



DRAFT TECHNICAL MEMORANDUM

Region C Water Planning Group 2016 Regional Water Planning Cycle Non-Municipal Demand Projections, Manufacturing

Project No.: 0312-046-01

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The *2016 Region C Water Plan* (hereafter referred to as the 2016 Plan) will incorporate projections for municipal demands, as well as non-municipal demands for irrigation, livestock, manufacturing, mining, and steam-electric power. The Texas Water Development Board (TWDB) provided the planning groups with draft non-municipal demand projections. The draft non-municipal demand projections will be reviewed by the individual planning groups, and recommendations will be provided to the TWDB. The TWDB will consider the recommended changes from the planning groups, and the final projections will ultimately be adopted by the planning groups and the TWDB and incorporated into the 2017 State Water Plan. The purpose of this technical memorandum is to document information related to historical manufacturing usage and provide information supporting recommended modifications to the draft manufacturing demands.

BACKGROUND

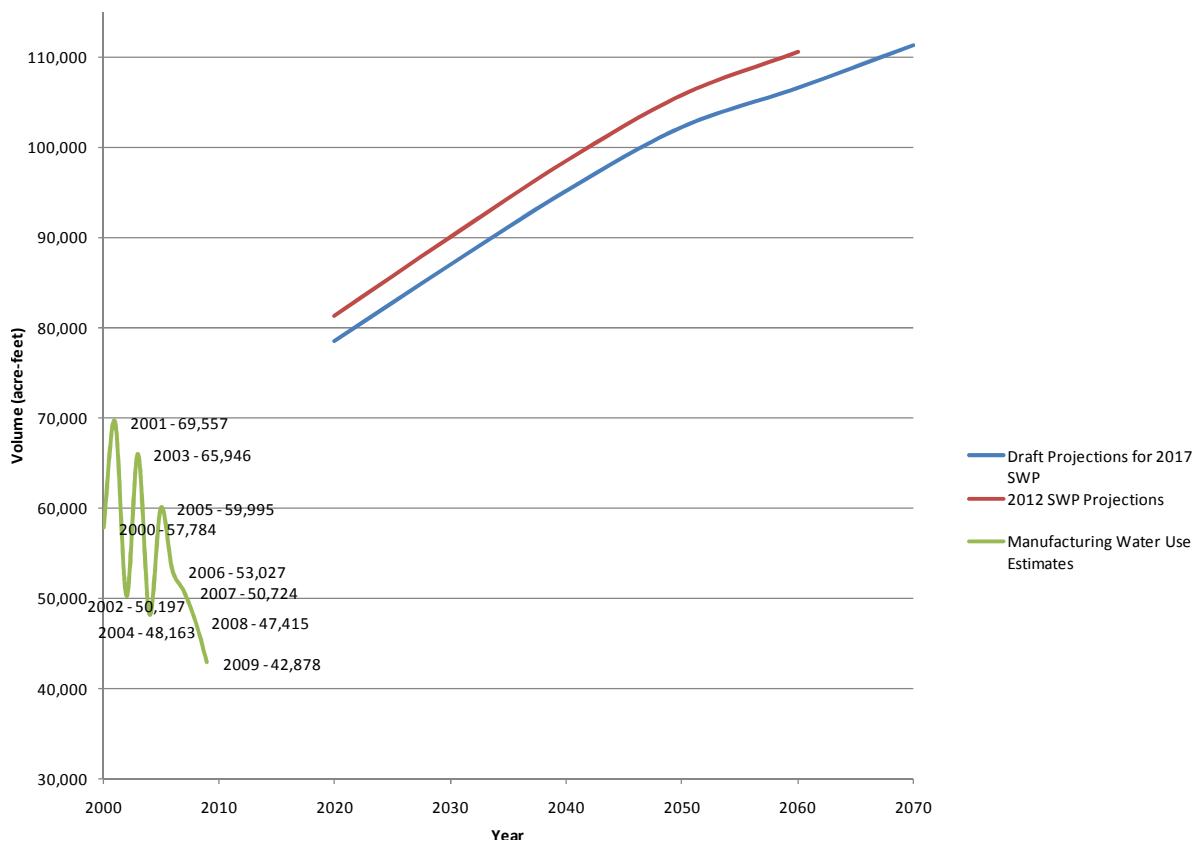
Manufacturing water use is defined by the TWDB as water used in the production process of manufactured products, including water used by employees for drinking and sanitation purposes. TWDB's draft non-municipal manufacturing demand projections for the 2017 State Water Plan utilize an adjusted average of the 2004-2008 data from the TWDB's Water Use Survey as a base to calculate the 2020 projection, and the rate of change for projections from the *2011 Region C Water Plan* is applied to the base for the years 2030-2070. The TWDB's Water Use Survey estimates are adjusted in counties where reported employment from the companies returning surveys was lower than the manufacturing employment data reported by the Bureau of Economic Analysis (the surveyed water use was adjusted to account for the apparent non-responses). The TWDB also reviews industrial publications and reports

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sales for new facilities prior to making adjustments. A significant number of manufacturing firms are supplied under the municipal water use category and are not reported in the Water Use Survey. While there is not any direct evidence that water use is unreported in the Water Use Survey, this method allows for adjustments for facilities whose volumes may not otherwise be accounted for.

The historical manufacturing water use estimates that are published by the TWDB summarize the findings of the annual Water Use Survey, but do not include adjustments for apparent non-responses described above. At the time this memo was written, historical data estimates are available through the year 2009. Since the year 2000, the region-wide manufacturing water use estimates have ranged from 42,878 to 69,557 acre-feet (see Figure 1 for usage information by year). However, as noted above, since the historical manufacturing water use estimates do not adjust for non-responses and new facilities, on a regional level these estimates are less than the base year used to develop the projections for 2020-2070.

Figure 1. Region C Manufacturing – Comparison of Water Use Estimates and Projections



Source: Texas Water Development Board
 Note: the water use estimates do not include adjustments for apparent non-responses/new facilities.

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One or more of the following criteria must be verified by the Planning Group and the Executive Administrator for consideration of revising the manufacturing water use projections:

- A manufacturing facility which has recently located in a county and may not have been included in the Board's database. Documentation and analysis must be provided that justify that the new manufacturing facility will increase the future manufacturing water use for the county above the manufacturing water use projections.
- A manufacturing facility has recently closed its operation in a county.
- Plans for the construction of a manufacturing facility in a county at some future date.

The Planning Group must provide the Executive Administrator the following data associated with the identified criteria for justifying any adjustments to the manufacturing water demand projections:

- The quantity of water used on an annual basis by a manufacturing facility that has recently located in a county and was not included in the Board's database.
- The North American Industrial Classification (NAIC) of the manufacturing facility that has recently located in a county. The NAIC is the numerical code for identifying the classification of establishments by type of activity in which they are engaged as defined by the U.S. Office of Management and Budget and is a successor of the Standard Industrial Classification (SIC).
- Documentation of plans for a manufacturing facility to locate in a county at some future date will include the following data:
 - Confirmation of land purchased for the facility or lease arrangements for the facility.
 - The quantity of water required by the planned facility on an annual basis.
 - The proposed construction schedule for the facility including the date the facility will become operational.
 - The NAIC for the planned facility.

PROPOSED MANUFACTURING WATER USE

A comparison of the draft projections for the 2017 SWP (provided by TWDB), the final 2012 SWP projections, and the proposed RCWPG revisions to the 2017 SWP projections is presented in Table 1 and Figure 2. The majority of the proposed RCWPG county-level projections are identical to the draft projections for the 2017 SWP. Deviations from the draft projections are explained below:

- Ellis County – The historical manufacturing water use (not including adjustments for non-responses/new facilities) between 2004 – 2008 (5,091 acre-feet/year) appears to be higher than

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the base year used in the calculations incorporating the adjusted use estimates. It is recommended that the base year used to calculate this projection be adjusted accordingly.

- Henderson County – The historical manufacturing water use (not including adjustments for non-responses/new facilities) between 2004 – 2008 (555 acre-feet/year) appears to be higher than the base year used in the calculations incorporating the adjusted use estimates. It is recommended that the base year used to calculate this projection be adjusted accordingly.
- Navarro County – The historical manufacturing water use (not including adjustments for non-responses/new facilities) between 2004 – 2008 (979 acre-feet/year) appears to be higher than the base year used in the calculations incorporating the adjusted use estimates. It is recommended that the base year used to calculate this projection be adjusted accordingly.
- Parker County – The historical manufacturing water use (not including adjustments for non-responses/new facilities) between 2004 – 2008 (547 acre-feet/year) appears to be higher than the base year used in the calculations incorporating the adjusted use estimates. It is recommended that the base year used to calculate this projection be adjusted accordingly.

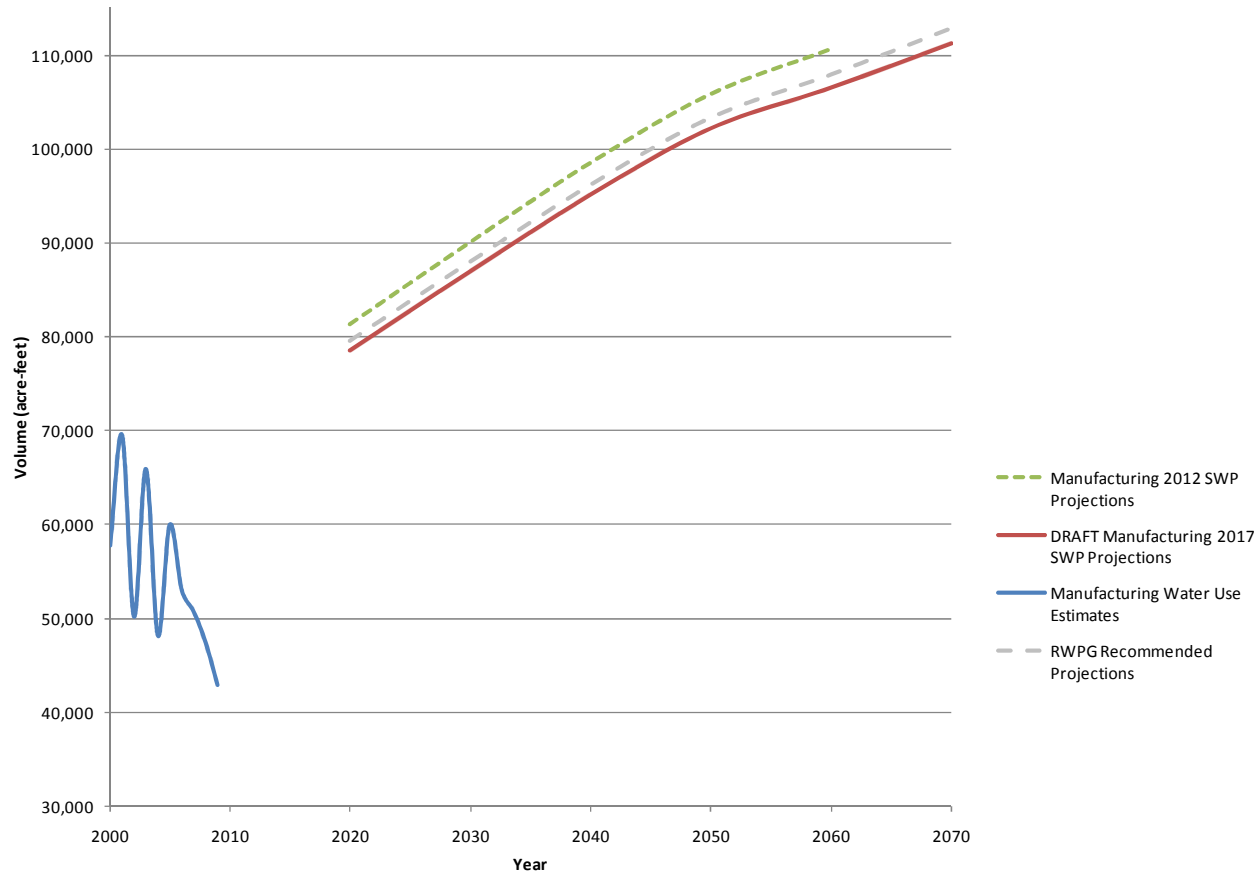
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Table 1. Comparison of Manufacturing Demand Projections

County Name	Draft Projections for 2017 SWP						2012 SWP Projections					RWPG Revisions					
	2020	2030	2040	2050	2060	2070	2020	2030	2040	2050	2060	2020	2030	2040	2050	2060	2070
Collin	3,456	3,888	4,319	4,706	5,109	5,547	4,137	4,654	5,170	5,633	6,115	3,456	3,888	4,319	4,706	5,109	5,547
Cooke	226	247	268	286	310	336	306	335	364	389	421	226	247	268	286	310	336
Dallas	37,791	41,148	44,214	46,703	46,983	47,265	37,791	41,148	44,214	46,703	46,983	37,791	41,148	44,214	46,703	46,983	47,265
Denton	1,446	1,643	1,843	2,020	2,194	2,383	1,239	1,408	1,579	1,731	1,880	1,446	1,643	1,843	2,020	2,194	2,383
Ellis	4,718	4,938	5,126	5,257	5,029	4,811	3,670	3,841	3,987	4,089	3,912	5,247	5,403	5,560	5,716	5,716	5,716
Fannin	88	97	106	114	124	135	82	90	98	105	114	88	97	106	114	124	135
Freestone	100	111	121	130	136	142	0	0	0	0	0	100	111	121	130	136	142
Grayson	4,905	5,329	5,729	6,065	6,584	7,147	7,781	8,453	9,088	9,621	10,444	4,905	5,329	5,729	6,065	6,584	7,147
Henderson	447	504	572	652	739	838	118	133	151	172	195	575	594	613	633	652	671
Jack	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Kaufman	813	869	928	993	1,061	1,134	813	869	928	993	1,061	813	869	928	993	1,061	1,134
Navarro	973	1,076	1,178	1,268	1,372	1,485	1,328	1,468	1,607	1,730	1,872	1,114	1,249	1,384	1,519	1,654	1,789
Parker	366	406	445	479	520	565	879	974	1,068	1,150	1,248	638	729	821	912	1,004	1,095
Rockwall	35	40	45	50	55	61	23	26	29	32	35	35	40	45	50	55	61
Tarrant	20,444	23,630	26,924	29,919	32,457	35,210	20,444	23,630	26,924	29,919	32,457	20,444	23,630	26,924	29,919	32,457	35,210
Wise	2,660	2,979	3,277	3,539	3,858	4,206	2,660	2,979	3,277	3,539	3,858	2,660	2,979	3,277	3,539	3,858	4,206
Total	78,470	86,907	95,097	102,183	106,533	111,267	81,273	90,010	98,486	105,808	110,597	79,540	87,959	96,154	103,307	107,899	112,840

Indicates no changes are proposed from the draft projections for the 2017 SWP.

Figure 2. Region C Manufacturing – Comparison of Water Use Estimates, 2012 State Water Plan Projection, Proposed Projections, and Revised Projections



Source: Texas Water Development Board

Note: the water use estimates do not include adjustments for apparent non-responses/new facilities.

Attachment A
Manufacturing Demand by County
Historical Usage and Projections Comparison

Figure 1. Collin County Manufacturing Comparison

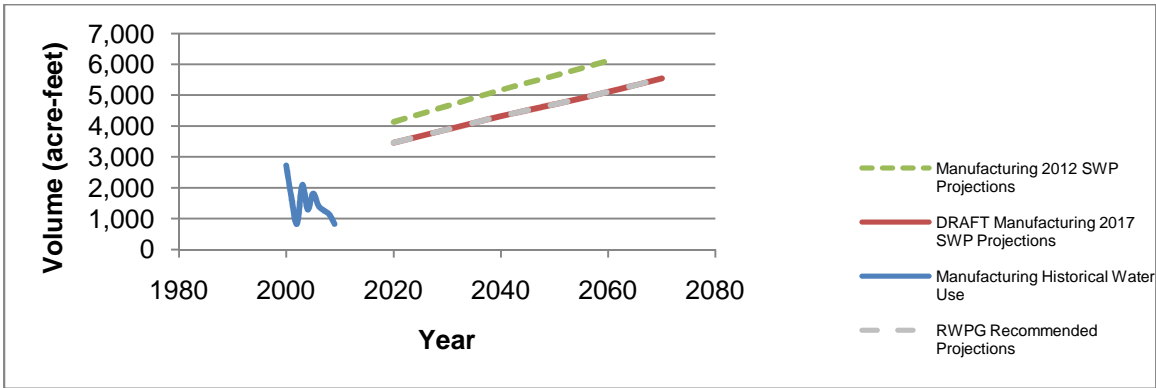


Figure 2. Cooke County Manufacturing Comparison

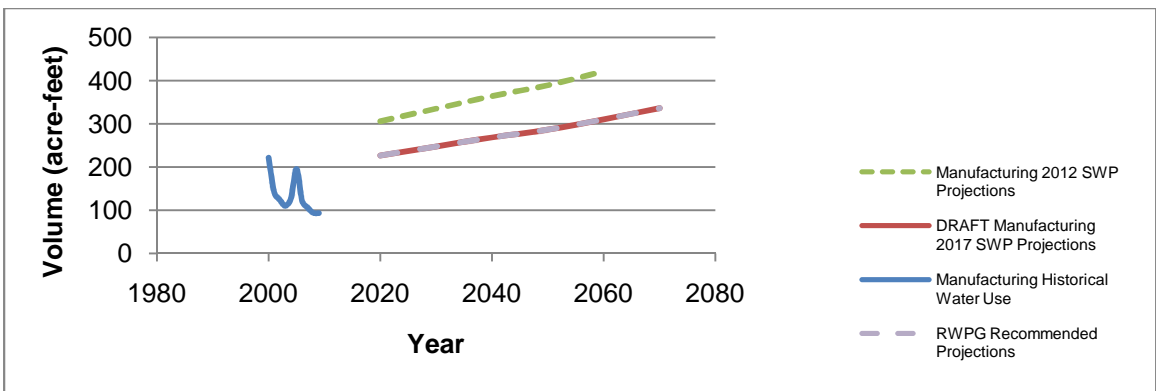


Figure 3. Dallas County Manufacturing Comparison

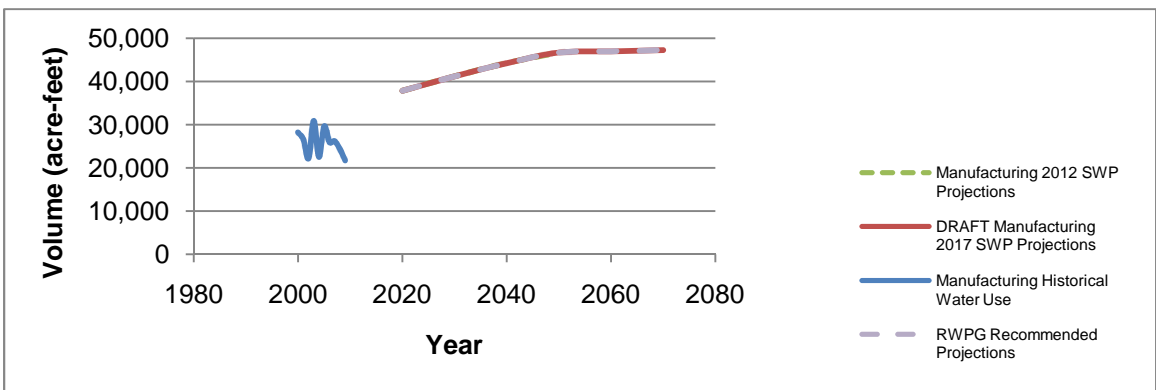


Figure 4. Denton County Manufacturing Comparison

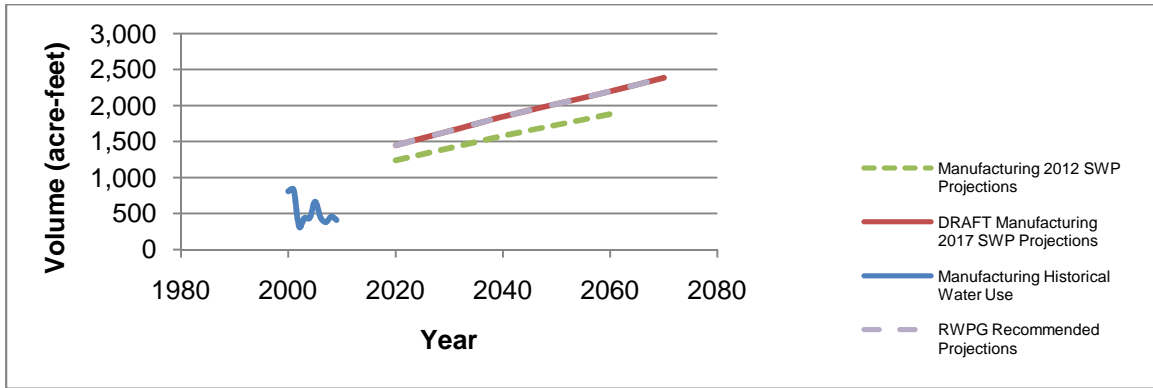


Figure 5. Ellis County Manufacturing Comparison

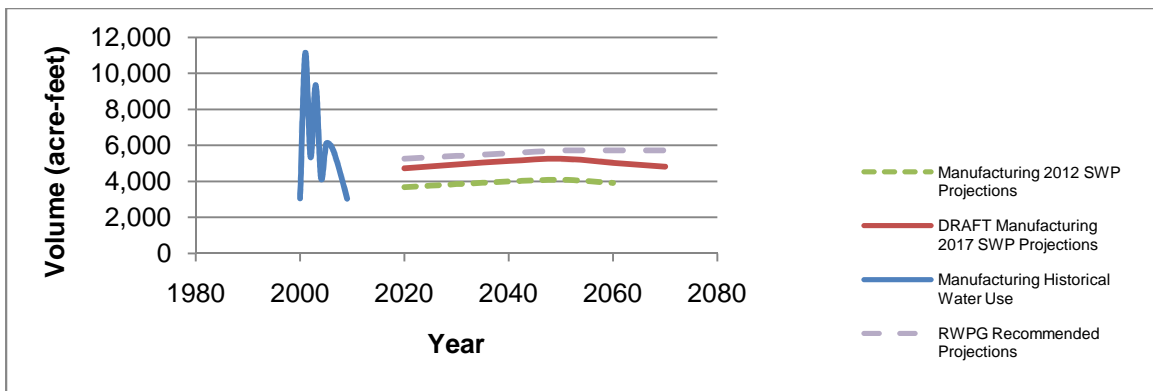


Figure 6. Fannin County Manufacturing Comparison

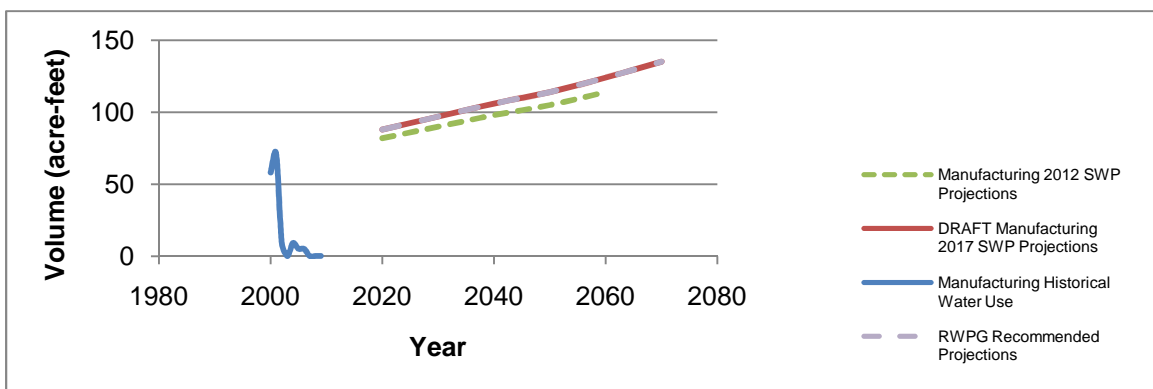


Figure 7. Freestone County Manufacturing Comparison

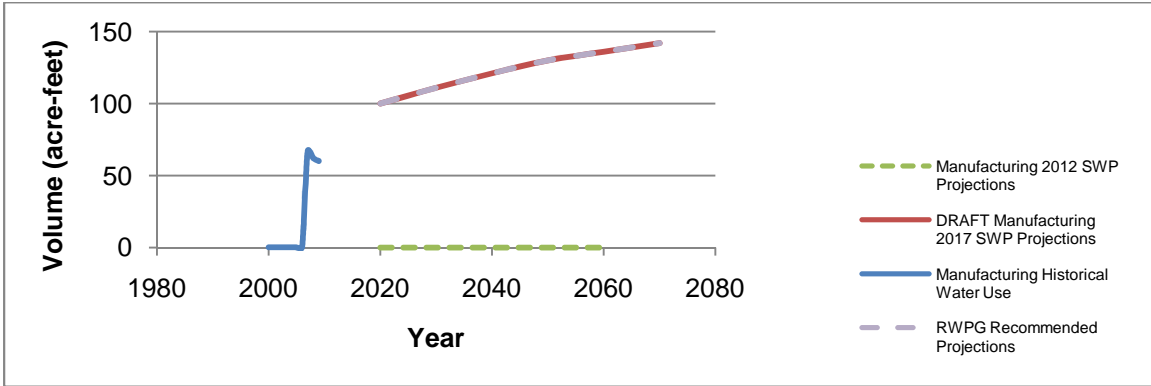


Figure 8. Grayson County Manufacturing Comparison

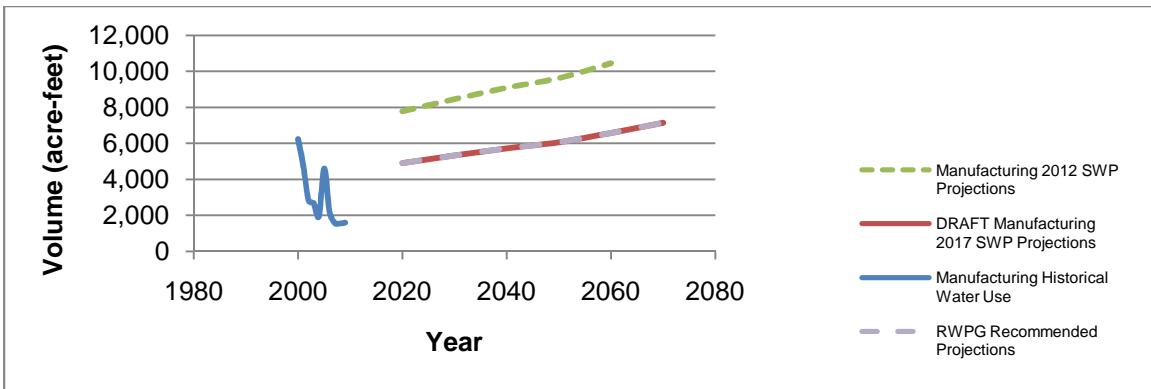


Figure 9. Henderson County Manufacturing Comparison

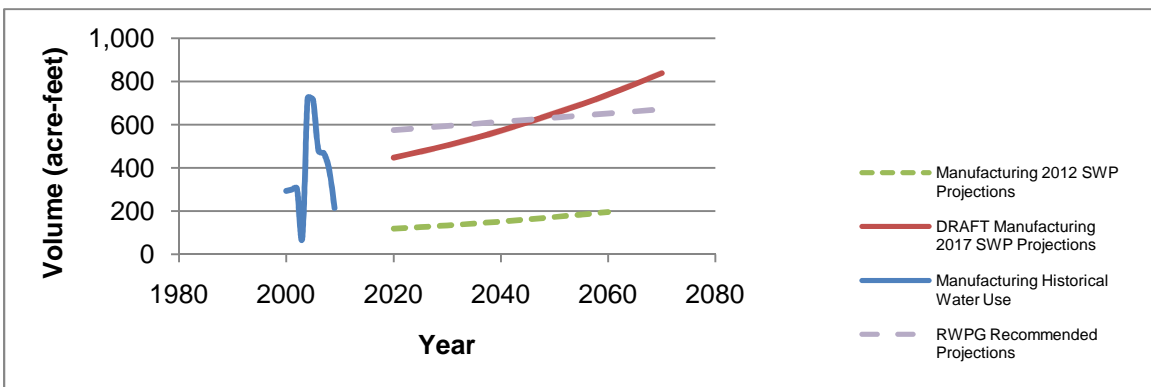


Figure 10. Jack County Manufacturing Comparison

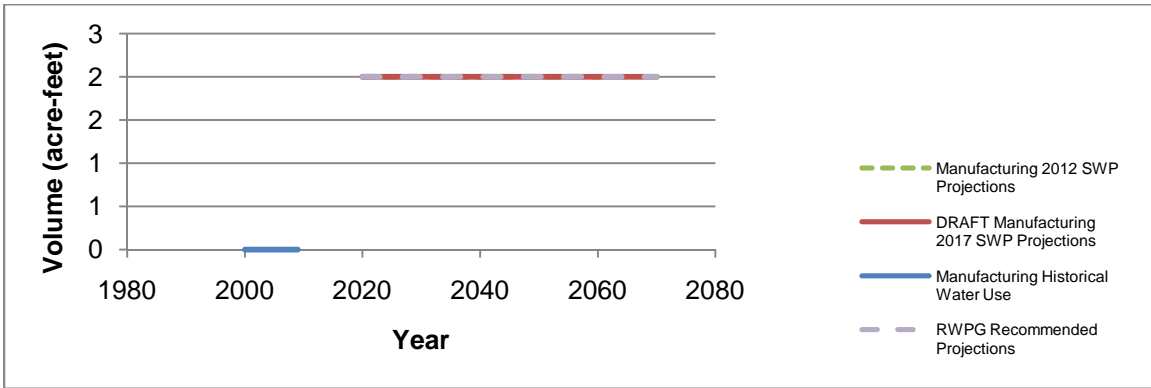


Figure 11. Kaufman County Manufacturing Comparison

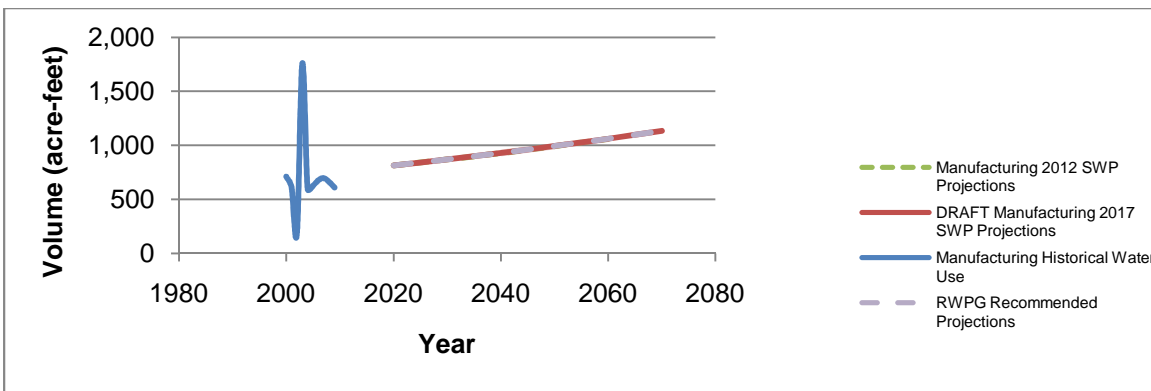


Figure 12. Navarro County Manufacturing Comparison

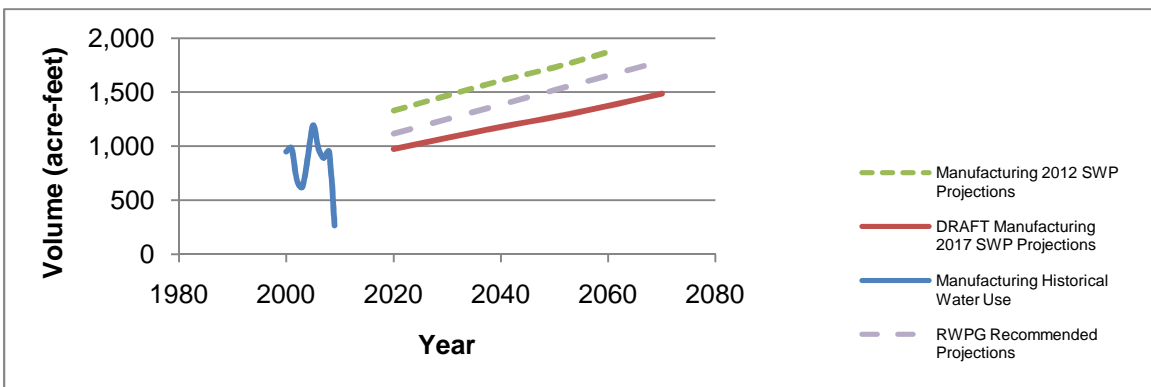


Figure 13. Parker County Manufacturing Comparison

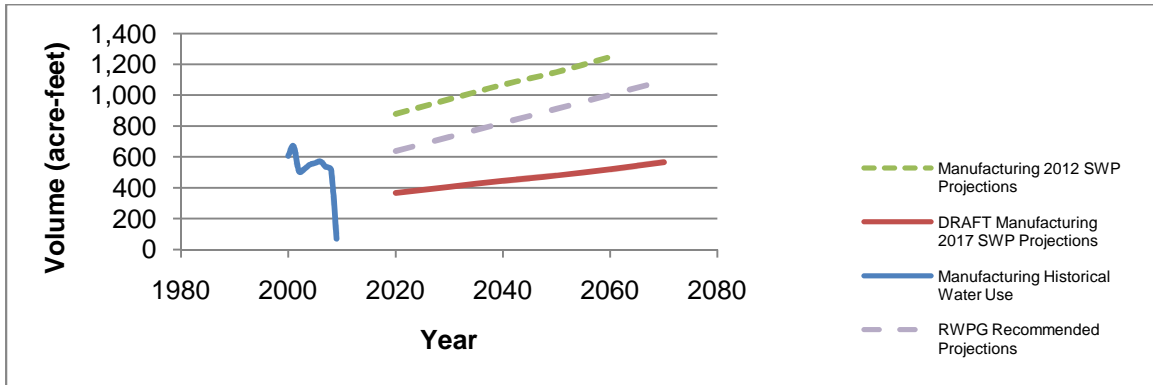


Figure 14. Rockwall County Manufacturing Comparison

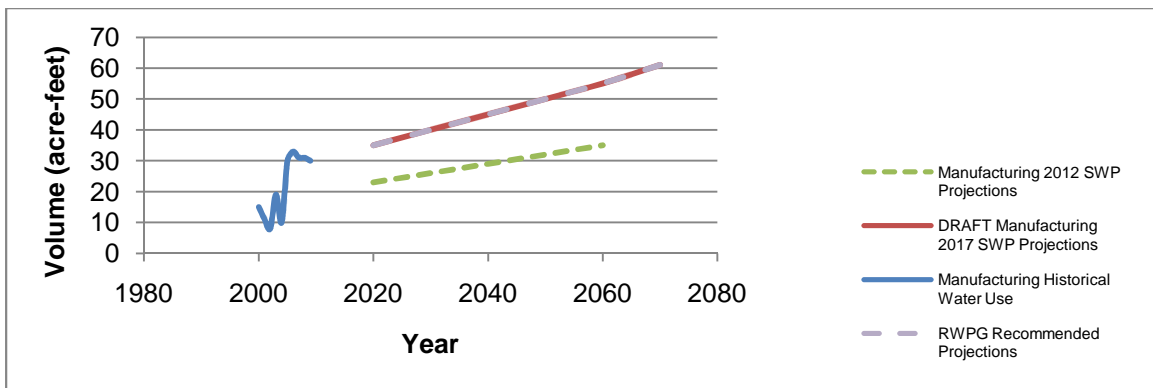


Figure 15. Tarrant County Manufacturing Comparison

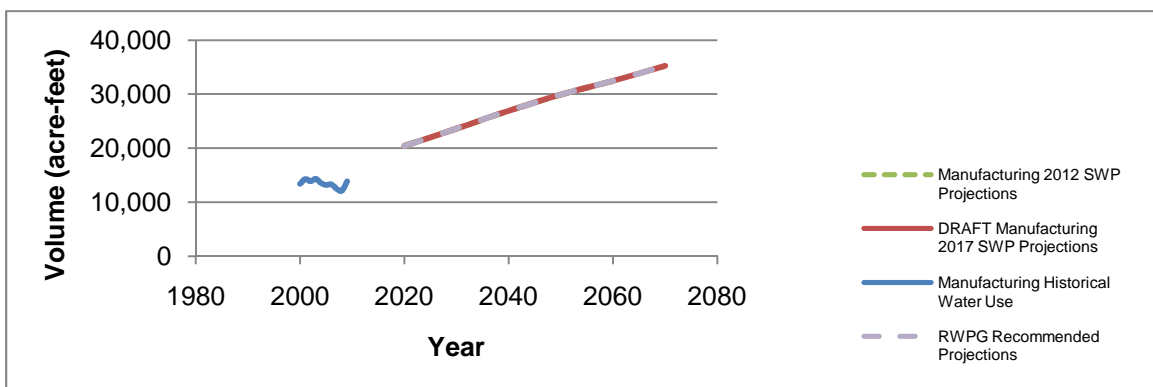


Figure 16. Wise County Manufacturing Comparison

