



Region C Water Planning Group

August 20, 2018





ACTION ITEMS





A. Nominating Committee for Slate of Officers 2019

Kevin Ward, Region C Chair





B. Announcement of Vacancy for Jody Puckett's position Representing Municipalities and John Carman's position Representing Municipalities

Kevin Ward, Region C Chair



Municipal Position #1

- Vacated by Jody Puckett, Dallas Water Utilities
- Jody has nominated Richard Wagner, P.E. as replacement
- Other nominations from group and public

- Call for Vote

Municipal Position #2

- Vacated by John Carman, formerly with Fort Worth
- Fort Worth ACM has nominated Chris Harder, P.E. as replacement
- Other nominations from group and public
- Call for Vote



C. Election of Members to Fill Expiring Terms

Kevin Ward, Region C Chair



Election to Fill Expiring Terms

Currently Held by	Interest	Seeking Re-Election
Bill Ceverha	Public	Yes
Grace Darling	Environmental	Yes
Tim Fisher	Municipalities	Yes
Russell Laughlin	Industry	Yes
G.K. Maenius	Counties	Yes
Gary Spicer	Electric Generating Utilities	TBD
Connie Standridge	Water Utilities	Yes
Jack Stevens	Water Districts	Yes
Kevin Ward	River Authorities	Yes



D. Consider Approval of Technical Memorandum

Tom Gooch
Freese & Nichols, Inc.



Population Projection and Water Demand

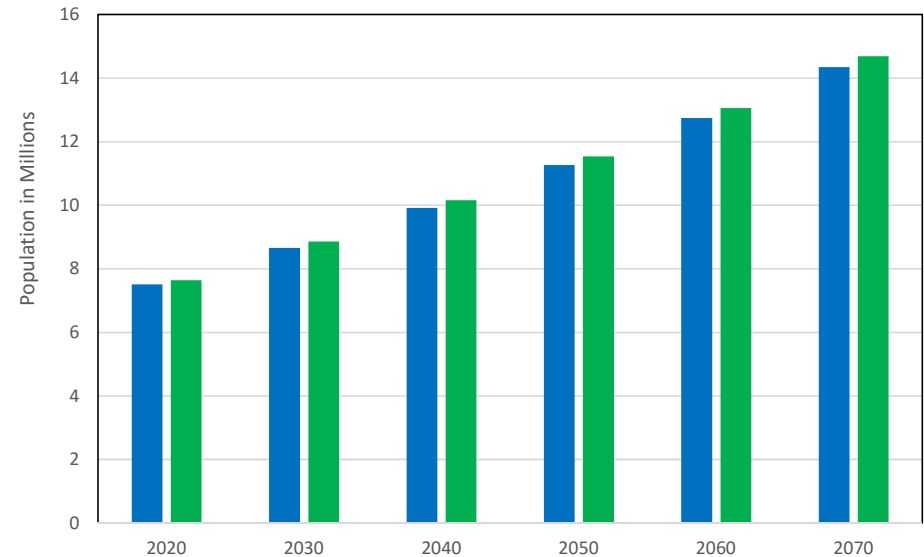
- Originally, total regional population could not change from TWDB draft projections
- Modified by TWDB to allow up to a 2.44% increase
 - Based on 2015 U.S. Census population estimate and interpolated data from 2017 State Water Plan
 - This increase still did not accommodate all requested changes by WUGs
- Draft revisions approved by RCWPG December 2017
- TWDB approved projections April 2018

	2020	2030	2040	2050	2060	2070
TWDB Draft Projections	7,504,200	8,648,725	9,908,572	11,260,257	12,742,283	14,347,912
Revised Projections	7,637,764	8,857,957	10,150,077	11,533,432	13,051,603	14,684,790
Percent Difference	1.78%	2.42%	2.44%	2.43%	2.43%	2.35%



Adopted Population Projections

County	Adopted Population Projections for Region C by County					
	2020	2030	2040	2050	2060	2070
COLLIN	1,050,506	1,239,303	1,497,921	1,807,279	2,093,720	2,373,092
COOKE	40,903	44,035	46,984	52,427	62,905	95,351
DALLAS	2,587,960	2,871,662	3,180,529	3,429,783	3,627,334	3,770,858
DENTON	891,063	1,115,119	1,329,551	1,584,015	1,866,215	2,113,136
ELLIS	191,638	241,778	280,745	360,584	479,939	670,845
FANNIN	38,330	43,084	52,891	69,328	101,706	137,732
FREESTONE	20,437	21,077	22,947	31,142	44,475	73,287
GRAYSON	135,311	149,527	159,610	178,907	242,865	337,120
HENDERSON	67,579	72,592	78,504	85,901	110,493	141,881
JACK	9,751	10,409	10,817	11,033	11,190	11,291
KAUFMAN	146,389	195,107	242,354	306,833	423,277	566,840
NAVARRO	52,505	59,556	65,958	74,213	83,221	99,056
PARKER	201,491	260,194	276,979	360,125	472,097	593,000
ROCKWALL	119,410	160,315	213,619	246,938	291,850	325,052
TARRANT	2,004,609	2,279,113	2,580,325	2,799,127	2,978,034	3,167,377
WISE	79,882	95,086	110,343	135,797	162,282	208,872
REGION C TOTAL	7,637,764	8,857,957	10,150,077	11,533,432	13,051,603	14,684,790

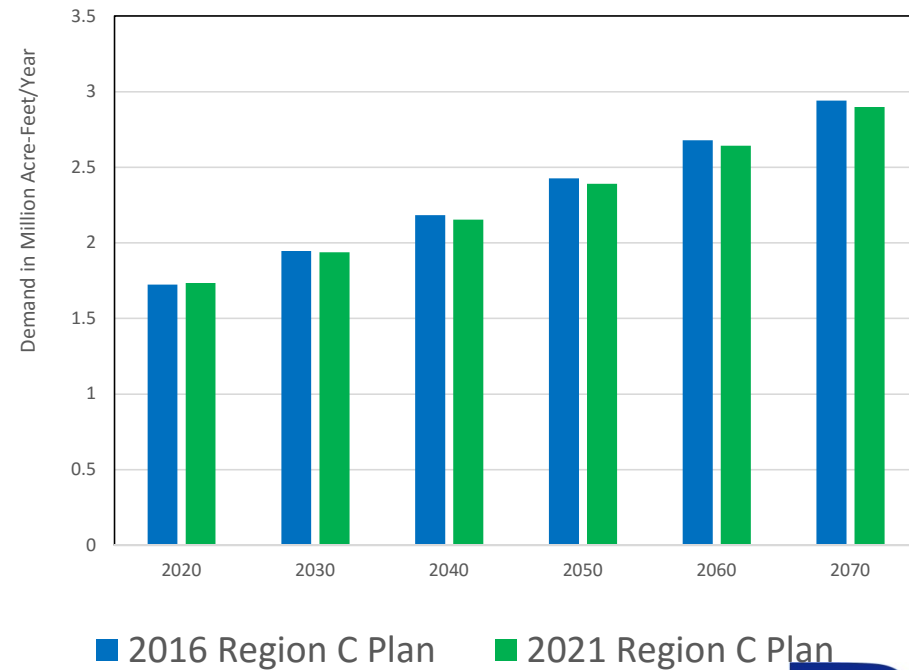


■ 2016 Region C Plan ■ 2021 Region C Plan



Adopted Demand Projections

County	Adopted Demand Projections for Region C by County					
	2020	2030	2040	2050	2060	2070
COLLIN	242,505	273,778	316,053	373,126	424,158	468,710
COOKE	10,226	9,797	9,515	10,180	11,610	15,837
DALLAS	563,223	606,936	657,666	701,225	737,409	761,162
DENTON	183,755	222,033	260,976	305,248	353,543	393,966
ELLIS	45,341	54,859	60,713	73,196	90,964	119,473
FANNIN	18,708	19,045	20,125	22,330	26,203	30,487
FREESTONE	44,552	44,322	44,683	45,961	47,574	50,948
GRAYSON	39,192	41,009	41,881	44,867	55,068	72,258
HENDERSON	14,326	15,058	15,595	16,488	20,224	24,847
JACK	9,279	7,744	7,640	7,681	7,733	7,839
KAUFMAN	32,432	39,103	45,389	53,921	68,234	85,866
NAVARRO	13,027	14,103	14,987	16,436	18,002	20,374
PARKER	38,281	48,850	51,306	62,835	78,038	94,520
ROCKWALL	23,030	30,792	40,797	45,577	52,291	57,606
TARRANT	427,050	476,807	528,442	569,340	602,456	637,649
WISE	28,966	32,369	36,157	42,212	47,969	56,998
REGION C TOTAL	1,733,893	1,936,605	2,151,925	2,390,623	2,641,476	2,898,540



Modified GPCDs

- TWDB provided historical per capita use data June 2017
- Requested changes to base per capita for 21 WUGs
 - Updated 2011 gpcd was 20+ gpcd greater than in 2016 Plan
 - Multiple recent years show substantially higher gpcd than 2011 (indicating 2011 was not representative of a dry year)
 - DFW International Airport added to County-Other

Demand Projections by Use Category

Category	Region C Adopted Demand Projections					
	2020	2030	2040	2050	2060	2070
Municipal	1,514,655	1,717,286	1,937,279	2,173,153	2,421,186	2,673,829
Manufacturing	48,382	52,930	52,930	52,930	52,930	52,930
Steam Electric	62,932	66,723	66,723	66,723	66,723	66,723
Irrigation	43,910	43,910	43,910	43,910	43,910	43,910
Mining	46,467	38,209	33,536	36,360	39,180	43,601
Livestock	17,547	17,547	17,547	17,547	17,547	17,547
Region Total	1,733,893	1,936,605	2,151,925	2,390,623	2,641,476	2,898,540

Overall Water Supply Source Availability

- Includes surface water imports
- Limited to firm yield (or safe yield as appropriate)

Summary	2020	2030	2040	2050	2060	2070
Reservoirs /Systems in Region C	1,282,799	1,262,068	1,241,339	1,220,610	1,199,880	1,179,150
Run-of River Irrigation	8,735	8,735	8,735	8,735	8,735	8,735
Livestock and Other Local Supply	21,244	21,244	21,244	21,244	21,244	21,244
Surface & Groundwater Imports*	577,219	527,130	516,744	506,403	496,731	486,643
Groundwater	161,948	161,800	162,386	162,100	162,548	162,150
Reuse	342,485	362,654	385,242	413,778	442,356	464,739
REGION C TOTAL	2,394,430	2,343,631	2,335,690	2,332,870	2,331,494	2,322,661

**Pending finalization of other region's allocations*

Surface Water Availability

- Comprised of reservoirs, reservoir systems and local supplies
- Based on results of TCEQ-approved WAMs (Trinity, Red and Sulphur)
 - Requested hydrologic variances (Approved June 2018)
- Safe yields versus firm yields

Groundwater Availability

- Two major aquifers (Carrizo-Wilcox and Trinity)
- Four minor aquifers (Woodbine, Nacatoch, Cross Timbers and Queen City)
- Locally undifferentiated formations (“Other Aquifers”)
- MAG estimates provided by TWDB (directly from GMA8, GMA11, and GMA12 reports)
- No GAM models were used
- GMA 8 and 11 deemed Nacatoch “non-relevant”

Reuse Availability

- Permitted reuse projects were updated for the 2021 Plan

County	Permitted Reuse (Acre-Feet/Year)					
	2020	2030	2040	2050	2060	2070
Collin	50,321	62,324	75,998	91,065	105,401	118,085
Cooke	4	4	4	4	4	4
Dallas	9,732	9,732	9,732	9,732	9,732	9,732
Denton	51,518	52,865	60,882	73,815	88,226	97,907
Ellis	4,398	4,801	5,533	6,048	6,048	6,048
Fannin	0	0	0	0	0	0
Freestone	0	0	0	0	0	0
Grayson	0	0	0	0	0	0
Henderson	2,904	2,904	2,904	2,904	2,904	2,904
Jack	27	26	26	25	25	24
Kaufman	105,853	111,829	111,933	111,954	111,954	111,954
Navarro	100,465	100,465	100,465	100,465	100,465	100,465
Parker	2,370	2,389	2,411	2,427	2,446	2,466
Rockwall	672	672	672	672	672	672
Tarrant	7,961	8,382	8,421	8,406	8,403	8,402
Wise	6,261	6,261	6,261	6,261	6,076	6,076
Total	342,485	362,654	385,242	413,778	442,356	464,739



Existing Water Supplies

- Limited by water rights, contracts and existing facilities (or facilities that will be completed by August 2020)

Summary	2020	2030	2040	2050	2060	2070
Reservoirs/Systems in Region C	897,728	836,927	833,162	809,922	786,438	767,246
Run-of River Irrigation	8,735	8,735	8,735	8,735	8,735	8,735
Livestock and Other Local Supply	20,992	20,992	20,992	20,992	20,992	20,992
Surface & Groundwater Imports*	349,171	309,729	307,698	307,678	308,299	305,673
Groundwater	109,839	109,003	108,315	108,759	109,228	109,409
Reuse	304,930	327,951	351,198	378,911	410,561	429,590
REGION C TOTAL	1,691,395	1,613,337	1,630,100	1,634,997	1,644,253	1,641,645

**Pending finalization of other region's allocations*

Source Data Comparison to 2016 RWP

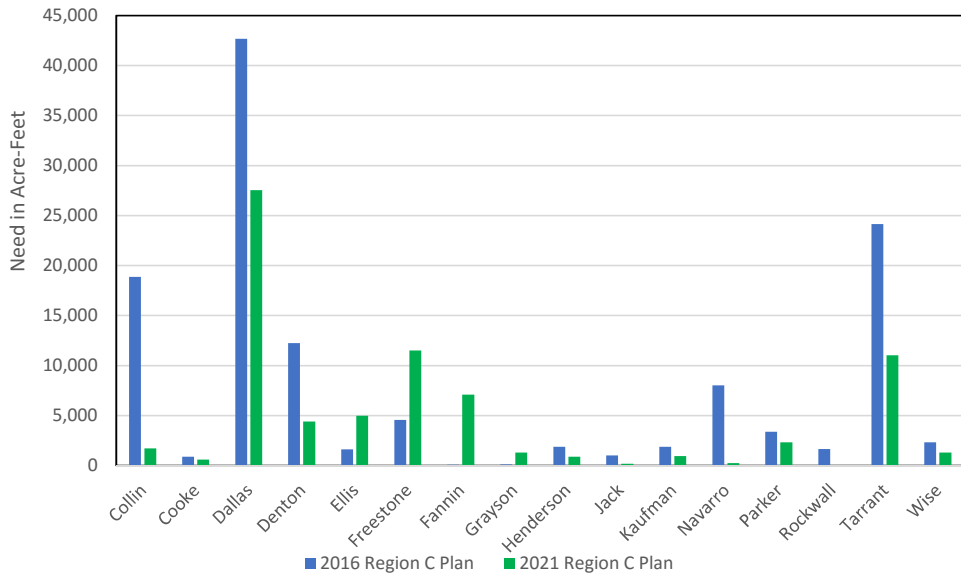
County	2020 - Percent Difference			2070 - Percent Difference		
	Groundwater	Reuse	Surface Water	Groundwater	Reuse	Surface Water
Collin	118.3%	1.2%	-12.1%	117.7%	59.2%	-12.1%
Cooke	62.0%	-55.6%	-16.6%	61.5%	-55.6%	-16.6%
Dallas	-16.3%	136.1%	0.0%	-16.6%	24.8%	0.0%
Denton	43.9%	22.4%	174.2%	43.5%	-5.3%	174.2%
Ellis	-18.9%	0.2%	0.0%	-19.1%	0.2%	0.0%
Freestone	70.5%	0.0%	0.0%	89.5%	0.0%	0.0%
Fannin	43.8%	0.0%	-0.3%	43.5%	0.0%	-0.3%
Grayson	-14.9%	0.0%	0.0%	-15.2%	0.0%	0.0%
Henderson	28.1%	0.0%	0.0%	24.9%	0.0%	0.0%
Jack	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Kaufman	-59.9%	2.2%	0.0%	-59.9%	2.2%	0.0%
Navarro	-52.7%	0.0%	0.0%	-52.7%	0.0%	0.0%
Parker	-21.9%	2066.4%	-1.5%	-22.1%	3172.7%	-1.5%
Rockwall	-98.8%	0.0%	-22.0%	-98.8%	0.0%	-22.0%
Tarrant	-1.4%	-0.2%	0.0%	-1.7%	-0.2%	0.0%
Wise	5.1%	0.0%	0.0%	4.9%	0.0%	0.0%
Total	86.9%	2172.7%	121.7%	99.4%	3198.0%	121.7%

WUG Identified Water Needs

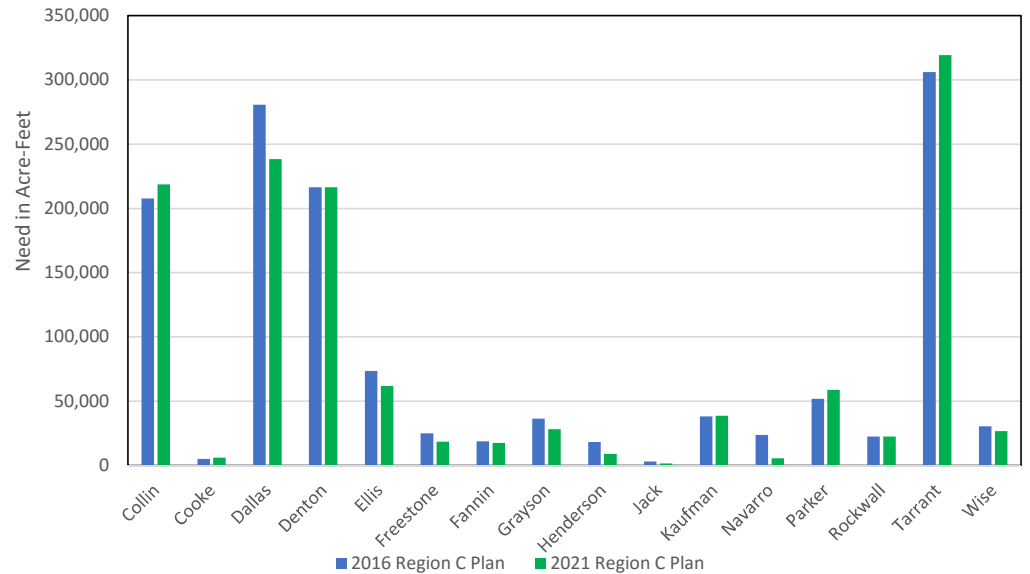
County	Total Need (Acre-Feet/Year)					
	2020	2030	2040	2050	2060	2070
Collin	1,701	52,095	91,754	136,529	179,095	218,643
Cooke	586	163	183	962	2,004	6,013
Dallas	27,510	85,709	137,089	180,380	212,698	238,260
Denton	4,378	40,341	75,548	119,494	169,623	216,301
Ellis	4,953	11,311	15,374	23,627	37,910	61,707
Fannin	11,489	11,898	12,641	13,941	15,017	18,314
Freestone	7,069	7,014	7,402	9,484	13,288	17,510
Grayson	1,287	2,426	3,134	4,792	11,410	28,200
Henderson	865	1,092	1,508	2,380	5,091	8,931
Jack	169	519	775	1,004	1,179	1,518
Kaufman	919	6,364	11,498	17,207	26,034	38,500
Navarro	217	262	307	1,666	3,234	5,565
Parker	2,320	13,553	17,418	26,412	41,914	58,732
Rockwall	21	5,391	10,198	13,884	18,403	22,425
Tarrant	11,025	116,083	167,509	224,776	272,011	319,153
Wise	1,287	4,309	7,618	13,394	19,154	26,749
Total	75,796	358,530	559,956	789,932	1,028,065	1,286,521

Comparison to 2016 Regional Water Plan

Total Need in 2020



Total Need in 2070



Potentially Feasible Water Management Strategies

- Methodology presented and approved by RCWPG December 2017
 - Conservation
 - Drought Management
 - Reuse
 - Existing Supplies
 - Development of New Supplies
 - Reallocation/Management of Existing Supplies
 - Conjunctive Use
 - Acquisition of Available Existing Supplies
 - Development of Regional Water Supply or Providing Regional Management of Water Supply Facilities
 - Voluntary Transfer of Water
 - Emergency Transfer of Water
 - System Optimization, Subordination, Leases, Enhancement of Yield, Improvement of Water Quality
 - Desalination

Simplified Planning Option

- Not pursued

Public Comment

- Public comments to be solicited for two weeks after the meeting (Closing September 3)



E. Consider (Retro-Active) Approval of Budget Adjustment

Amy Kaarlela
Freese & Nichols, Inc.



Budget Adjustment

- Task 2A – Non-Municipal Demand +\$5K
- Task 2B – Population & Municipal Demand +\$67K
- Task 4A – Identification of Water Needs +~\$11K
- Task 7 – Drought Response – ~\$83K

- Already approved by TWDB
- Asking RCWPG to approve Retro-actively



DISCUSSION ITEMS





A. Schedule

Amy Kaarlela
Freese and Nichols, Inc.



Schedule – 2021 Planning Cycle

- Key Dates
 - September 10, 2018 – Technical Memo on Needs, Potentially Feasible Strategies, Major Water Providers
 - March 2, 2020 – Initially Prepared Plan due
 - October 14, 2020 – Final Plan Due
- Next Meeting - TBD



B. Task 8 Subcommittee Report

Ellen McDonald
Alan Plummer Associates, Inc.





C. Next Steps

Amy Kaarlela
Freese and Nichols, Inc.



Next Steps

- Task 5A - Water Management Strategy Evaluations \$1.1M
- Various other tasks
- Preparation of IPP



Other Discussion

- A. Updates from the Chair
- B. Report from Regional Liaisons
- C. Report from Texas Water Development Board





Other Discussion

- D. Report from Texas Department of Agriculture
- E. Report from Texas Parks and Wildlife Department
- F. Other Reports





Other Discussion

- G. Confirm Date and Location of Next Meeting
- H. Public Comments





Adjournment





Thank you for attending.

Materials are available at
www.regioncwater.org

