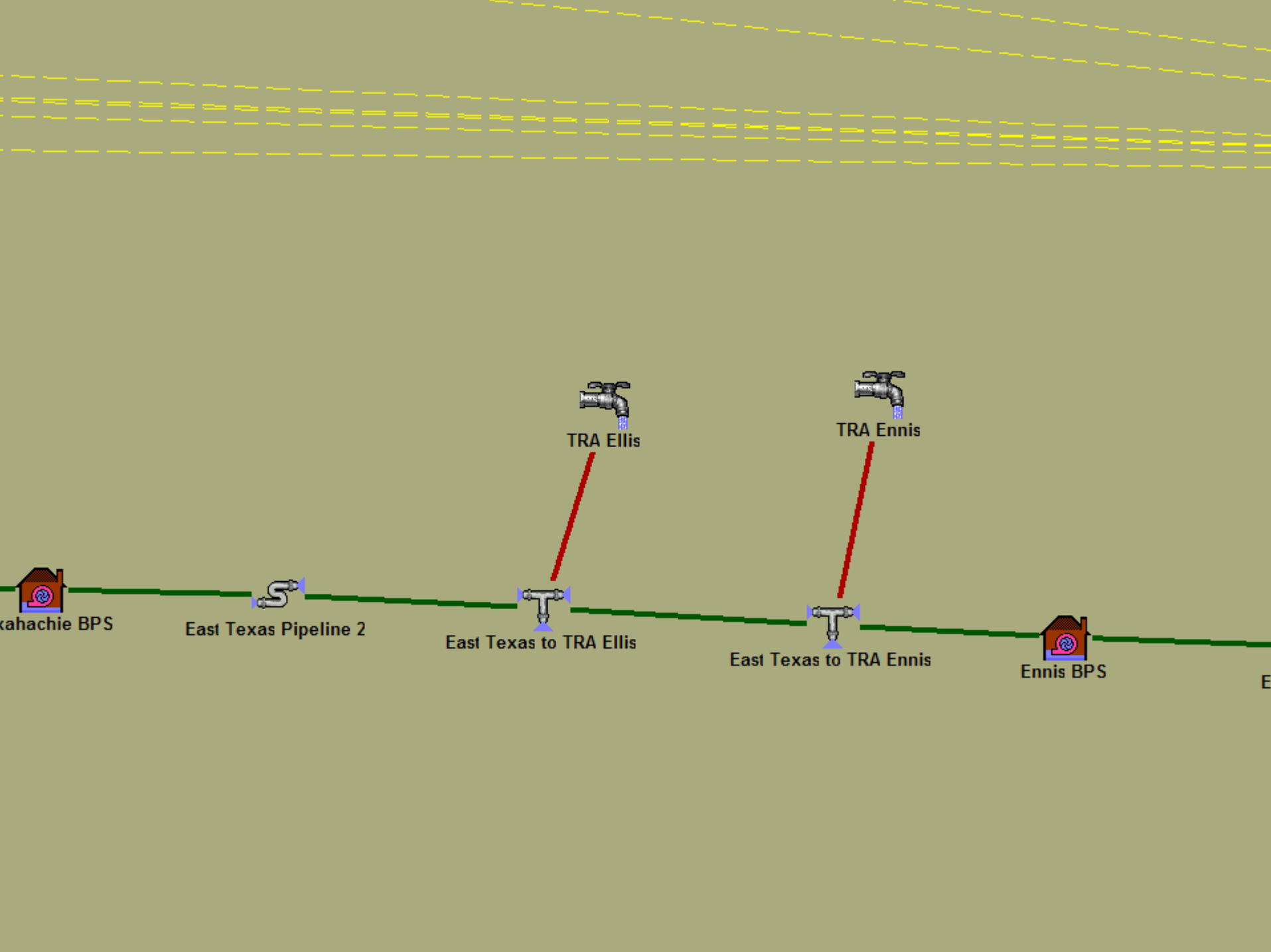
line 5

East Texas to JFK and Mansfield

East Tex


Clear Fork Holley Diversion
Clear Fork Trinity Reach 2
k Lake Diversions
brook Diversions
Benbrook to BWSA Weatherford Clear Fork
Benbrook Pipeline1
Benbrook Lake PS
Benbrook Lake
Benbrook Pipeline to Eagle Mountain Connection and East Texas Demand
Confluence6
East Texas to Benbrook Delivery
East Texas Pipeline 7


Object Name: Waxahachie BPS
Methods
Accounts
ed Method: Head Lookup
ory
Method
ine Pump Solution Direction
Solve Downstream Only
ine Pump Hydraulics
No Hydraulics
RiverWare Warning
Changing to the selected method will allocate memory for the following 6 slots:
Pump Curve Table
Inflow Head
Outflow Head
Head Added
Minor Losses
Pump Status
OK
Cancel
Texas Pipeline3
Waxahachie BPS
East Texas Pipeline 2


TRA Ellis
TRA Ennis
xahachie BPS
East Texas Pipeline 2
East Texas to TRA Ellis
East Texas to TRA Ennis
Ennis BPS

Immediate Future

- Calibration and Validation of Model with Historic Records
- Inclusion of Wetlands
- Inclusion of Future Booster Stations

Questions?

Please do not hesitate to contact me!

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Cell: 817-269-7250
lblaylock@trwd.com