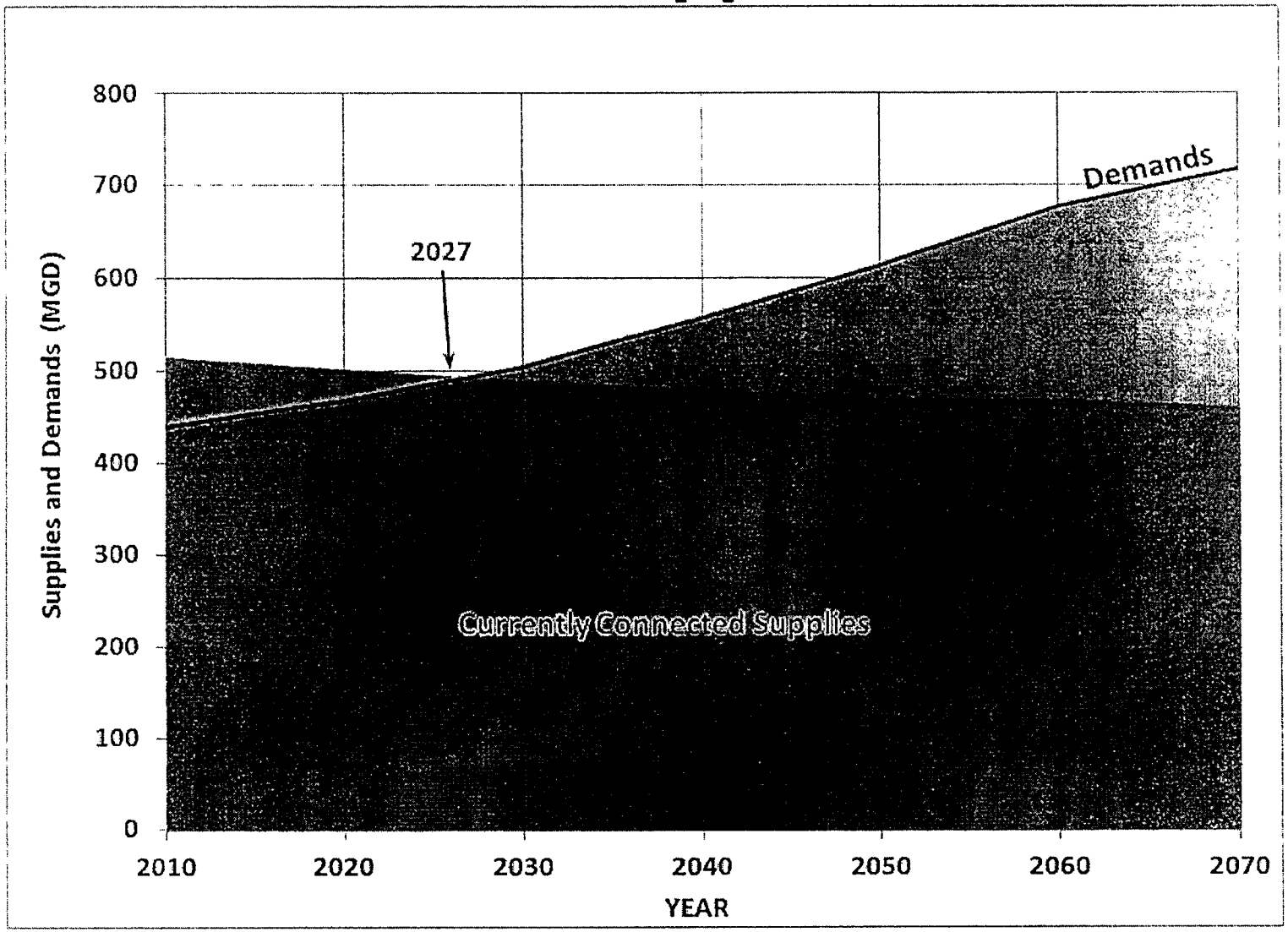
Demands / Supplies / Needs



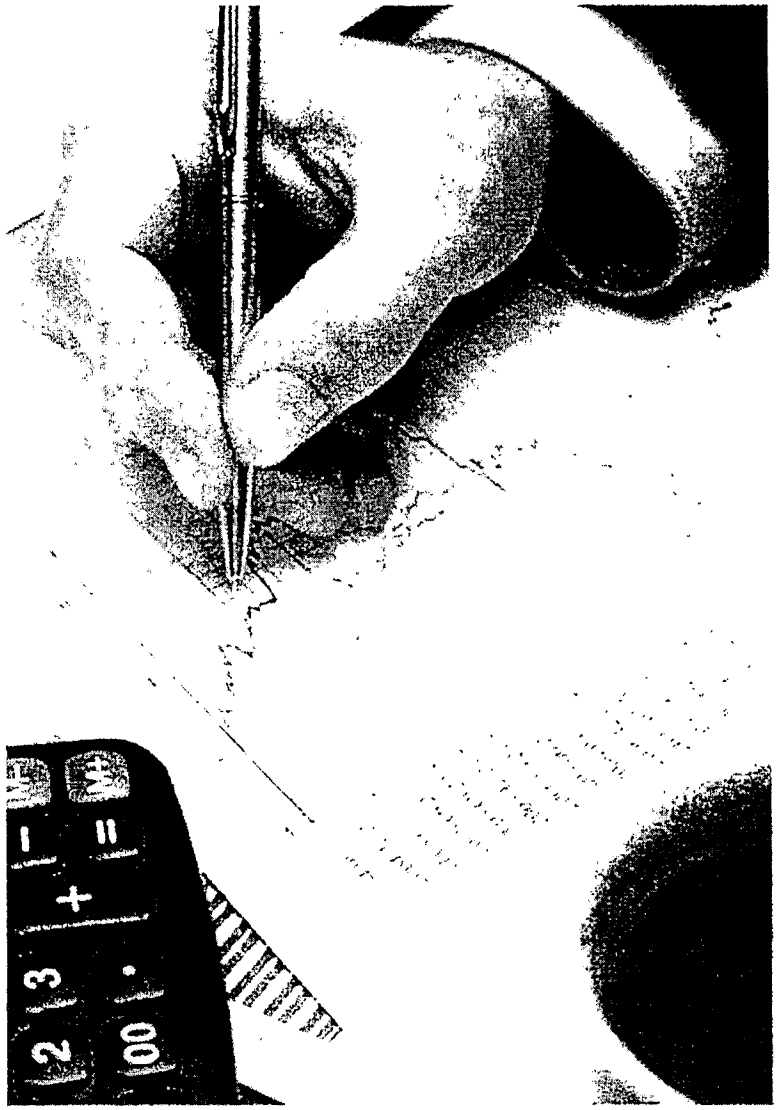
Future Water Needs

Dallas' Regional System

- Buffer Supply – Connected supply in surplus of current demands
  - Drought worse that the drought of record
  - Growth rate greater than projected
  - Emergency Demands
- Water Supply deficit (i.e. loss of reserve) begins in 2027
- By 2070 the DWU Regional System needs an additional 258 MGD

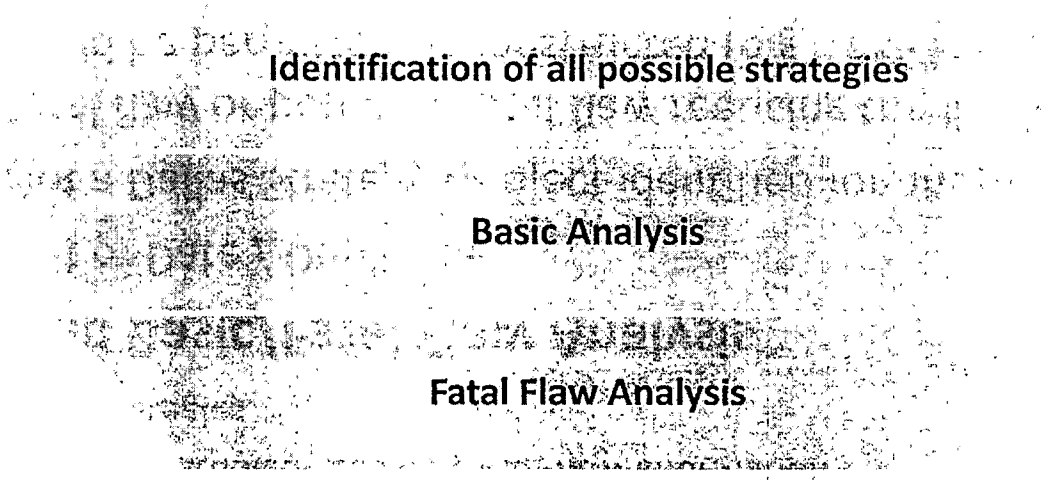
Connected Supply
Buffer Supply and Shortages

Year	Demand (MGD)	Connected Supplies (MGD)	Buffer Supply (Shortage) (MGD)
2010	440	515	75
2020	469	501	32
2030	504	489	(15)
2040	558	478	(80)
2050	614	470	(144)
2060	678	468	(210)
2070	718	460	(258)



LRWSP Water Management Strategy Preferred Options

Water Management Strategy Multi Level Screening Process



Scoring and Ranking

Detailed Analysis

Recommendations

Multi Level Screening Process

- **Identification of all possible strategies**
  - 312 strategies identified
  - 3 Classes of strategies
    - Previously studied – updated costs
    - Previously studied- updated with new information
    - New strategies
- **Performed Basic/Fatal Flaw Analysis**
    - Out of Date / Duplicate
    - Not a Dallas Strategy (project identified for another entity)
    - Fatal flaw or potential fatal flaw reducing the likelihood a project could be permitted or constructed (e.g. Lake Fastrill)
- **41 Potentially Feasible Strategies for further consideration and detailed analysis**

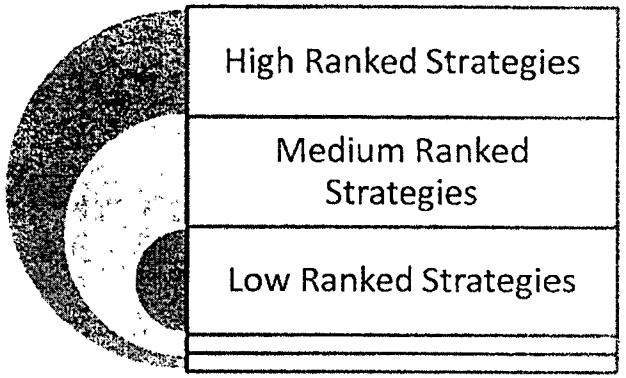
Scoring and Ranking Criteria

Basic Criteria

- Supply Available
- Total Project Cost
- Unit Cost
- Annual O&M Cost

Advanced Criteria

- Environmental Impacts
- Confidence / Permitting / Legal
- Flexibility / Phasing
- Water Quality Concerns



Detailed Analysis

- Supply operations analysis
- East vs. West Supply
- Implementation and phasing analysis
- Advanced cost scrutiny, impacts research and yield analysis
- Evaluation of impacts to existing Dallas infrastructure
- Consideration as a potential regional supply strategy
- Results in Preferred List of 14 strategies

Preferred Strategies

Strategy ID	Water Management Strategy	Projected Supply		Cost		Ranking		
		Acre-feet	MGD	per acre foot	per 1,000 gal	Basic	Advanced	Combined
A	Additional Conservation	52,481	47	$600	$1.84	20	1	1
B-1	Indirect Reuse Implementation - Main Stem Pump Station & Balancing Reservoir	114,337	102	$580	$1.78	10	3	2
B-2	Indirect Reuse Implementation - Main Stem Pump Station - NTMWD Swap Agreement	34,750	31	$239	$0.73	2	10	3
C-1	IPL - Connect to Palestine	114,337	102	$751	$2.30	27	2	4
C-2	IPL - Bachman Connection			$551	$1.69	7	11	5
D-1	Direct Reuse - Alt1	2,609	2	$701	$2.15	11	4	6
E-1	Carrizo Wilcox Groundwater 2	30,000	27	$496	$1.52	1	16	8
F-1	Neches Run-of-River	45,075	40	$636	$1.95	4	12	9
G	Lake Columbia	56,000	50	$560	$1.72	6	28	16
H	Sabine - Conjunctive Use -System Operations (Groundwater and Off Channel Reservoir)	104,200	93	$734	$2.25	21	13	18
J-2	Red River Off Channel Reservoir -1	114,000	102	$734	$2.25	24	8	21
L-1	Wright Patman (232.5) / Marvin Nichols (296.5)	114,000	102	$742	$2.28	28	15	25
O-2	Toledo Bend to West System	200,000	179	$1,023	$3.14	38	36	39
Q	Lake Texoma Desalination	146,000	130	$1,186	$3.64	36	38	37

Demand, Supply and Recommended Strategies

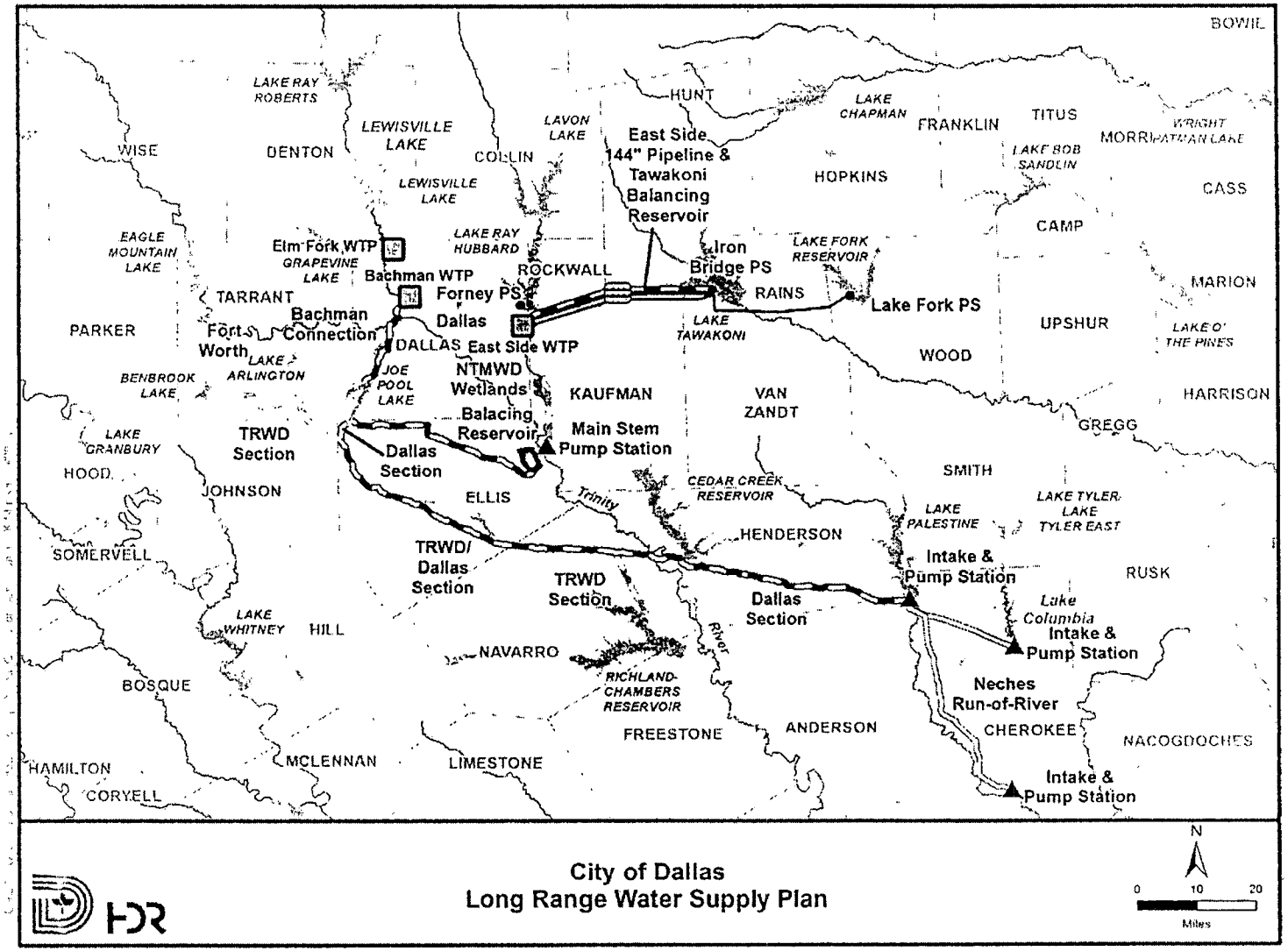
Strategy ID	Planned Supplies (MGD)	2020	2030	2040	2050	2060	2070
	Projected Demands	**469**	**504**	**558**	**614**	**678**	**718**
	Total Available Water Supplies	**501**	**489**	**478**	**470**	**468**	**460**
	Current Supply Buffer (Shortage)	**32**	**(15)**	**(80)**	**(144)**	**(210)**	**(258)**
	Water Management Strategies						
A	Additional Conservation	11	25	37	43	45	47
	Indirect Reuse Implementation						
B-2	Main Stem Pump Station -NTMWD Swap Agreement	31	31	31	31	31	31
B-1	Main Stem Balancing Reservoir				75	91	102
	Connect Lake Palestine						
C-1	IPL Connection to Palestine		102	102	102	102	102
C-2	IPL Connection to Bachman						
F-1	Neches Run-of-River					40	40
G	Lake Columbia						50
	Total Supplies from Strategies	**42**	**158**	**170**	**251**	**309**	**372**
	Total Supplies	**543**	**647**	**648**	**721**	**777**	**832**
	Supply Buffer	**74**	**143**	**90**	**107**	**99**	**114**

Alternate Strategies

Strategy ID	Planned Supplies (MGD)	2020	2030	2040	2050	2060	2070
D-1	Direct Reuse Alternative 1					2	2
E-1	Carrizo Wilcox Groundwater 2					27	27
H	Sabine Conjunctive SysOp (Off Channel Reservoir and Groundwater)					93	93
J-2	Red River Off Channel Reservoir -1					102	102
L-1	Wright Patman (232.5) / Marvin Nichols (296.5)					102	102
O-2	Toledo Bend to West System					179	179
Q	Lake Texoma Desalinization					130	130

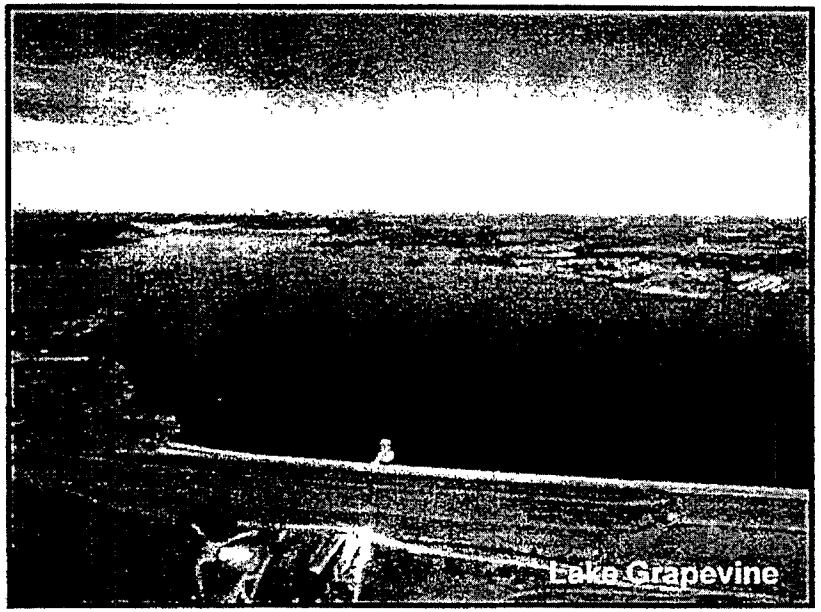
Note: Strategy E-1 and H are mutually exclusive (i.e. the Carrizo Wilcox groundwater in Strategy E-1 is the same groundwater in Strategy H).

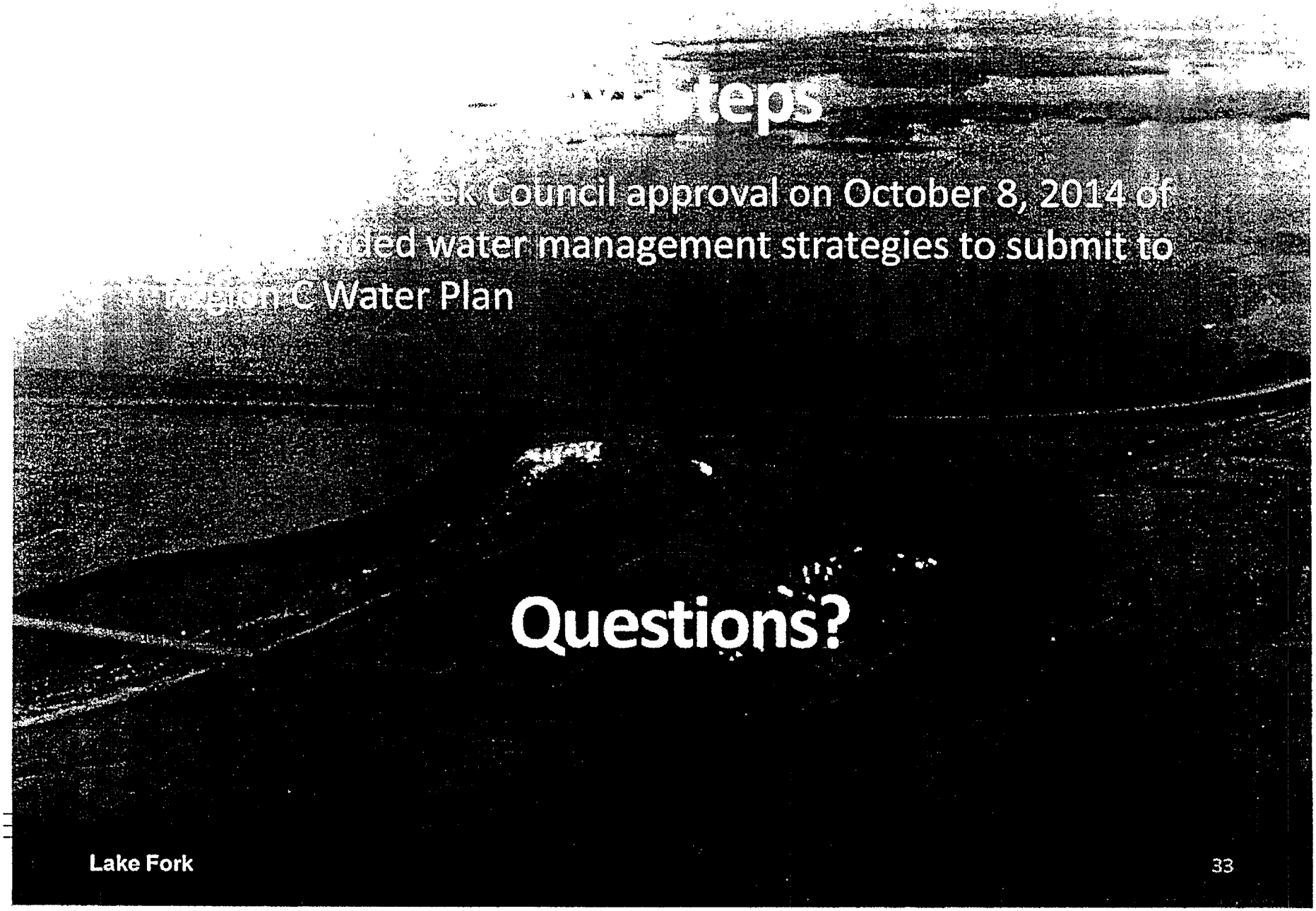
Recommended Strategies 2020 - 2070



Summary

- System average day water demands reduced by 23% or on average approximately 151 MGD
- Connected firm yield reduced over time due to sedimentation and increased evaporation from higher temperatures
- Projected supply and demand deficit beginning in 2027
  - 15 MGD deficit in 2030
  - 258 MGD deficit by 2070
- Recommended strategies identified to address deficit:
  - Additional conservation
  - Indirect Reuse Implementation
    - Main Stem Pump Station (NTMWD Swap Agreement)
    - Main Stem Balancing Reservoir
  - Lake Palestine (Integrated Pipeline Project)
  - Neches Run-of-River
  - Lake Columbia

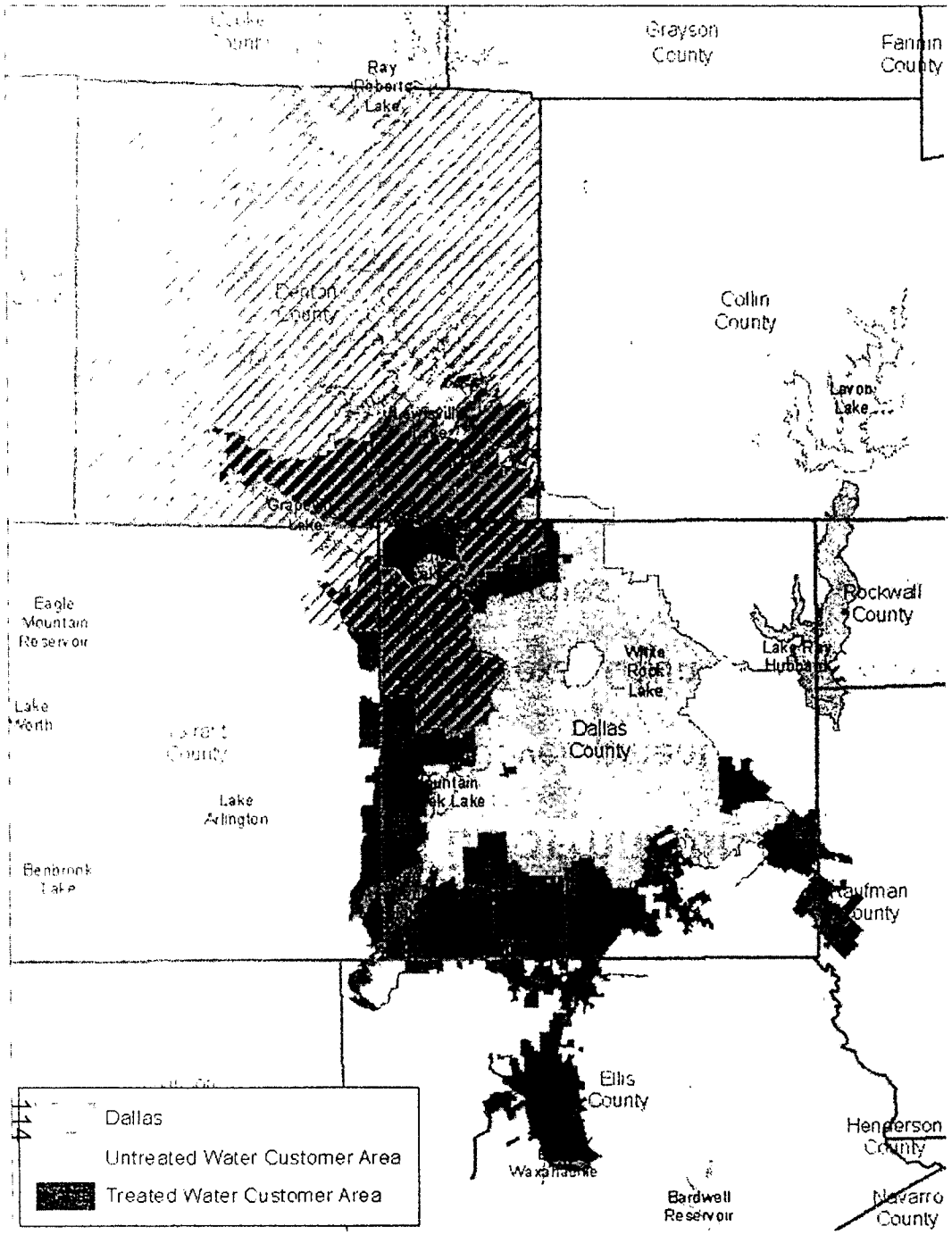



Steps
Seek Council approval on October 8, 2014 of
ded water management strategies to submit to
Region C Water Plan
Questions?
Lake Fork
33

Appendix

- 2014 Long Range Water Supply Plan Data
- 2005 LRWSP Approved Water Management Strategies

2014 LONG RANGE WATER SUPPLY PLAN DATA



Dallas Water Utilities Service Area

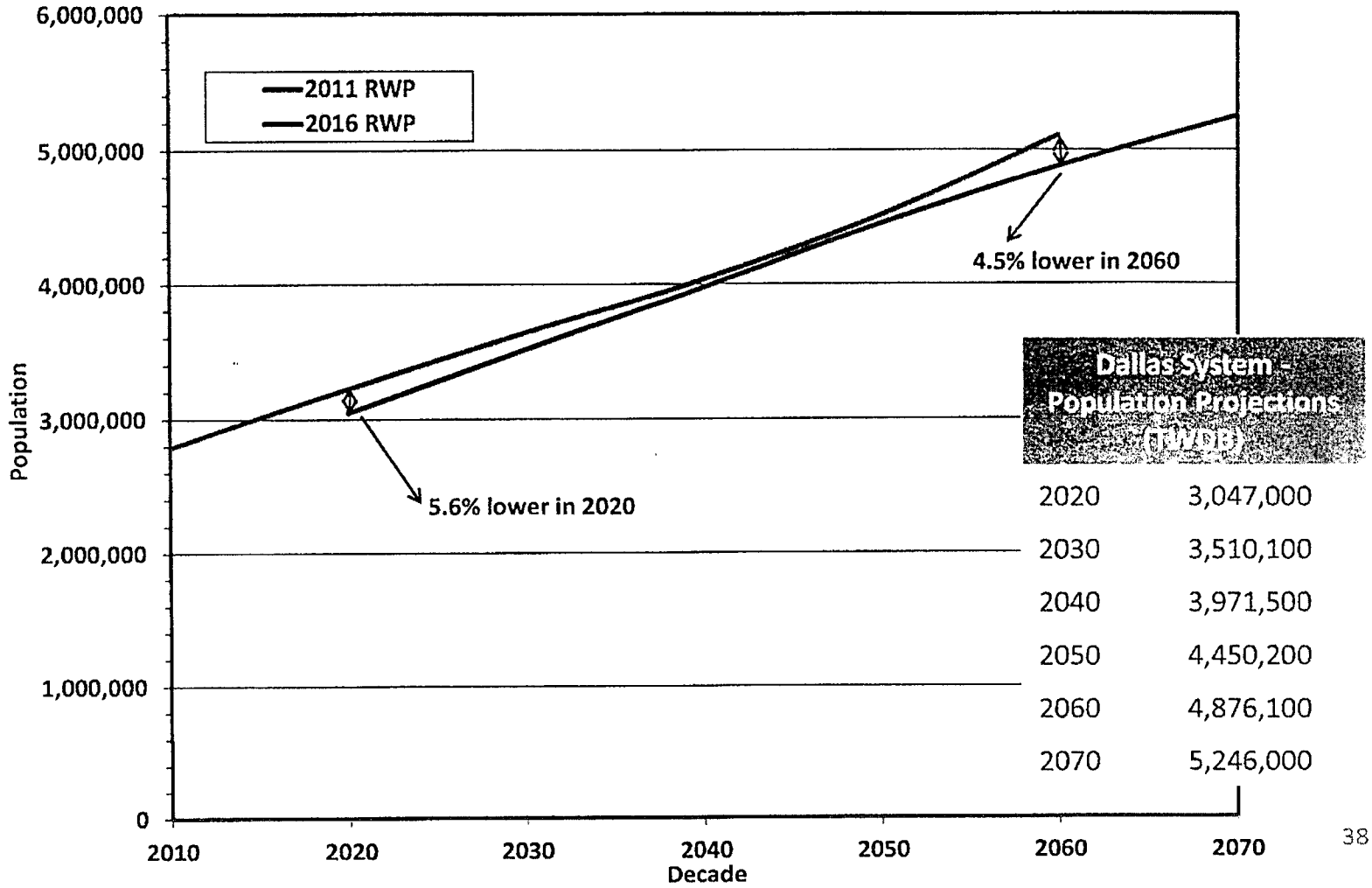
Population served:2.4 million

- 1.2 million in Dallas
- 1.2 million in 27 wholesale customer cities

Population Projections

- The foundation of water planning
- Sources of information
  - Texas Water Development Board
  - North Central Texas Council of Governments
  - Independent studies
  - U. S. Census
- Population data is studied for service area including City of Dallas, customer cities and growth areas
- Population curves for projected years are developed by adjusting previous projections against actual data

Population Projections – DWU System



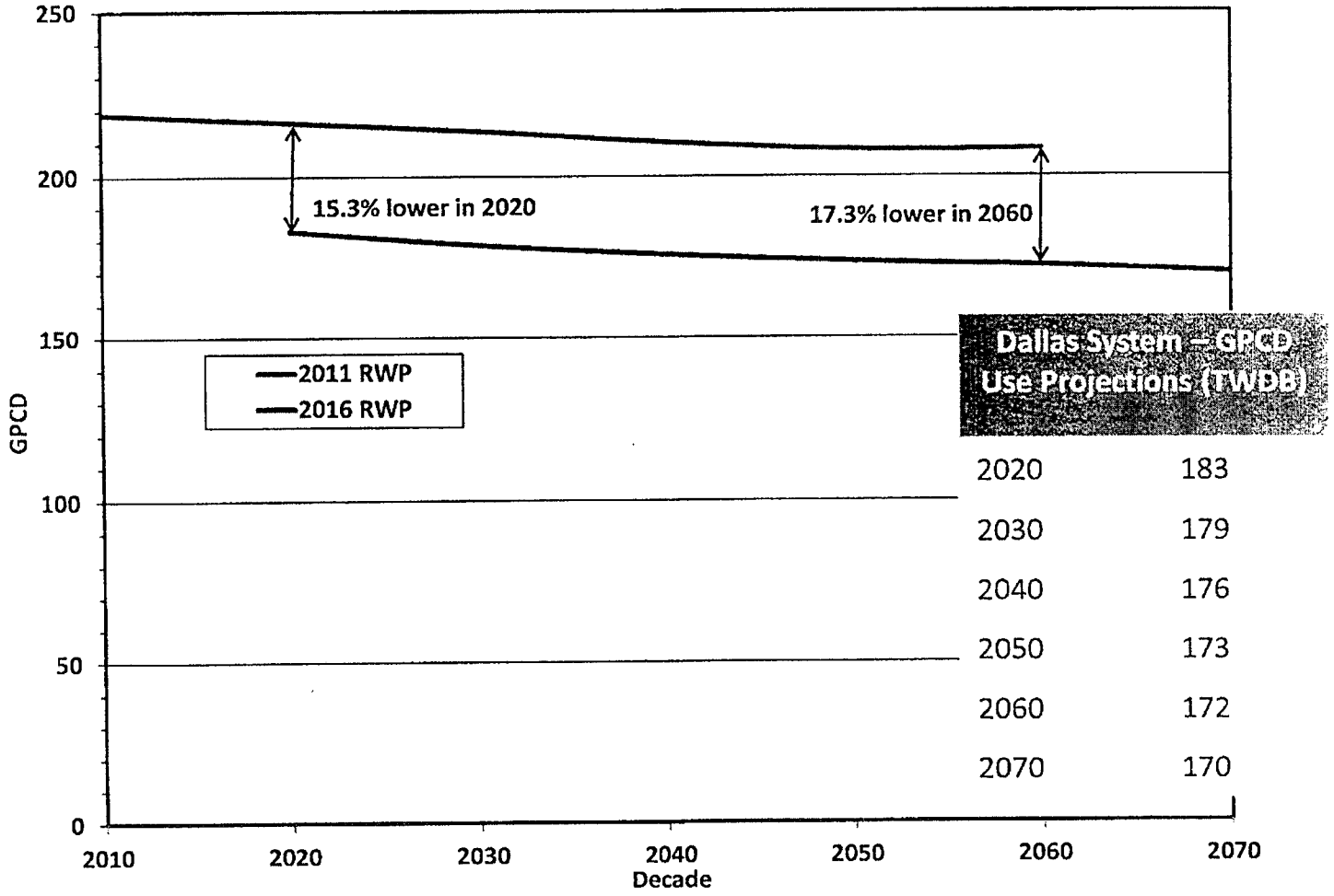
Dallas System – Population Projections (DWU)	
2020	3,047,000
2030	3,510,100
2040	3,971,500
2050	4,450,200
2060	4,876,100
2070	5,246,000

Per Capita Demand Projections

- Water needed by a user on a per-person basis (expressed in gallons per capita per day or GPCD)
- Demands include all types of water use such as residential, commercial, industrial and other for the City of Dallas, customer cities and potential customer cities
- Data analyzed to project average day demands:
  - Historical water demands for the City of Dallas and current customer cities and growth areas
  - Climatic conditions
  - Population density and land use
  - Relative density of commercial businesses
  - Effectiveness of conservation programs

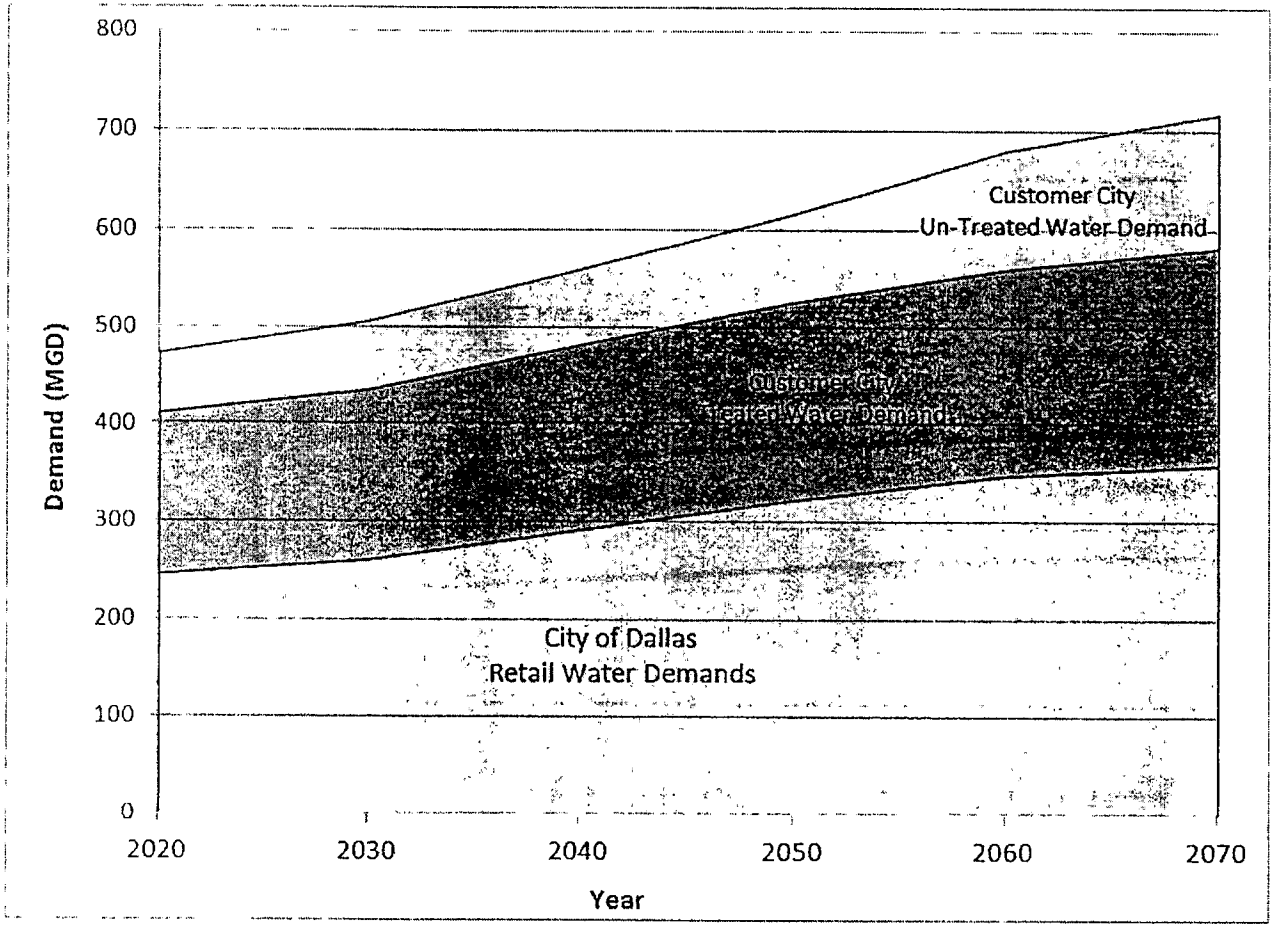
CAUTION: Per Capita Demand Comparisons can only be made on the same system from year to year **not** system to system

DWU System Per Capita Use
(TWDB - Baseline)

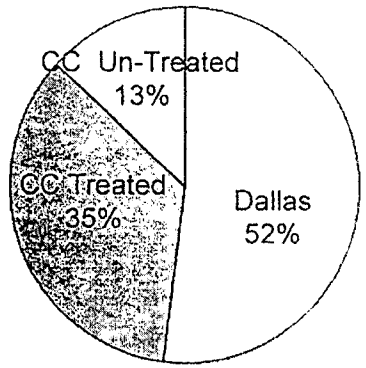


Dallas System – GPCD Use Projections (TWDB)	
2020	183
2030	179
2040	176
2050	173
2060	172
2070	170

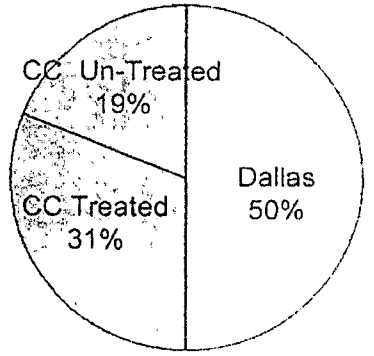
Demand Breakout



2020

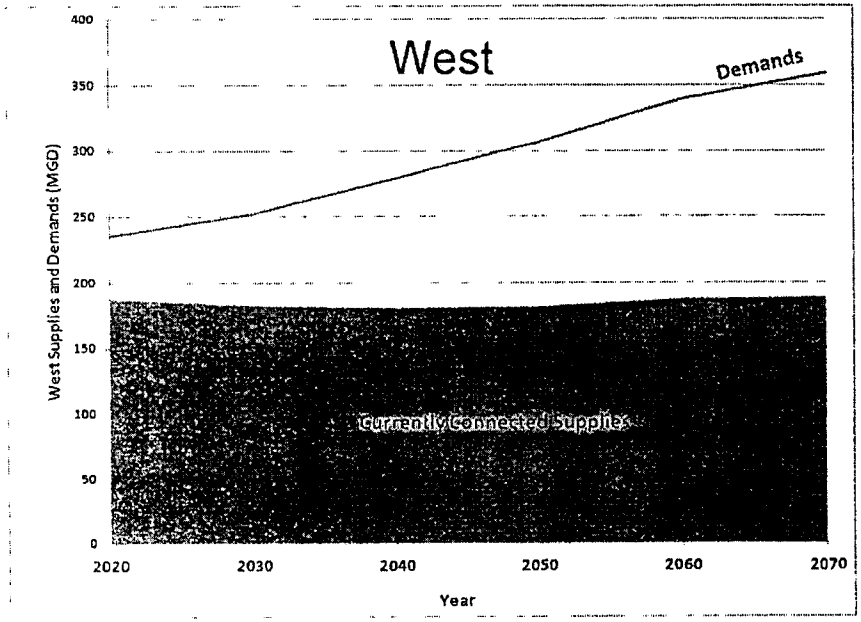


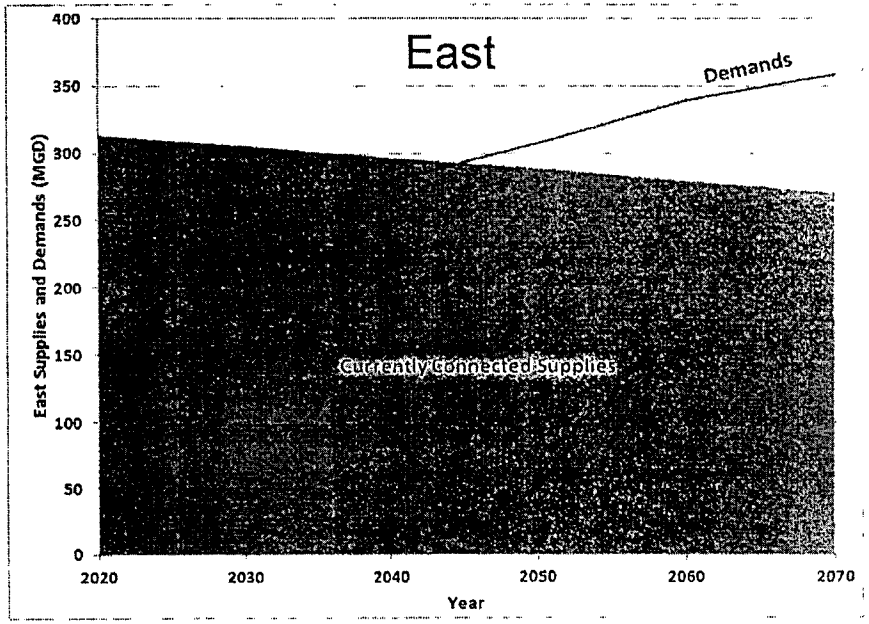
2070

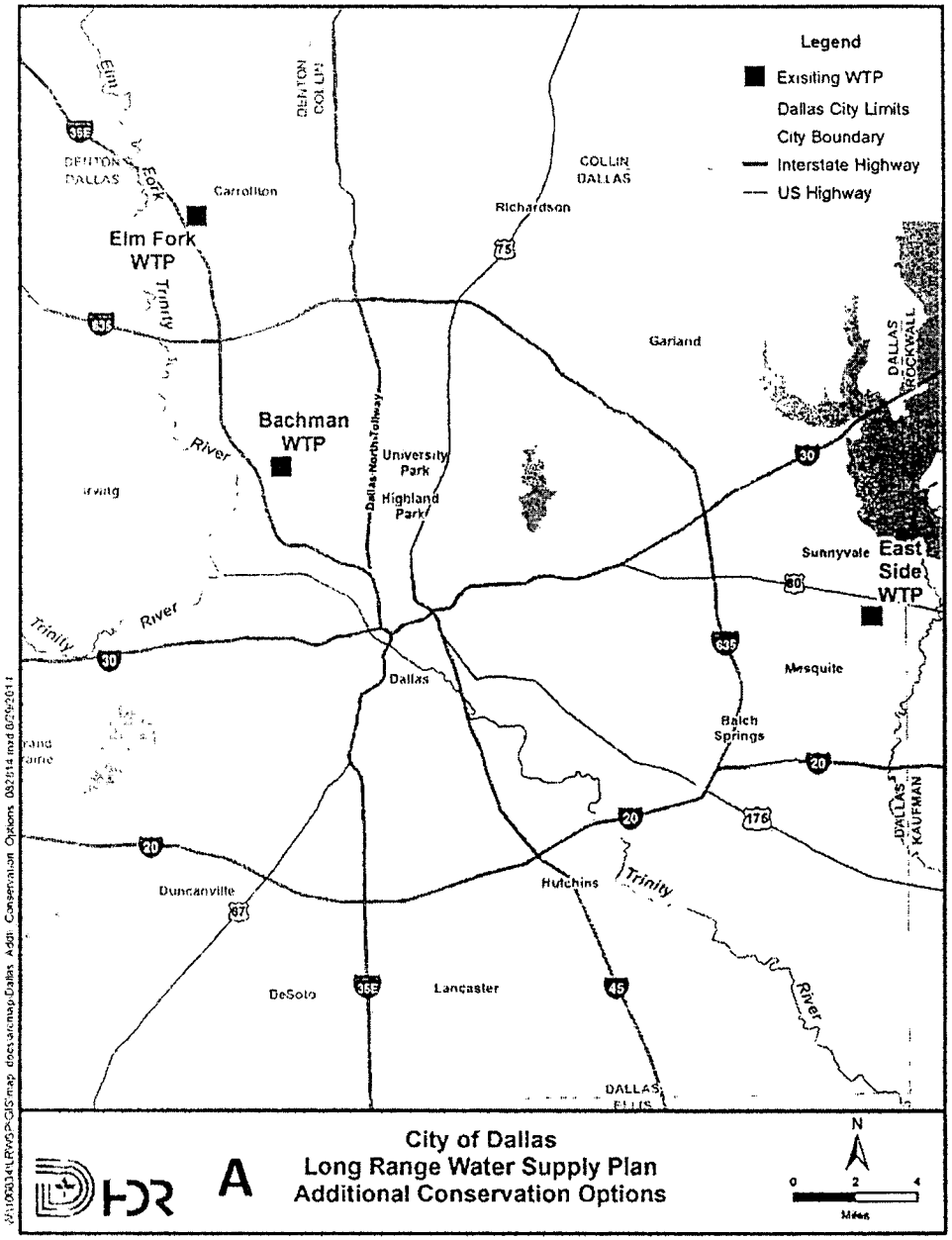


East vs. West System Demand / Supply / Need Summary

- Approximate 50/50 split between East and West Demands
- East currently has more supply than West
- Planned Additional Conservation and Reuse Applied
- West has immediate Needs



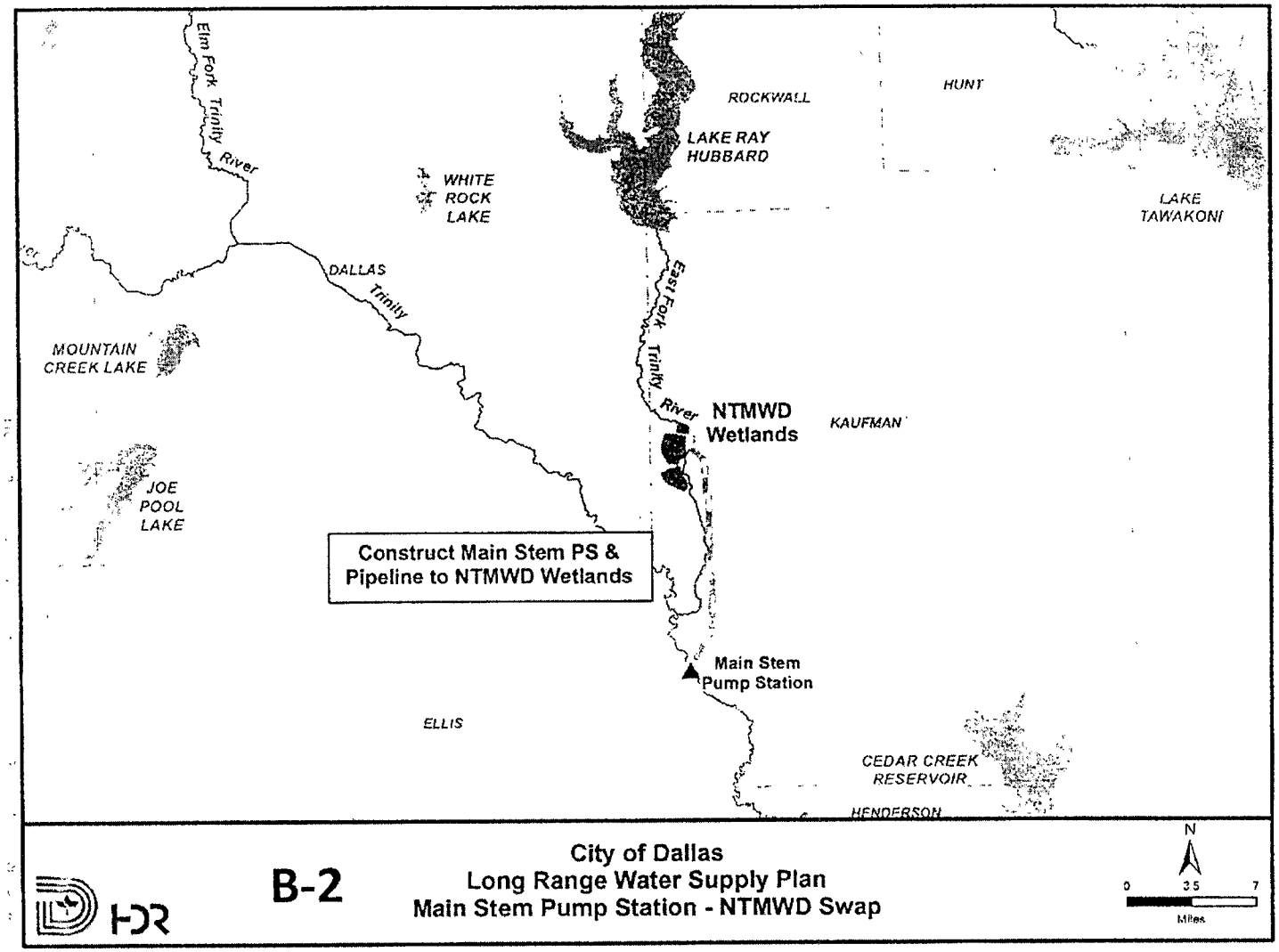




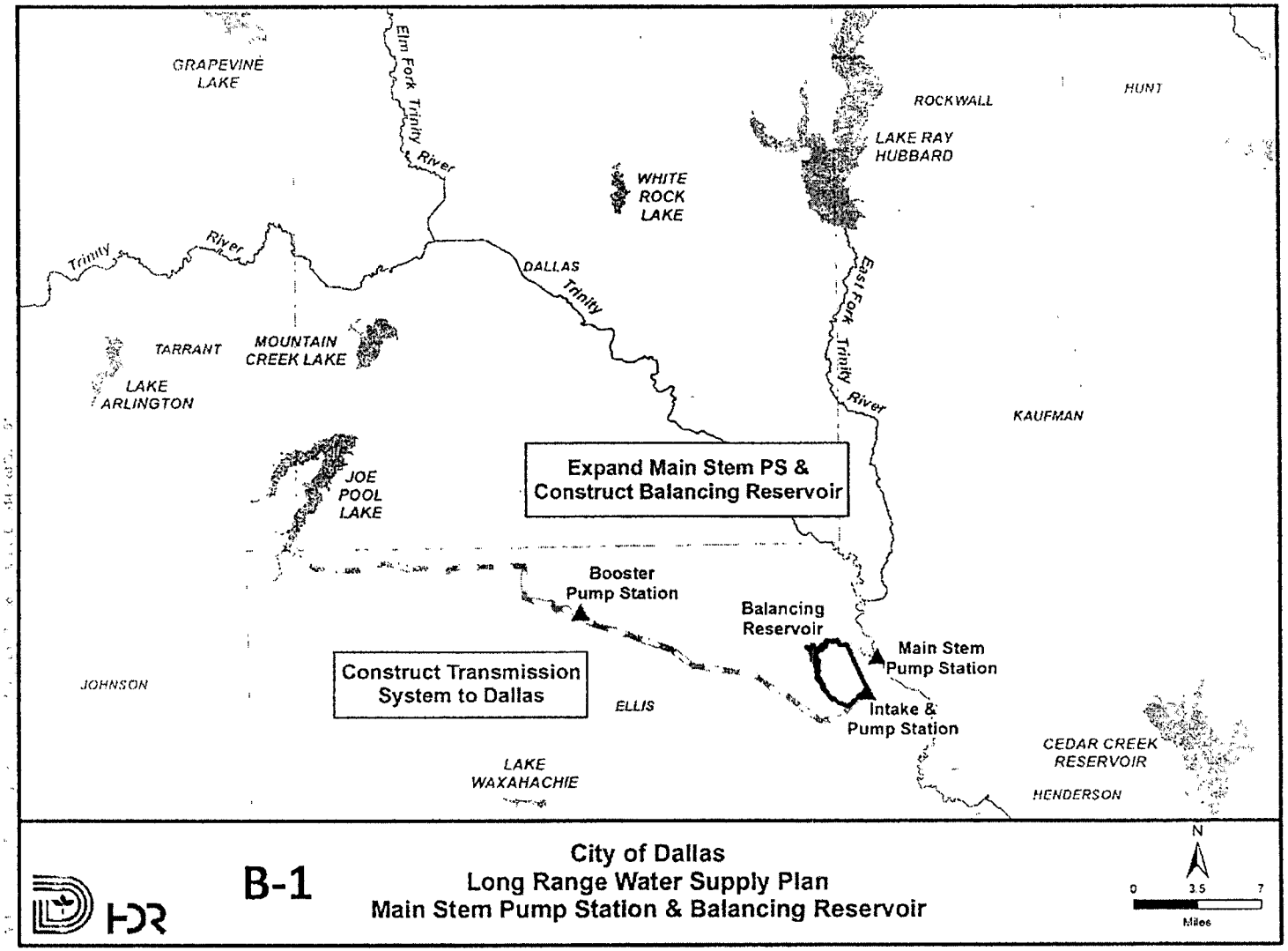
Key Initiatives for Additional Conservation

- Water loss control and system efficiencies
  - Including WTP Efficiencies
- New rebate and incentive programs
- Increased education and outreach to DWU Wholesale Customers
- Targeted focus on high-use customer segments
- Increased utilization of mobile technologies aimed at impacting consumer behavior

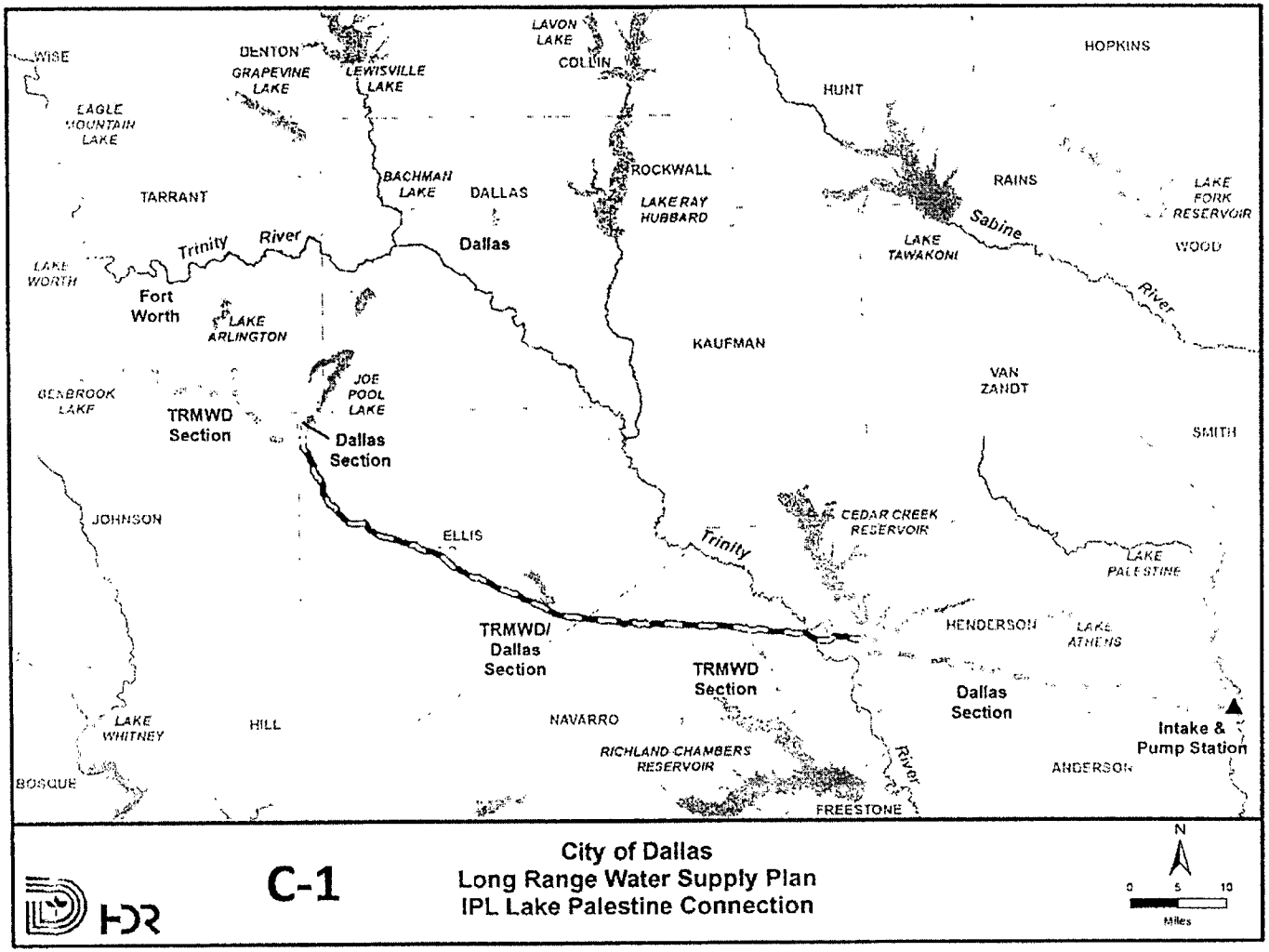
Indirect Reuse Implementation - Main Stem Pump Station



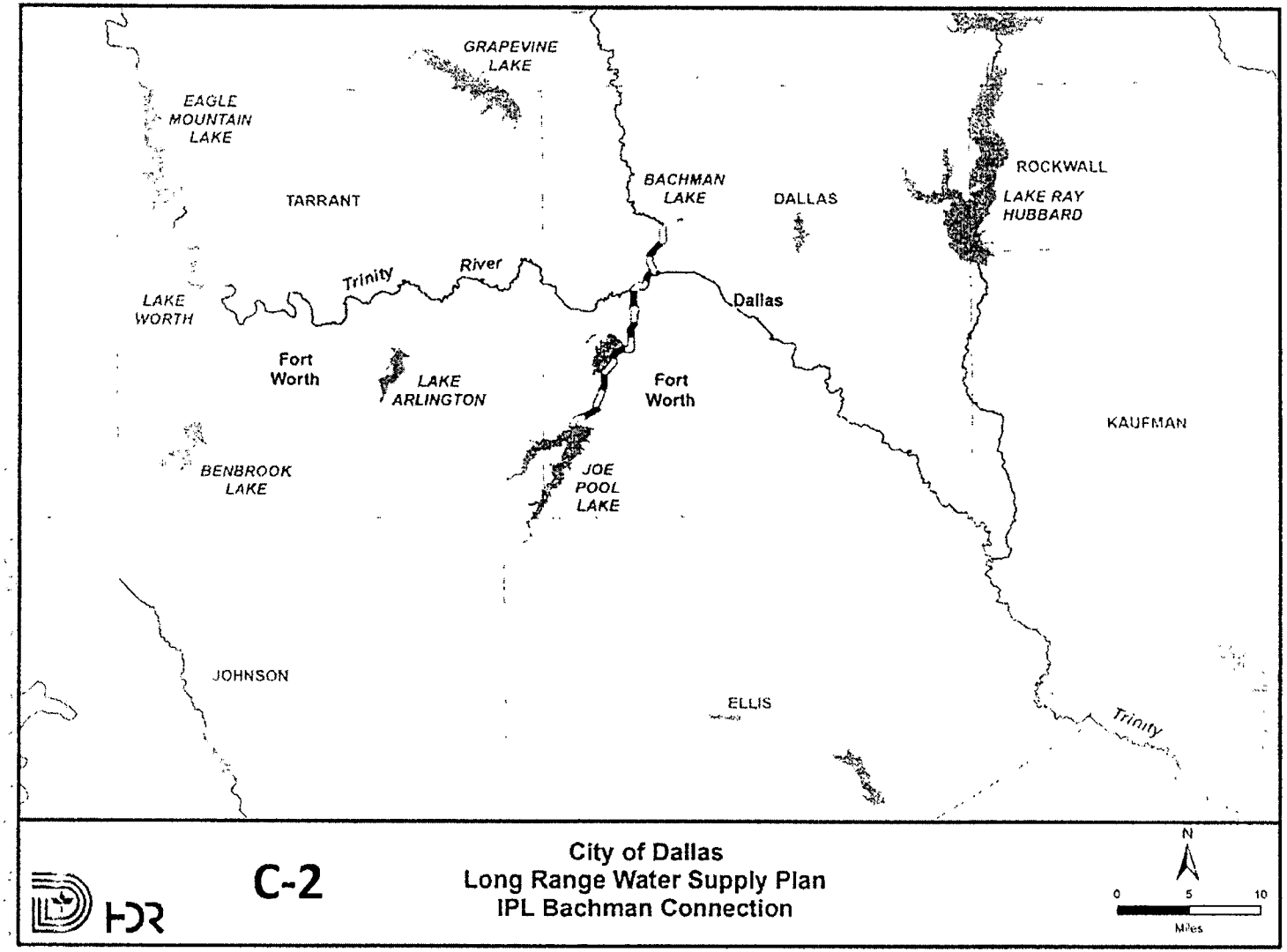
Indirect Reuse Implementation - Main Stem Pump Station and Balancing Reservoir



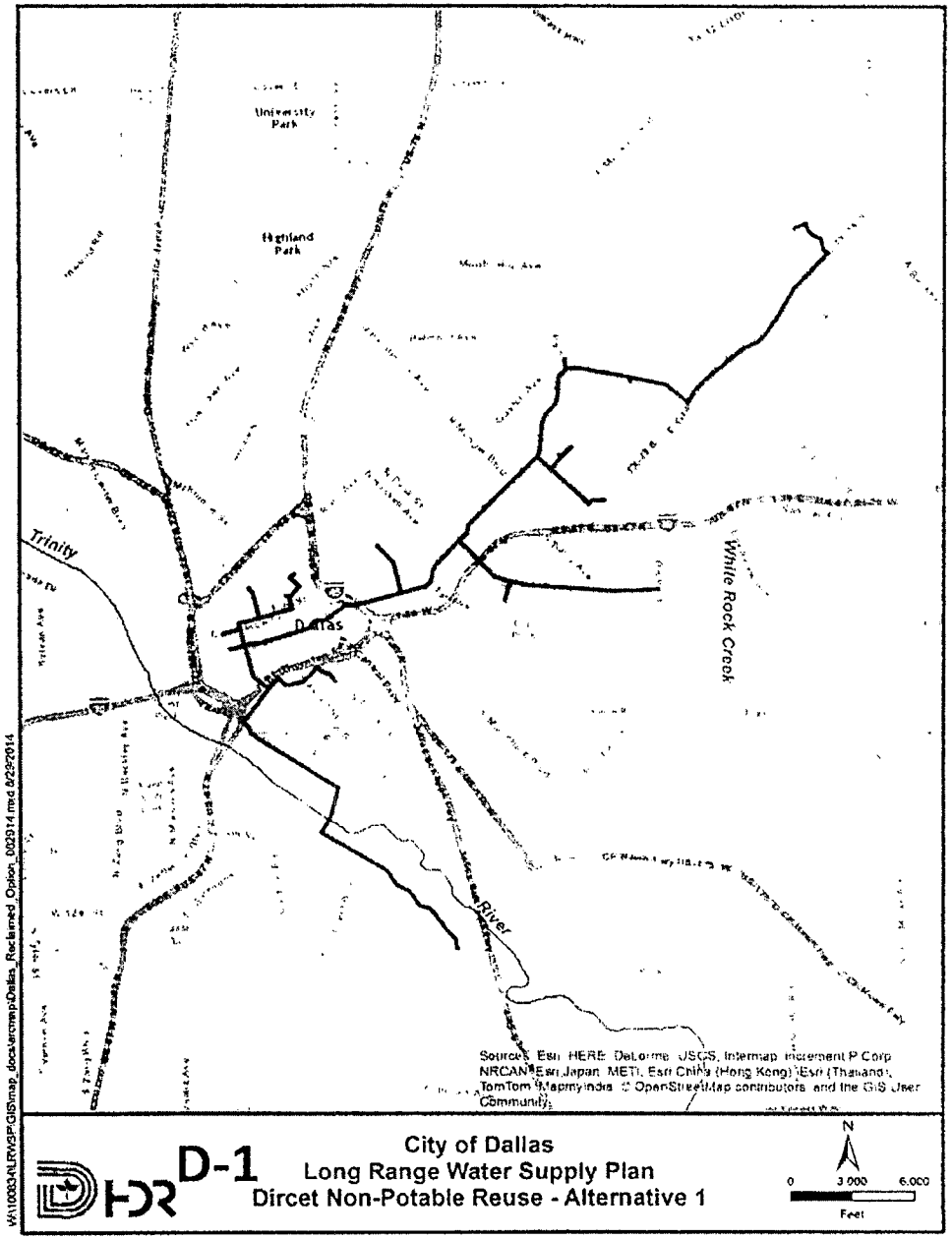
Integrated Pipeline (IPL) to deliver Lake Palestine Water to Dallas



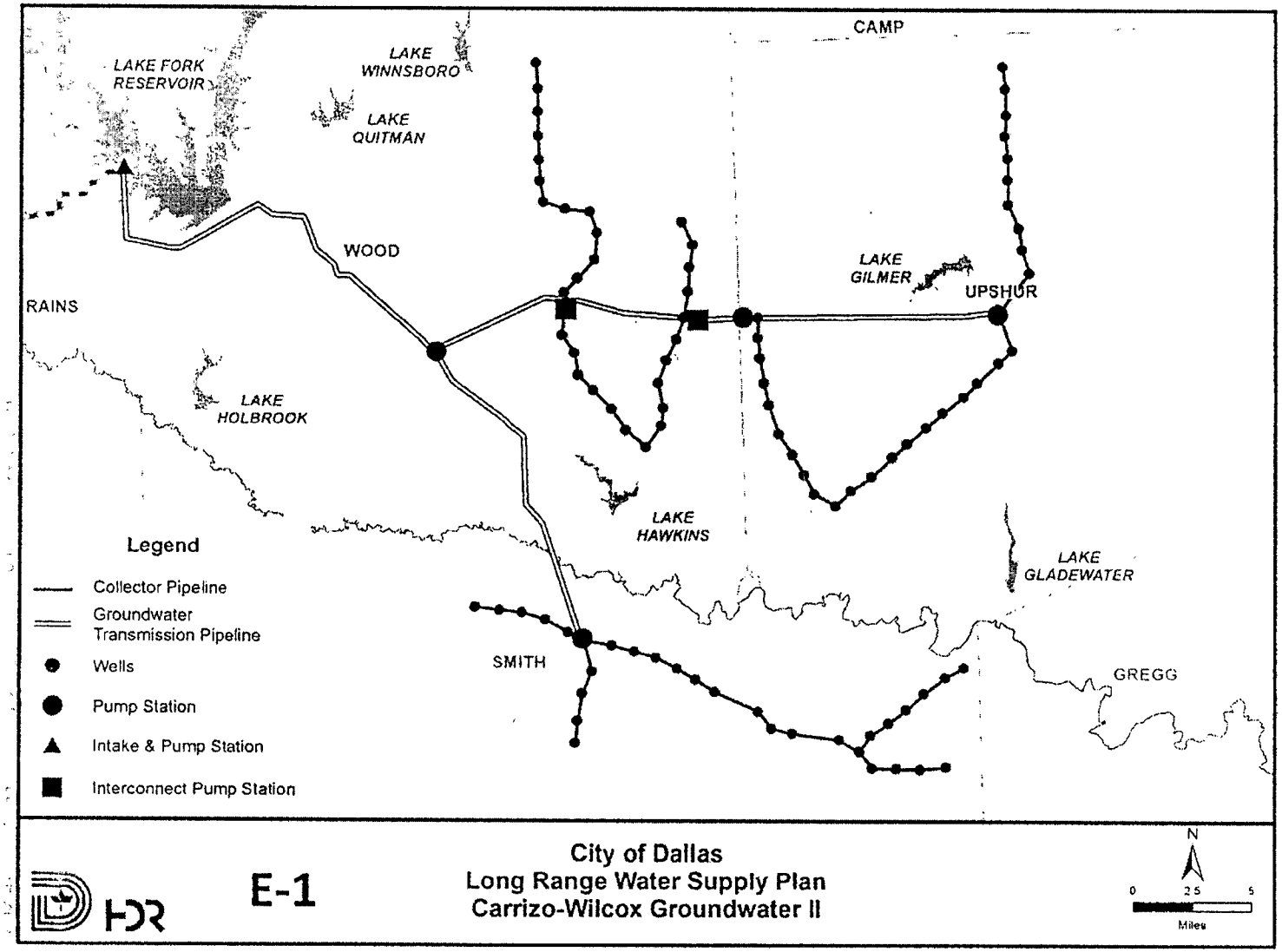
Integrated Pipeline (IPL) – Bachman Connection



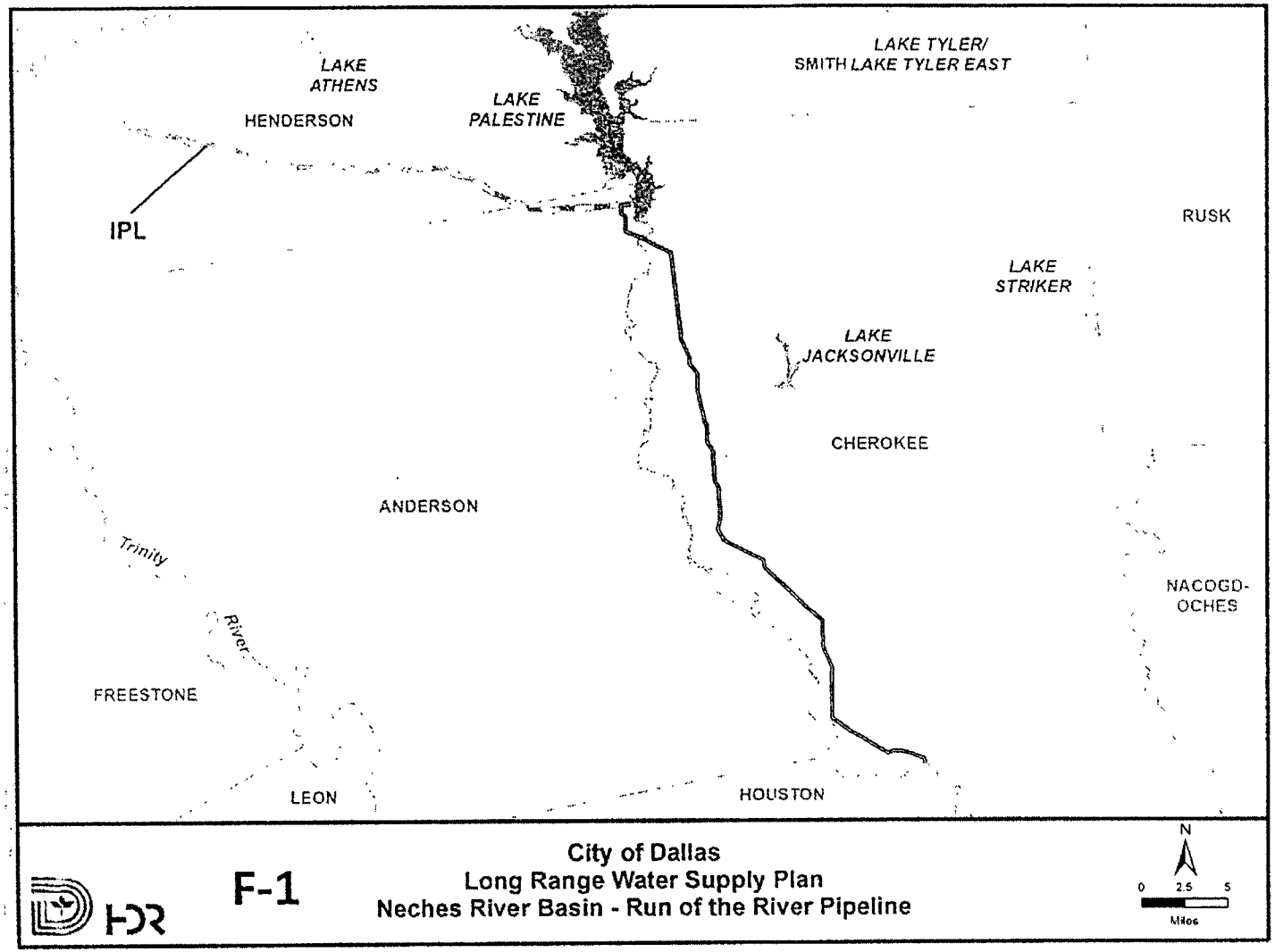
Direct Non-Potable Reuse Alternative 1



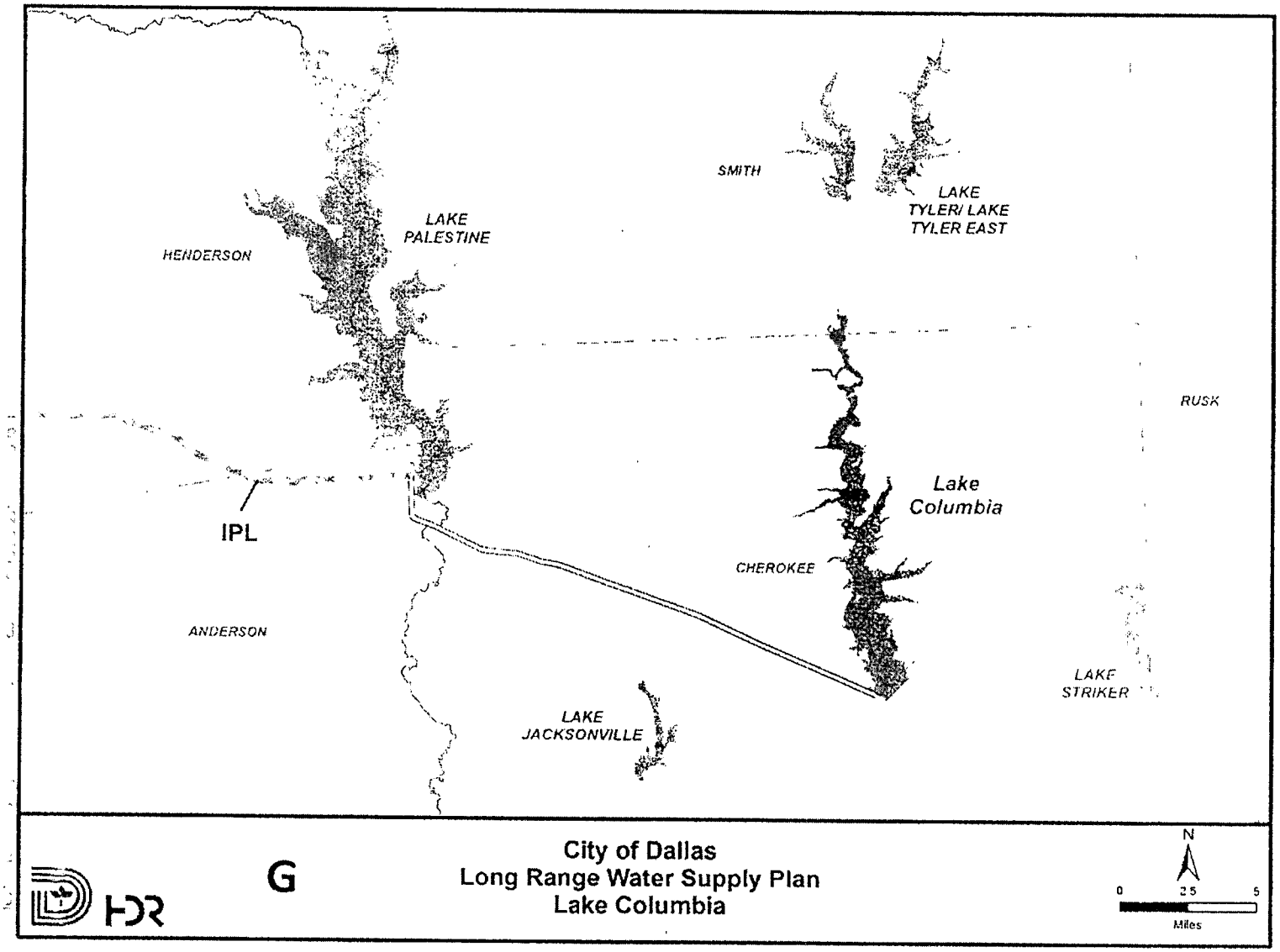
Carrizo Wilcox Groundwater 2 Strategy



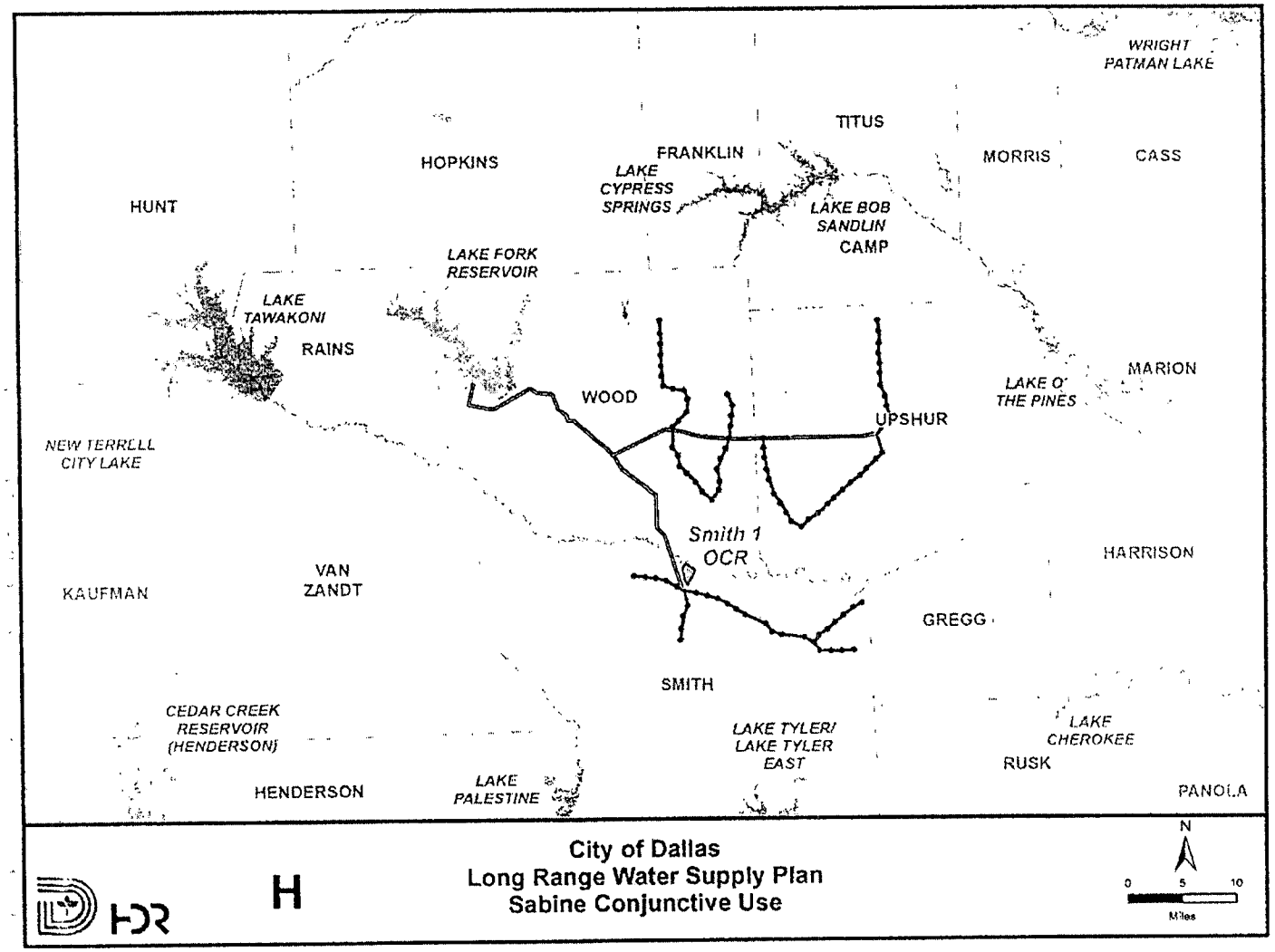
Neches River Basin - Run of the River Diversion & Pipeline



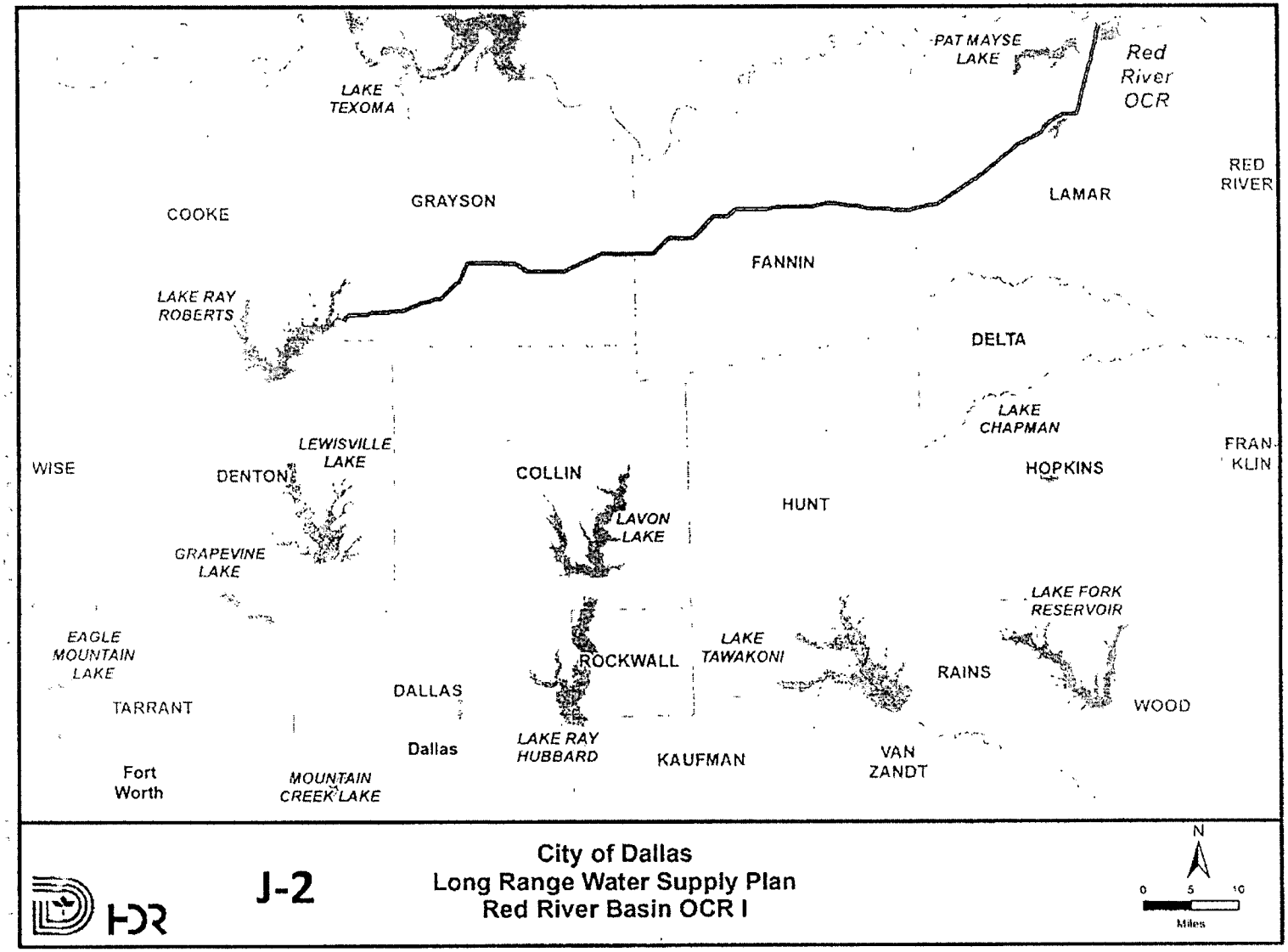
Lake Columbia



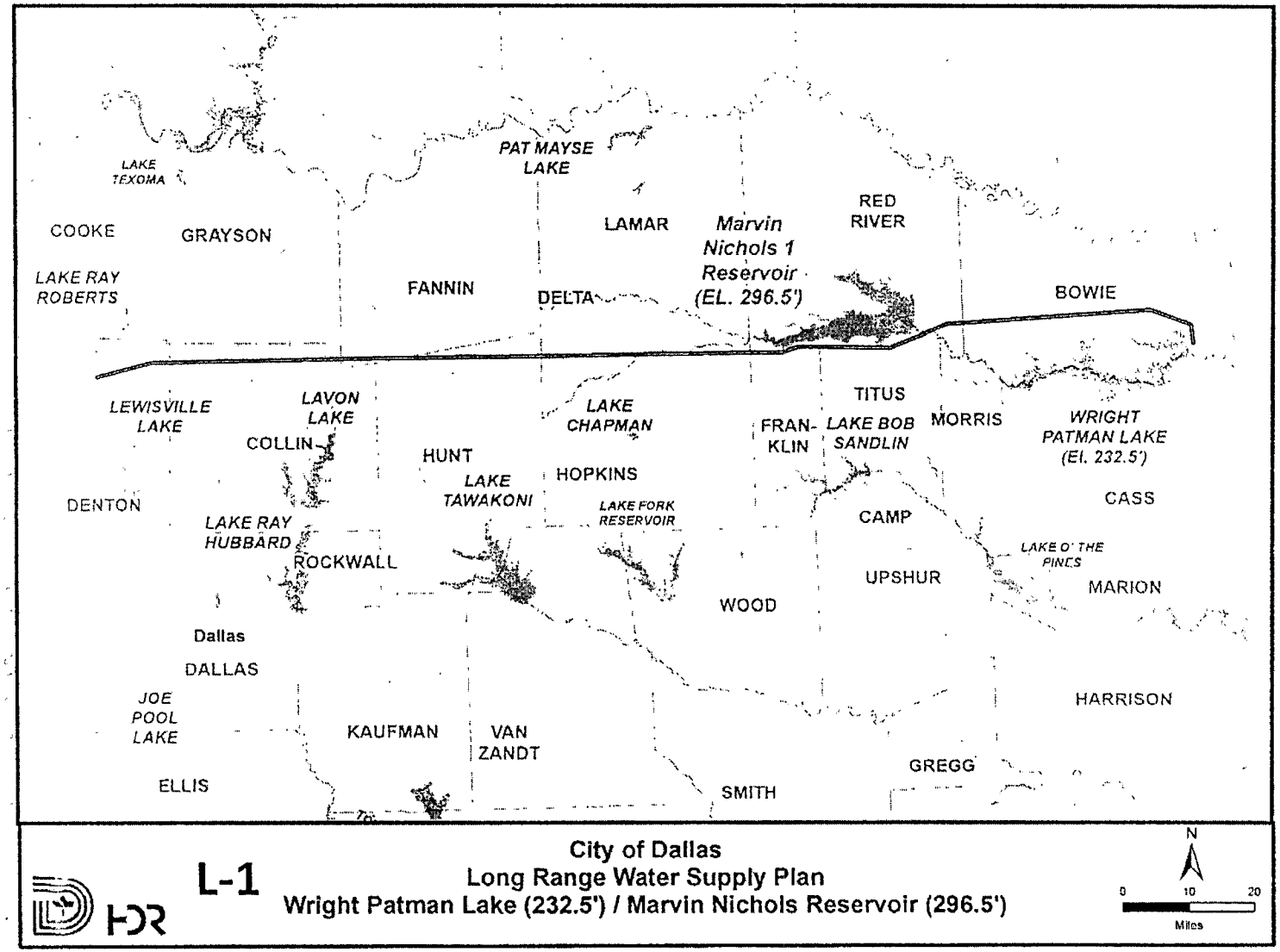
Sabine Basin – Sabine OCR Conjunctive Use of Carrizo-Wilcox Groundwater



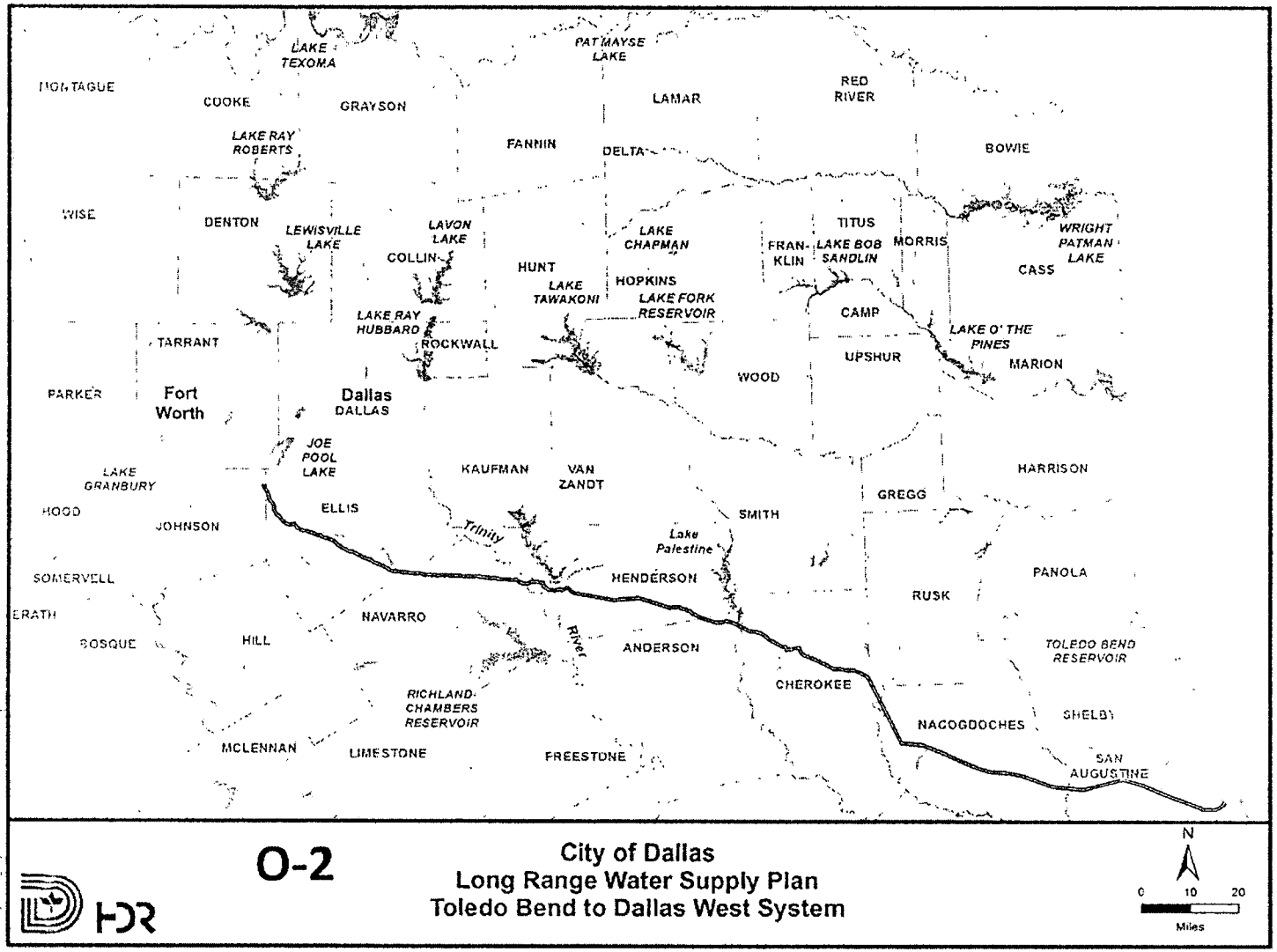
Red River OCR 1



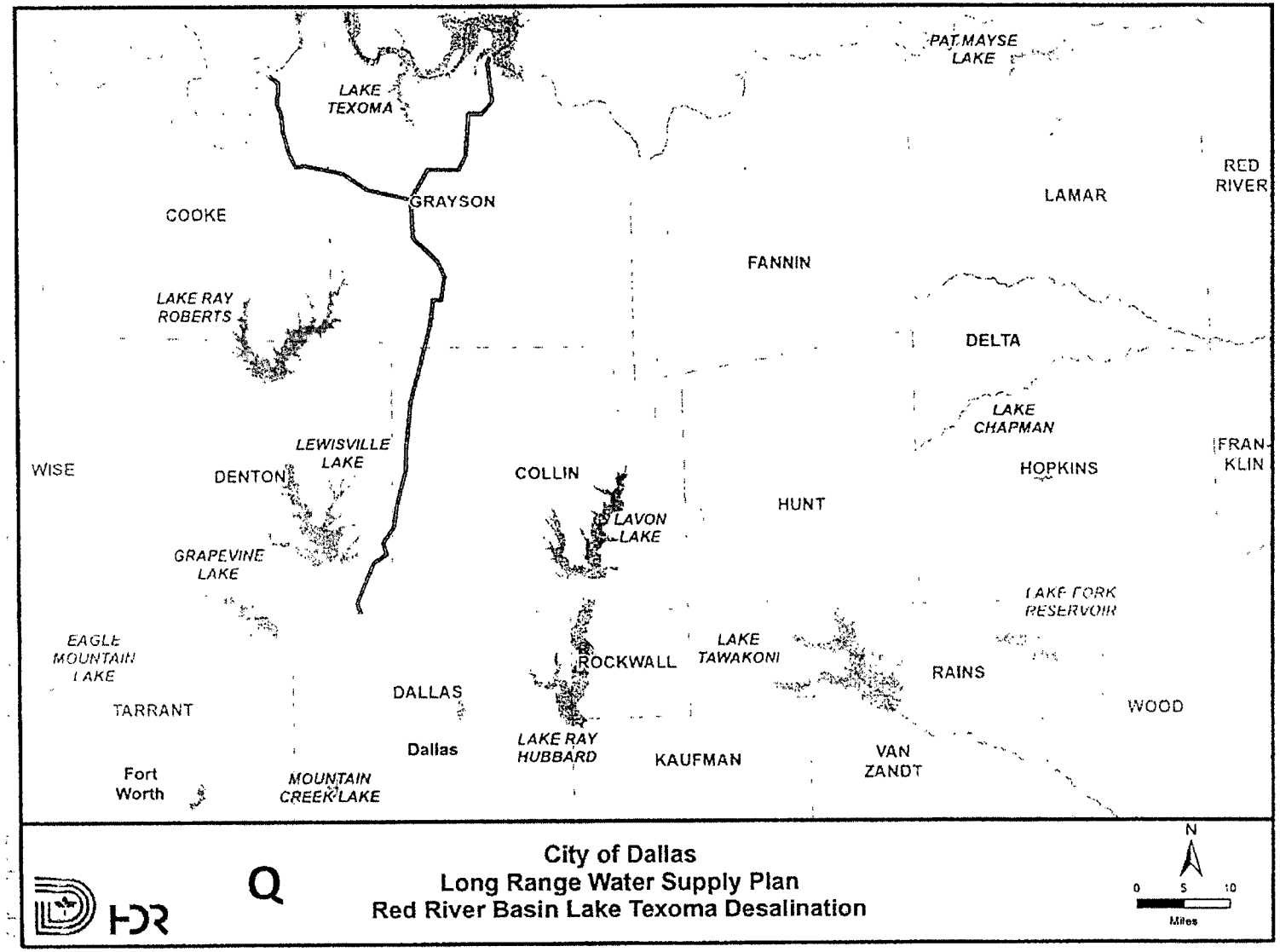
Sulphur Basin – Patman (232.5) / MN (296.5)



Sabine Basin – Toledo Bend Reservoir to Dallas Westside (Regional Strategy)



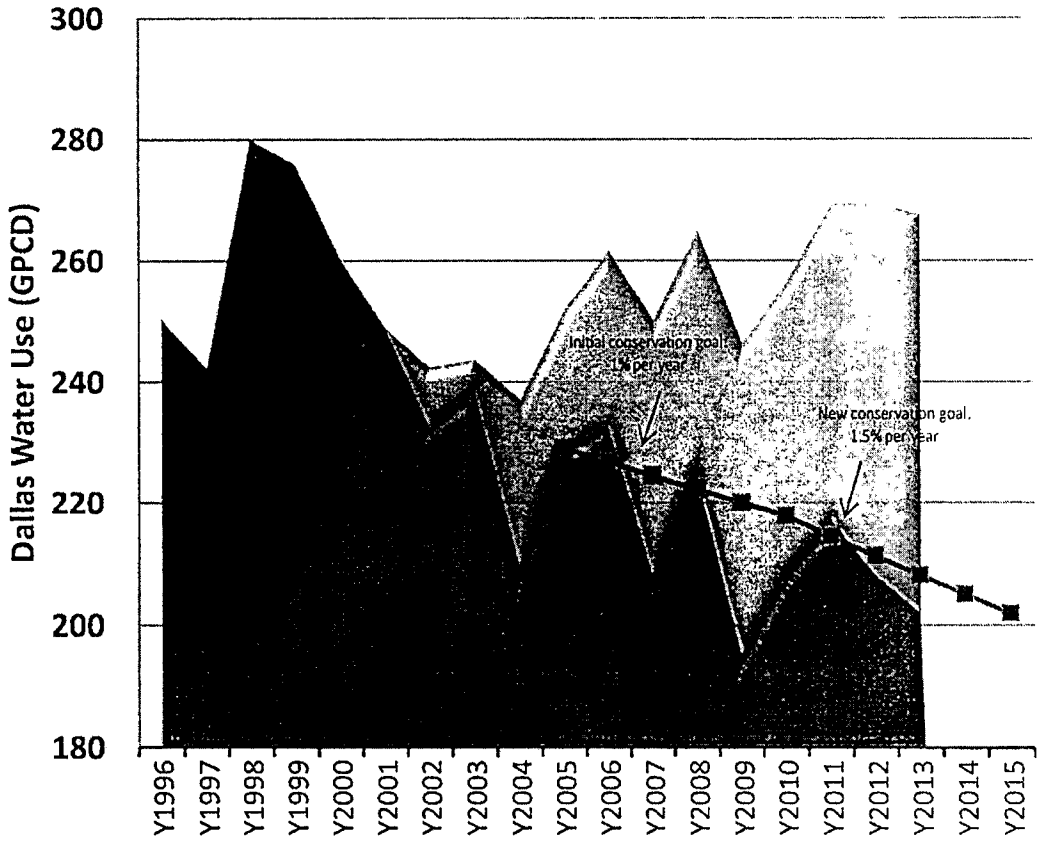
Red River Basin – Lake Texoma Desalination



Water Conservation Accomplishments

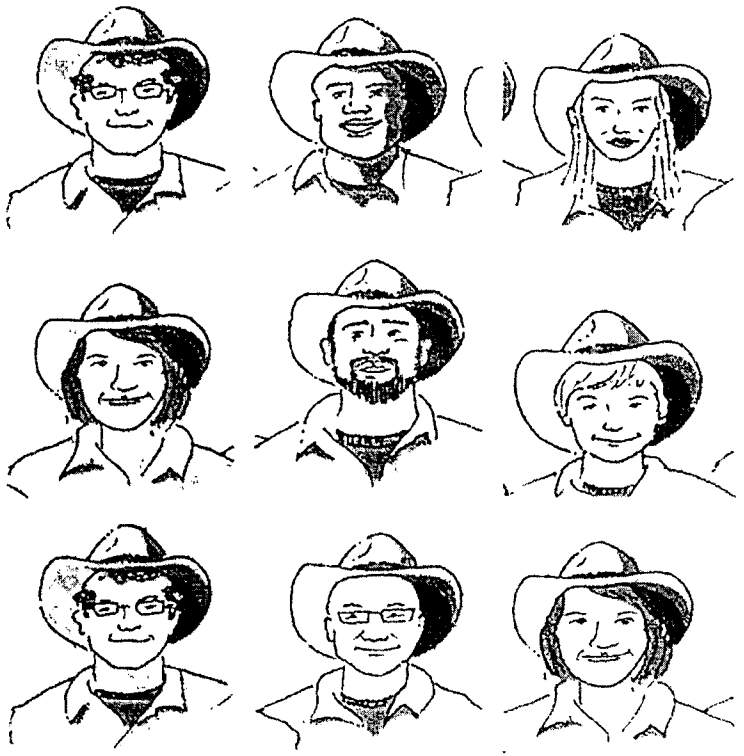
Conservation measures adopted by the Council in Oct 2001 have been positive

- Dallas saved an estimated 220 billion gallons of water since 2001 (extends supply by almost 1.5 years)
- GPCD has been reduced approximately 20% from FY01 to FY13
- As a result, Dallas has been able to mitigate the impact of drought weather conditions on water supply
- Since implementation of the Twice Weekly Watering Program in April 2012, water consumption is 5 to 6% lower despite similar temperatures and less than half the rainfall
- Non-watering days are 25 to 40 MGD or an average of 8% less than watering days



2014 Regional Campaign Theme

- **Team Lawn Whisperer**
  - Campaign will
    - Reinforce "maximum twice weekly or less" watering message
    - Demonstrate how to maintain a beautiful water-wise landscape and save money
    - Encourage everyone to join the team and do their part to save water



Getting on some teams requires lots of running and sit-ups and stuff like that. Getting on Team Lawn Whisperer is easy. Just water twice a week or less. And sign up for special teams by mulching your bushes and flower beds. Ready to join? Save water. Nothing can replace it.

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SaveNorthTexasWater.com
WATER JUST TWICE A WEEK OR LESS.

FY 2014-15 Water Conservation Strategic Plan

- Current 2010 Water Conservation Five-Year Strategic Plan due for update in 2015
- Tasks to evaluate proposed update
  - Analyze long-term demand reductions, water use and water loss data
  - Evaluate impacts of maximum twice weekly watering on water use demands
  - Assess savings, costs, staff time according to identified measures
  - Evaluate implementation strategies
  - Receive and incorporate stakeholder input
  - Modify prior recommendations and identify new measures
  - Develop draft Plan update

Infrastructure Recommendations

Project	Drivers	Recommended Implementation	Capital Cost	Risk if Delayed
Elm Fork WTP Pre-sedimentation Basin	G / R	2017	$24 M	• May require WTP improvements • No recognition of reduction in coagulant and liquid O2 use
East Side WTP WQI	G / R / M	2018	$93 M	• More frequent filter backwashing • Potential for less than optimum biological filter performance
72-inch Treated Water Pipeline (Bachman WTP to Elm Fork WTP)	G / R / M	2018	$30 M	• Hydraulic challenges for distribution • Increasing reliability concerns • Potential for construction outages
Elm Fork WTP Residuals Handling Improvements	G / R / M	2018	$90 M	• Site space not available at Elm Fork WTP for planned improvements
Elm Fork WTP Pump Station 1	R / M	2018	$35 M	• Increasing risk of failure • Reduces reliability
Iron Bridge Pump Station Rehab	R / M	2018	$47 M	• Electrical and equipment failures
East Side WTP Residuals Basins and Sludge PS Improvements	M	2022	$75 M	• Continued WQ challenges in the distribution system • Limited reliable production
Elm Fork WTP WQI6	G / R / M	2024	$240 M	• Increased potential for water supply shortages
144-in Pipeline (from Tawakoni Interconnect to Balancing Reservoir and on to East Side WTP)	G / M	2030	$420 M	• East Side production remains limited at 440 mgd
Wintergreen Pump Station and Southwest Pipelines	G	2030	$310 M	• Increasing risk of embankment failure and dam safety issues • Limits storage capacity available if system is out of service
Tawakoni Balancing Reservoir Expansion	G / M	2030	$66 M	• Increasing risk of failure(s) • Power supply is not adequate for peak requirements at 540 mgd
East Side WTP Electrical Distribution System Improvements and Substation 3	G / M	2030	$18 M	• Would require a variance to operate filters at a higher loading • Potential for decreased filter performance and need for increased backwash frequency
East Side WTP Stage V Filters	G / R	2030	$40 M	• Not enough treatment capacity to meet demands
Western WTP Expansion	G	2045	$405 M	• Increased potential for water supply shortages

G – Growth R – Regulation M – Maintenance and Reliability

Potential
Water Management Strategies

Strategy ID	Water Management Strategy	Projected Supply		Cost		Ranking		
		Acre-feet	MGD	per acre foot	per 1,000 gal	Basic	Advanced	Combined
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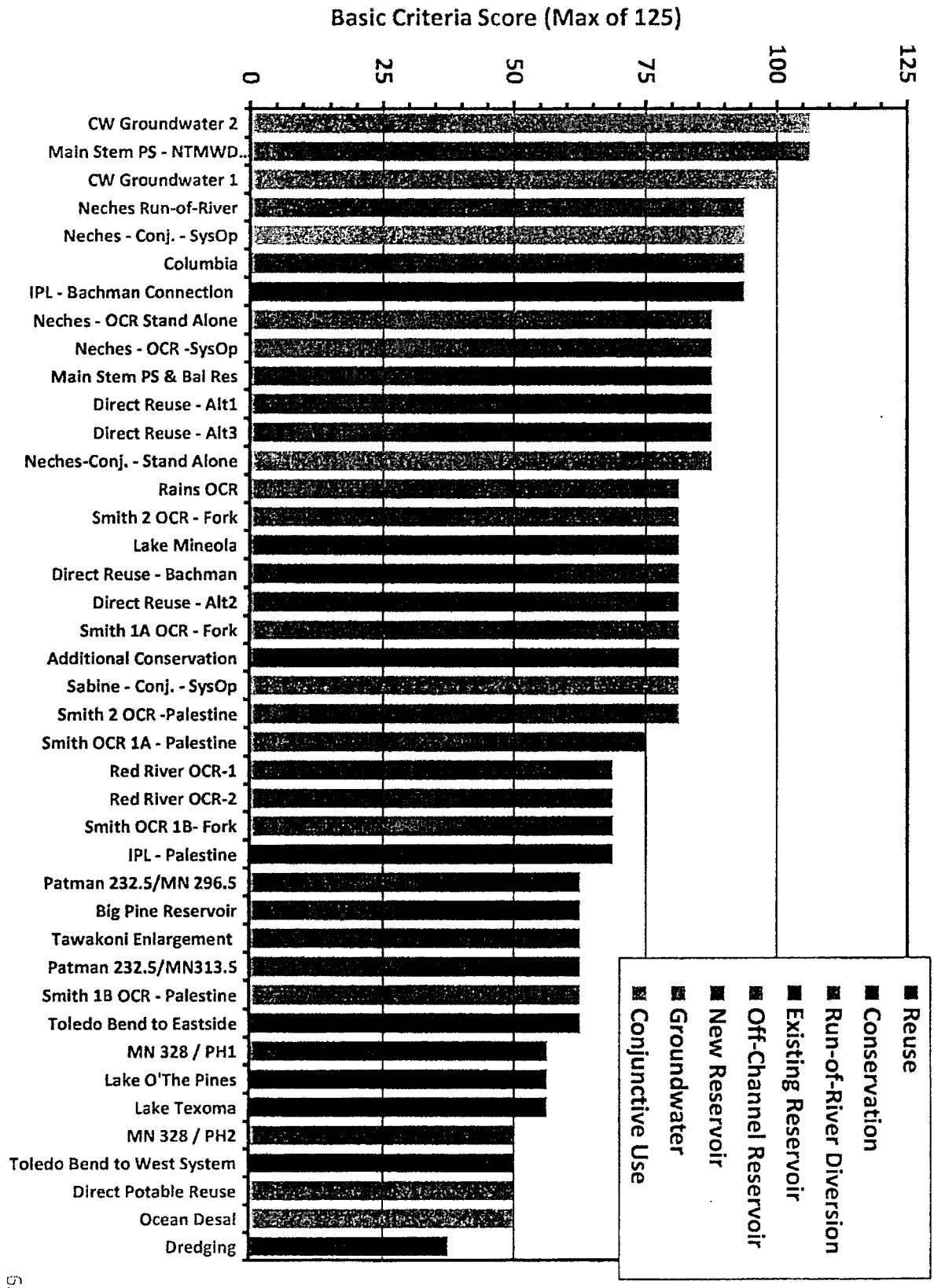
D-2	Direct Reuse - Alternate 3	1,864	2	$660	$2.03	12	5	7
E-1	Carrizo Wilcox Groundwater - 2	30,000	27	$496	$1.52	1	16	8
F-1	Neches Run-of-River	45,075	40	$636	$1.95	4	12	9
D-3	Direct Reuse - Bachman	844	1	$837	$2.57	17	6	10
E-2	Carrizo Wilcox Groundwater - 1	20,000	18	$570	$1.75	3	17	11
D-4	Direct Reuse - Alternate 2	1,881	2	$927	$2.85	18	7	12
F-2	Neches - Conjunctive Use -System Operations (Groundwater and Off Channel Reservoir)	87,575	78	$544	$1.67	5	20	13
F-3	Neches - Off Chanel Reservoir -System Operations	79,025	71	$554	$1.70	9	19	14
F-4	Neches - Off Channel Reservoir Stand Alone	64,400	58	$585	$1.80	8	18	15
G	Lake Columbia	56,000	50	$560	$1.72	6	28	16
F-5	Neches-Conjunctive Use - Stand Alone (Run-of-River and Groundwater)	71,000	63	$619	$1.90	13	22	17
H	Sabine - Conjunctive Use -System Operations (Groundwater and Off Channel Reservoir)	104,200	93	$734	$2.25	21	13	18
I	Rains Off Channel Reservoir	29,200	26	$846	$2.60	14	21	19

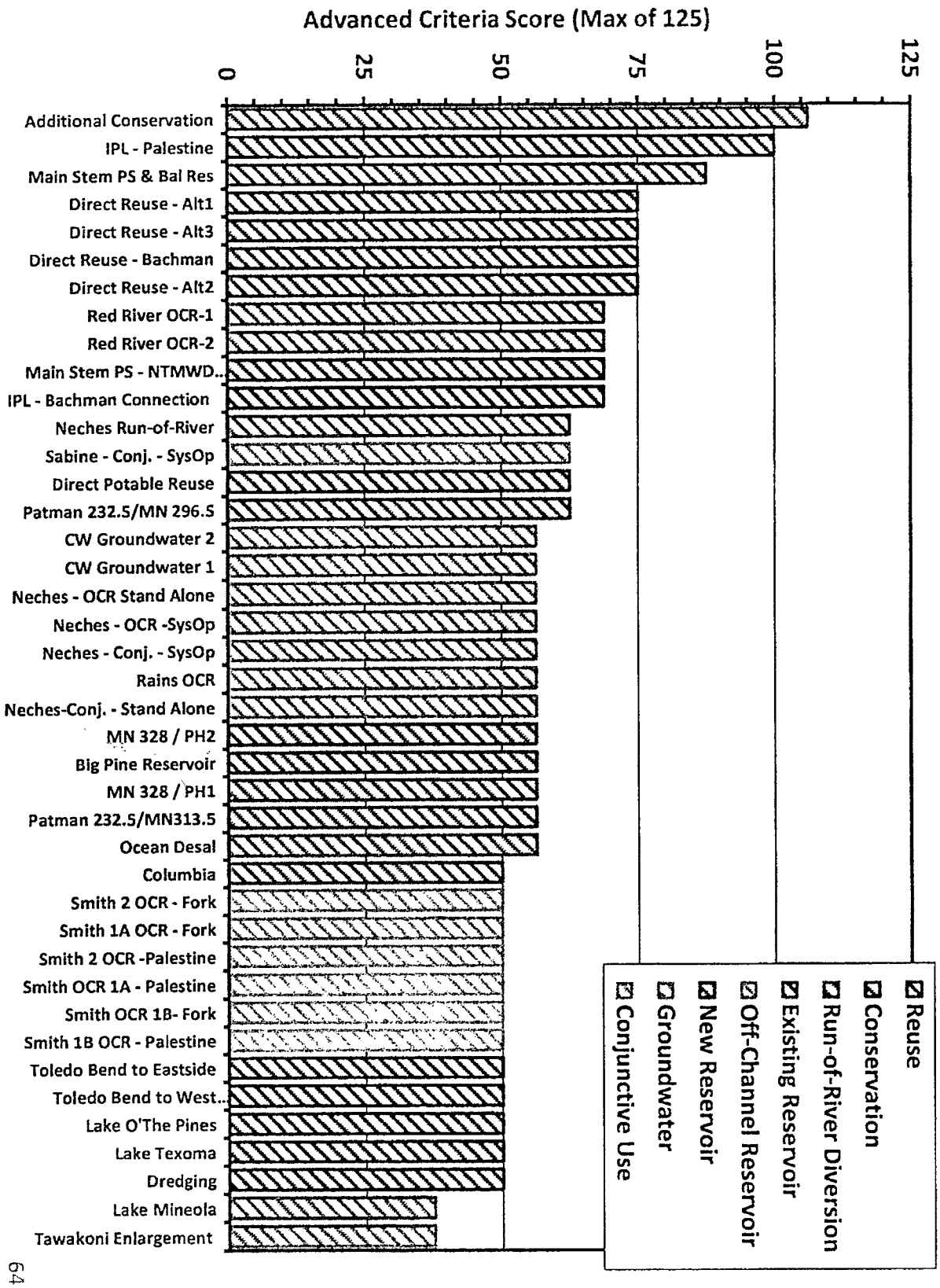
Potential Water Management Strategies (Continued)

Strategy ID	Water Management Strategy	Projected Supply		Cost		Ranking		
		Acre-feet	MGD	per acre foot	per 1,000 gal	Basic	Advanced	Combined
J-1	Red River Off Channel Reservoir - 2	310,000	277	$551	$1.69	25	9	20
J-2	Red River Off Channel Reservoir -1	114,000	102	$734	$2.25	24	8	21
K-1	Smith 2 Off Channel Reservoir - to Lake Fork	55,700	50	$688	$2.11	15	29	22
K-2	Smith 1A Off Channel Reservoir - to Lake Fork	46,300	41	$853	$2.62	19	30	23
K-3	Smith 2 OCR -Palestine	55,700	50	$747	$2.29	22	31	24
L-1	Wright Patman (232.5) / Marvin Nichols (296.5)	114,000	102	$742	$2.28	28	15	25
K-4	Smith Off Channel Reservoir 1A - to Lake Palestine	46,300	41	$941	$2.89	23	32	26
M-1	Lake Mineola	72,000	64	$729	$2.24	16	40	27
L-2	Wright Patman (232.5) / Marvin Nichols (313.5)	114,000	102	$687	$2.11	31	26	28
N	Big Pine Reservoir	35,840	32	$1,201	$3.69	29	24	29
K-5	Smith Off Channel Reservoir 1B - to Lake Fork	67,200	60	$913	$2.80	26	33	30
L-3	Marvin Nichols (328) / Parkhouse 1	114,000	102	$644	$1.98	34	25	31
D-5	Direct Potable Reuse	44,800	40	$622	$1.91	39	14	32
K-6	Smith 1B Off Channel Reservoir - to Lake Palestine	67,200	60	$1,004	$3.08	32	34	33
O-1	Toledo Bend to Eastside WTP	200,000	179	$863	$2.65	33	35	34
L-4	Marvin Nichols (328) / Parkhouse 2	114,000	102	$635	$1.95	37	23	35
P	Lake O'The Pines	89,600	80	$1,225	$3.76	35	37	36
Q	Lake Texoma Desalination	146,000	130	$1,186	$3.64	36	38	37
R	Ocean Desal	200,000	179	$2,157	$6.62	40	27	38
O-2	Toledo Bend to West System	200,000	179	$1,023	$3.14	38	36	39
M-2	Tawakoni Enlargement	57,600	51	$1,357	$4.16	30	41	40
S	Dredging	2,900	3	$12,182	$37.39	41	39	41

Ranking of Strategies by Basic Criteria Score



Ranking of Strategies by Advanced Criteria Score



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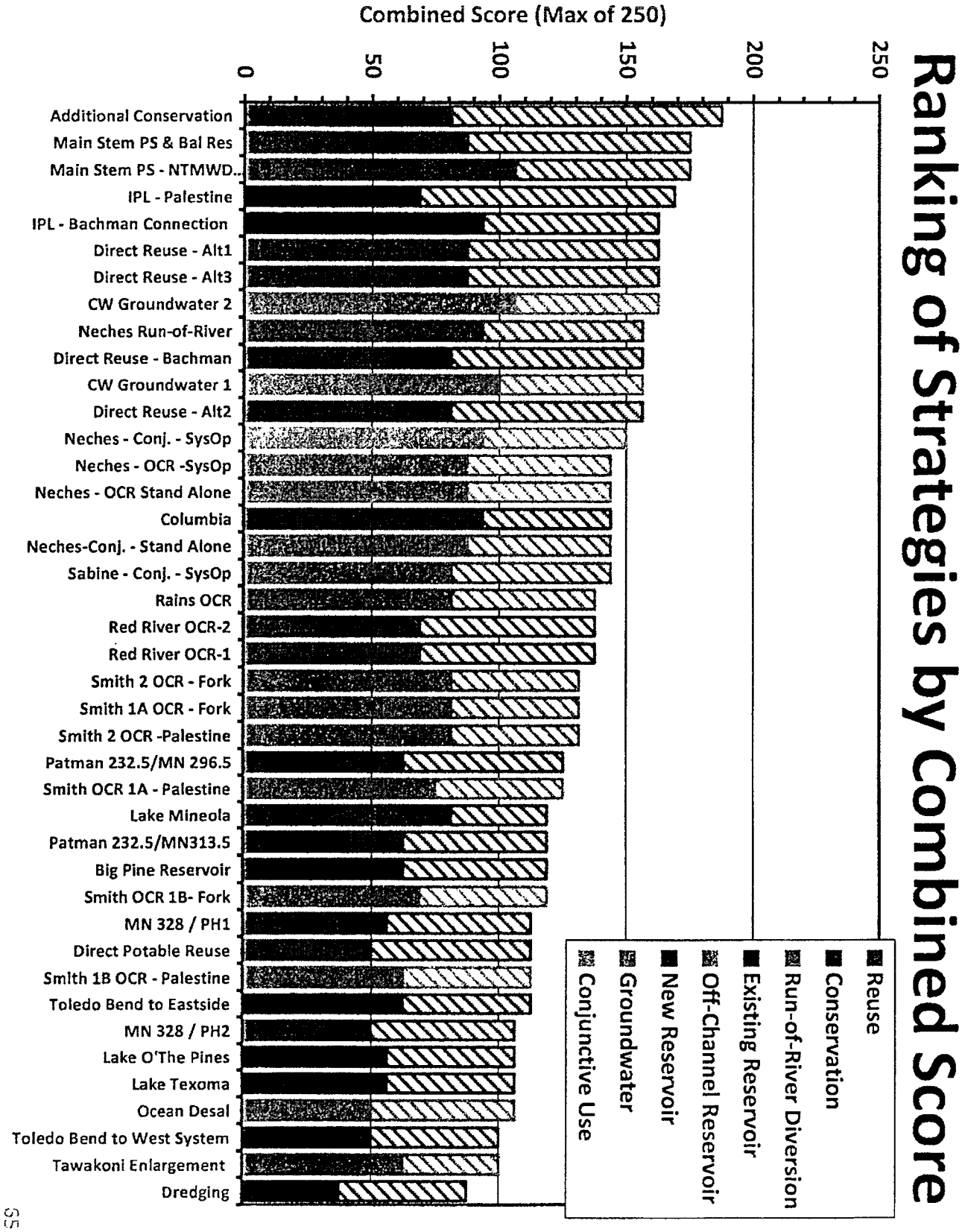
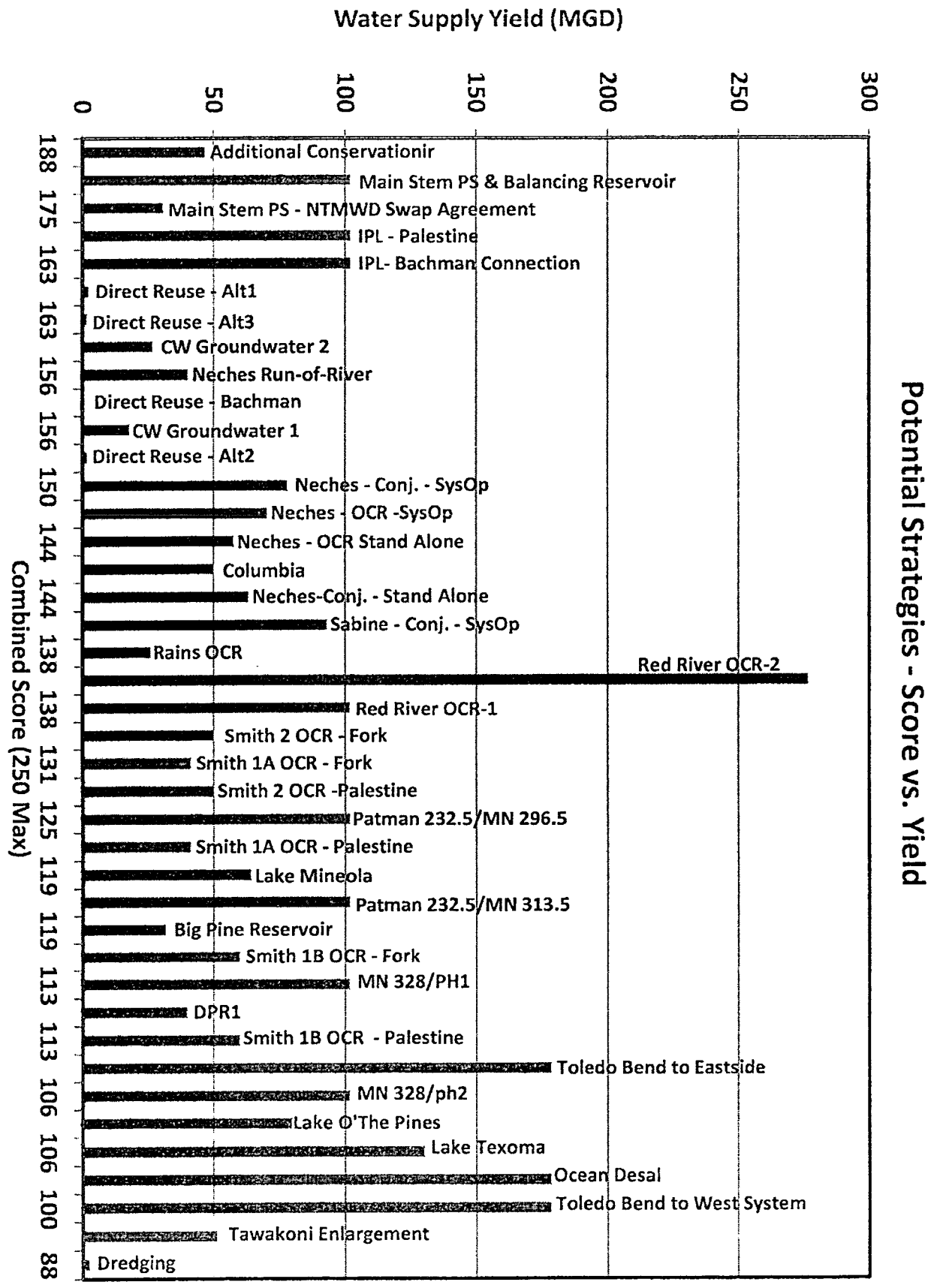
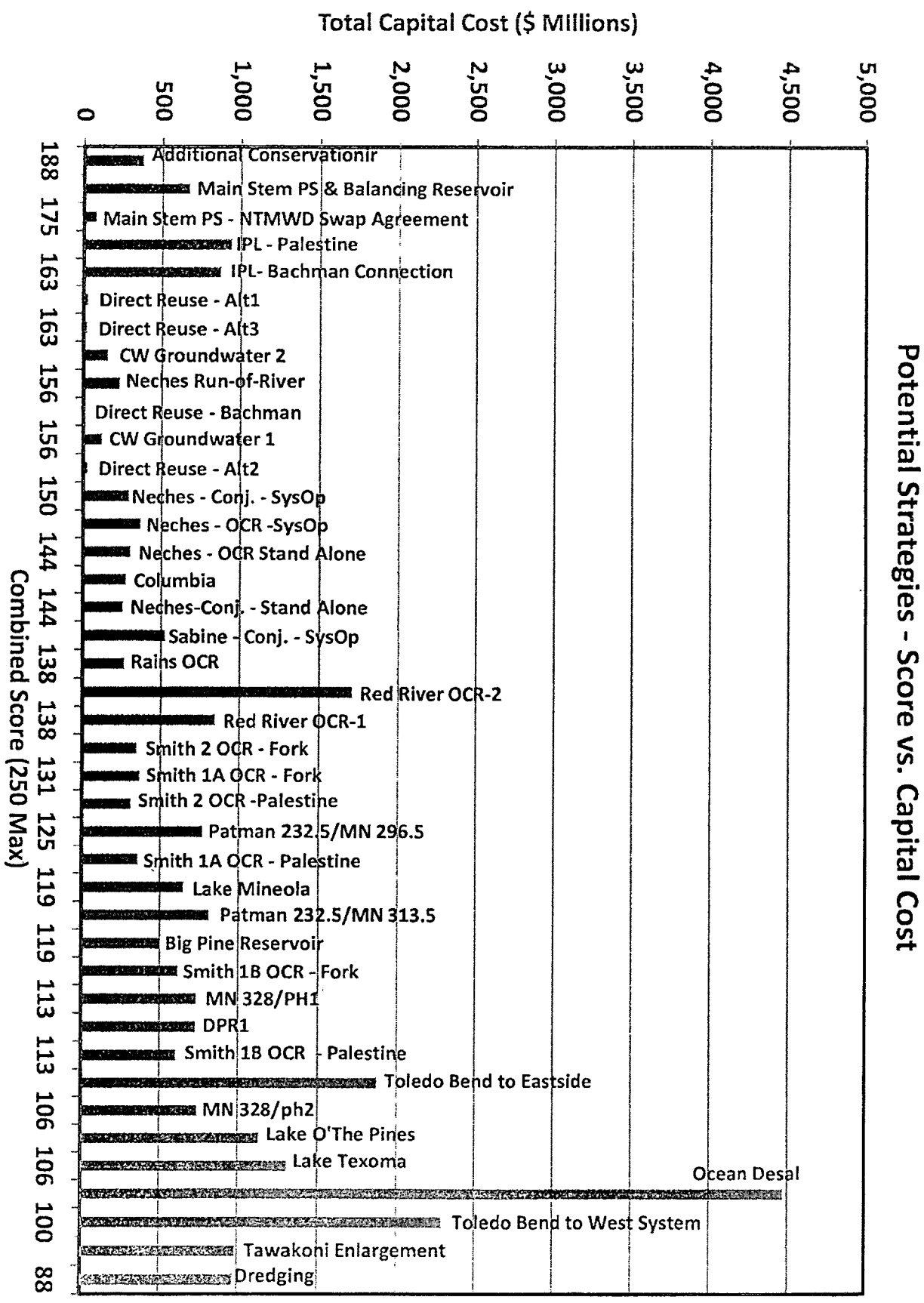

Ranking of Strategies by Combined Score
Combined Score (Max of 250)
0
50
100
150
200
250
Additional Conservation
Main Stem PS & Bal Res
Main Stem PS - NTMWD..
IPL - Palestine
IPL - Bachman Connection
Direct Reuse - Alt1
Direct Reuse - Alt3
CW Groundwater 2
Neches Run-of-River
Direct Reuse - Bachman
CW Groundwater 1
Direct Reuse - Alt2
Neches - Conj. - SysOp
Neches - OCR -SysOp
Neches - OCR Stand Alone
Columbia
Neches-Conj. - Stand Alone
Sabine - Conj. - SysOp
Rains OCR
Red River OCR-2
Red River OCR-1
Smith 2 OCR - Fork
Smith 1A OCR - Fork
Smith 2 OCR -Palestine
Patman 232.5/MN 296.5
Smith OCR 1A - Palestine
Lake Mineola
Patman 232.5/MN313.5
Big Pine Reservoir
Smith OCR 1B- Fork
MN 328 / PH1
Direct Potable Reuse
Smith 1B OCR - Palestine
Toledo Bend to Eastside
MN 328 / PH2
Lake O'The Pines
Lake Texoma
Ocean Desal
Toledo Bend to West System
Tawakoni Enlargement
Dredging
Reuse
Conservation
Run-of-River Diversion
Existing Reservoir
Off-Channel Reservoir
New Reservoir
Groundwater
Conjunctive Use


Water Supply Yield (MGD)
0
50
100
150
200
250
300
Combined Score (250 Max)
188
175
163
163
156
156
150
144
144
138
138
131
125
119
119
113
113
106
106
100
88
Additional Conservationir
Main Stem PS & Balancing Reservoir
Main Stem PS - NTMWD Swap Agreement
IPL - Palestine
IPL- Bachman Connection
Direct Reuse - Alt1
Direct Reuse - Alt3
CW Groundwater 2
Neches Run-of-River
Direct Reuse - Bachman
CW Groundwater 1
Direct Reuse - Alt2
Neches - Conj. - SysOp
Neches - OCR -SysOp
Neches - OCR Stand Alone
Columbia
Neches-Conj. - Stand Alone
Sabine - Conj. - SysOp
Rains OCR
Red River OCR-2
Red River OCR-1
Smith 2 OCR - Fork
Smith 1A OCR - Fork
Smith 2 OCR -Palestine
Patman 232.5/MN 296.5
Smith 1A OCR - Palestine
Lake Mineola
Patman 232.5/MN 313.5
Big Pine Reservoir
Smith 1B OCR - Fork
MN 328/PH1
DPR1
Smith 1B OCR - Palestine
Toledo Bend to Eastside
MN 328/ph2
Lake O'The Pines
Lake Texoma
Ocean Desal
Toledo Bend to West System
Tawakoni Enlargement
Dredging
Potential Strategies - Score vs. Yield


Potential Strategies - Score vs. Capital Cost
Total Capital Cost ($ Millions)
0
500
1,000
1,500
2,000
2,500
3,000
3,500
4,000
4,500
5,000
Combined Score (250 Max)
188 175 163 163 156 156 150 144 144 138 138 131 125 119 119 113 113 106 106 106 100 88
Additional Conservationir
Main Stem PS & Balancing Reservoir
Main Stem PS - NTMWD Swap Agreement
IPL - Palestine
IPL- Bachman Connection
Direct Reuse - Alt1
Direct Reuse - Alt3
CW Groundwater 2
Neches Run-of-River
Direct Reuse - Bachman
CW Groundwater 1
Direct Reuse - Alt2
Neches - Conj. - SysOp
Neches - OCR -SysOp
Neches - OCR Stand Alone
Columbia
Neches-Conj. - Stand Alone
Sabine - Conj. - SysOp
Rains OCR
Red River OCR-2
Red River OCR-1
Smith 2 OCR - Fork
Smith 1A OCR - Fork
Smith 2 OCR -Palestine
Patman 232.5/MN 296.5
Smith 1A OCR - Palestine
Lake Mineola
Patman 232.5/MN 313.5
Big Pine Reservoir
Smith 1B OCR - Fork
MN 328/PH1
DPR1
Smith 1B OCR - Palestine
Toledo Bend to Eastside
MN 328/ph2
Lake O'The Pines
Lake Texoma
Ocean Desal
Toledo Bend to West System
Tawakoni Enlargement
Dredging

Identified Strategies

- DWU Reuse (Additional)
- Main Stem Trinity River PS (Lake Ray Hubbard Reuse - 2013)
- Tawakoni Increase by 1ft
- Tawakoni Increase by 3ft
- Tawakoni Increase by 5.5ft
- Tawakoni Balancing Reservoir Expansion
- Marvin Nichols II Reservoir
- Marvin Nichols Reservoir
- Lake Livingston to DWU
- Lake O' the Pines to DWU
- Lake O' the Pines to Sandy Creek
- Lake O' the Pines to Sandy Creek to Lake Fork, with flow from Lake Tawakoni
- Main Stem Diversion Pump Station
- Main Stem Diversion Pipeline
- Oklahoma water to Lake Ray Roberts (Option B)
- Oklahoma water to DWU
- Pipeline - Tawakoni to Lake Ray Hubbard
- Wetland Transfer Pump Station
- Wetland Transfer Pipeline
- 100mgd WTP Expansion (Any plant)
- 100mgd WTP Expansion (Any plant)
- Direct Reuse - Alt2
- Neches - OCR Stand Alone
- Neches - OCR -SysOp
- 100mgd WTP Expansion (Any plant)
- Lake Texoma to DWU (blend)
- Lake Tawakoni Enlargement - Option 2
- Caddo Lake Enlargement
- Mesa Groundwater
- Tawakoni Balancing Reservoir to South EastWTP
- Kiamichi River to Elm Fork WTP
- Kiamichi River to Eastside WTP
- Milwood Lake
- Barkman Creek
- Rabbit
- Stateline
- Cochino Bayou
- Big Elkhart
- Boyd
- Supplemental wells
- Lake Ralph Hall – Indirect Reuse
- Wright Patman - System Operation
- Wright-Patman Lake - Texarkana Purchase
- Sam Rayburn Reservoir / B.A. Steinhagen Lake
- Joe Pool: Modified use of Water Rights
- Neches - Conj. - SysOp
- Rains OCR
- Columbia
- Dredging
- Wright Patman Exp.
- George Parkhouse II
- Joe Pool: Interruptible Water Rights
- Joe Pool: Reallocate Flood Pool Storage
- Joe Pool: Terminal Storage
- Waxahachie & Bardwell: Terminal Storage
- 100mgd WTP Expansion (Any plant)
- 100mgd WTP Expansion (Any plant)
- Bonham C of E (NTMWD)
- Lower Bois d'Arc Creek
- Ralph Hall
- Cedar Creek
- Tehuacana
- Brazos County Groundwater
- Roberts County Groundwater
- Constructed Wetland - NTMWD
- Cooper Reservoir to Irving
- Cooper Reservoir to Lake Lavon
- Dallas Supply to Ellis County Customers - Rockett SUD, Red Oak and Waxahachie
- Grand Prairie to Johnson Co SUD
- IPL Turnout to Lake Bardwell
- IPL Turnout to Lake Waxahachie
- Lake Joe Pool to Mansfield WTP
- Red River OCR-1
- Sabine - Conj. – SysOp
- Neches-Conj. - Stand Alone
- Ralph Hall
- Ocean Desal

Identified Strategies

(Continued)

- Lake Waxahachie to Howard Rd WTP and Sokoll WTP (TRWD use of Terminal Storage)
- Mansfield WTP expansion and connection to Joe Pool Lake
- Mansfield to Grand Prairie
- Mansfield to Johnson Co SUD
- Marvin Nichols I Reservoir to Lavon Lake
- Midlothian to Grand Prairie
- Conveyance Project - TRWD Reservoir System (TRA)
- Direct Reuse (UTRWD)
- Fannin County Project (NTMWD)
- Grayson County Project (GTUA)
- Indirect Reuse (TRA)
- Lake George Parkhouse North to NTMWD
- Lake George Parkhouse South to NTMWD
- Lake Joe Pool - TRWD use of Terminal Storage
- Lake Livingston to NTMWD
- Lake Livingston to TRWD
- Lake O' the Pines to NTMWD
- Lake Palestine to South East WTP
- George Parkhouse I
- Midlothian to Johnson Co SUD
- New Bonham Reservoir to Lake Lavon
- Oklahoma water to Lake Lavon (Option A)
- Oklahoma water to Chapman Lake
- Oklahoma water to Eagle Mountain Lake
- Oklahoma Water to Irving
- Pipeline - Main Stem Diversion PS to Wetland
- Roberts County project to DWU
- Arlington WTP Expansion(beyond 205mgd existing)
- Mansfield WTP 15mgd Expansion (beyond 45mgd existing)
- Midlothian Tayman WTP Expansion (beyond 13mgd existing)
- New Regional WTP on Joe Pool
- Sokoll WTP (Waxahachie & Rockett SUD; beyond 10mgd existing)
- NTMWD interim purchase from DWU
- Temporary connection for Wilmer to Hutchins for Dallas water
- Bethesda WSC connection to Arlington
- Brazos Groundwater Project to NTMWD
- Tawakoni Enlargement
- Direct Reuse - Alt3
- Neches Run-of-River
- Lake Ralph Hall - Indirect Reuse (UTRWD)
- Lake Ralph Hall (UTRWD)
- Lake Texoma - Not Authorized (blend)
- Lake Texoma – Authorized (Blend to NTMWD)
- Lake Texoma - Authorized (Desalinate for NTMWD)
- Lake Texoma - Not Authorized (Desalinate)
- Lake Texoma (Interim purchase from GTUA for NTMWD)
- Lake Texoma (Option A)
- Lake Texoma (Option B)
- Main Stem PS (Add'l East Fork for NTMWD)
- Mansfield supply to Johnson County SUD
- Marvin Nichols Reservoir (NTMWD)
- Marvin Nichols Reservoir (TRWD)
- Cedar Creek/Richland-Chambers System to TRWD
- Collin-Grayson Municipal Alliance system (GTUA)
- Conveyance Project - Indirect Reuse (TRA)
- CW Groundwater 2
- Direct Reuse - Bachman
- CW Groundwater 1
- Red River OCR-2
- Smith 2 - Fork
- Smith 1A - Fork

Identified Strategies

(Continued)

- Marvin Nichols Reservoir (UTRWD)
- Midlothian to Johnson County SUD
- Oklahoma Water to NTMWD, TRWD, UTRWD
- Purchase from Water Provider - TRWD Reservoir System (TRA)
- Purchase from Water Provider - Chapman/Cooper Reservoirs (UTRWD)
- Purchase from Water Provider - Indirect Reuse (TRA)
- Purchase from Water Provider - Indirect Reuse (UTRWD)
- Purchase from Water Provider - Joe Pool Reservoir (TRA)
- Purchase from Water Provider - Lake Texoma (GTUA)
- Purchase from Water Provider - Marvin Nichols Reservoir (TRA)
- Purchase from Water Provider - Oklahoma (TRA)
- Purchase from Water Provider - Ray Robert/Lewisville/Grapevine (UTRWD)
- Purchase from Water Provider - Toledo Bend (TRA)
- Purchase from Water Provider (1 to TRWD)
- Main Stem PS & Balance Res - Phase 2
- TRA Ellis County Reuse
- TRA Freestone County Reuse
- TRA Kaufman County Reuse
- TRA Las Colinas Reuse
- TRA to Houston Contract
- TRA to SJRA Contract
- TRA to WUG Contract
- TRWD Third Pipeline and Reuse
- TRWD Third Pipeline and Reuse (TRA)
- Wholesale Customer Conservation (GTUA)
- Wholesale Customer Conservation (NTMWD)
- Wholesale Customer Conservation (TRA)
- Wholesale Customer Conservation (TRWD)
- Wholesale Customer Conservation (UTRWD)
- Wright Patman - Reallocation of Flood Pool NTMWD
- Wright Patman - Reallocation of Flood Pool TRWD
- Wright Patman - Texarkana Sale to NTMWD
- MN328/Talco350
- Tawakoni Recycle - 1B
- Smith 2 –Palestine
- Patman 242.5/MN296.5
- Patman 232.5/Talco370
- Toledo Bend to Eastside
- Toledo Bend to SW WTP
- Wright Patman - Texarkana Sale to TRWD
- Van Zandt1A
- Van Zandt1B
- Henderson - Parallel to IPL
- Henderson - transmit via IPL
- Cedar Crest Direct Recycle
- Conservation (Retail) - from 2005 LRWSP Study
- Purchase from Water Provider (2 to TRWD)
- Roberts County Groundwater Project to NTMWD
- South East WTP at 100mgd
- South East WTP expansion to 200mgd
- Tehuacana Reservoir to Fort Worth
- TRA 10-Mile Creek Reuse Project
- TRA Denton Creek WWTP Reuse
- Conveyance Project - Toledo Bend (TRA)
- Conservation (Wholesale)
- DWU Reuse - Table Q-65 Region C 2011
- Indirect Recycle to Lewisville Lake
- Lake Mineola
- Patman 232.5/MN313.5
- Marvin Nichols
- LOTP Pipeline
- Lake Texoma