

**TVWD Long-Term Water Supply Planning  
Technical Memorandum 2 – Population & Demand Projections**

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To: TVWD Board of Commissioners  
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Date: April 10, 2013

RE: **Technical Memorandum 2 – Population & Demand Projections – FINAL**

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Tualatin Valley Water District (TVWD) is evaluating long-term water supply options to serve projected water supply needs through 2050. The purpose of this memorandum is to summarize projected peak day demands for the TVWD service area, the capacities of potential interim and long-term water supplies, and potential options for combining those supplies to meet peak day demands.

Projected peak day demands (PDDs) were developed by TVWD in March 2010. The demands were based on projections presented in the 2007 TVWD Water Master Plan Update (WMPU). In 2010 the District was observing decreased peak day usage and revised estimates based on the following assumptions:

- **Population Projections.** The service area population was assumed to have no growth in 2008 and 2009 and to grow at two-thirds the WMPU projected rate between 2010 and 2015. For years beyond 2015, it was assumed that the District would add the same number of customers in each year as projected in the WMPU.
- **Per Capita Demands.** Per capita demands for existing customers were reduced to 116 gallons per capita per day (gpcd) based on the more-recent usage data. Per capita demands for new growth were estimated at 105 gpcd based on the observed lower demands of new developments. These were reduced from the WMPU assumptions of 117 (gpcd) in the Wolf Creek Area and 124 gpcd in the Metzger Area
- **Peaking Factor.** The peaking factor (ration of peak day to average day demands) was reduced to 2.10 for both the Wolf Creek and Metzger areas based on observed reductions in peak day demands. The WMPU assumed peaking factors were 2.14 and 2.28 for the Wolf Creek and Metzger Areas, respectively.

The resulting 2050 projected populations were reduced from 279,929 to 272,063 for the Wolf Creek Area, from 32,267 to 31,311 for the Metzger Area, and from 312,196 to 303,374 for the overall service area. Projected populations are presented in Table 1 and Figure 1.

The resulting 2050 ADD projections were reduced from 32.9 to 30.7 mgd for the Wolf Creek Area, from 4.0 to 3.6 mgd for the Metzger Area, and from 36.9 to 34.3 mgd for the overall service area. Projected demands are presented in Table 2 and Figure 2.

The resulting 2050 PDD projections were reduced from 73.8 to 64.4 mgd for the Wolf Creek Area, from 9.1 to 7.6 mgd for the Metzger Area, and from 83.5 to 72.0 mgd for the overall service area. Projected demands are presented in Table 3 and Figure 3.

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<b>Table 1. Projected Service Area Populations</b>						
<b>Year</b>	<b>Wolf Creek Area Population</b>		<b>Metzger Area Population</b>		<b>Overall Service Area</b>	
	<b>2007 WMPU</b>	<b>Update</b>	<b>2007 WMPU</b>	<b>Update</b>	<b>2007 WMPU</b>	<b>Update</b>
2013	187,944	181,559	20,796	20,021	208,740	201,580
2014	190,174	183,053	21,068	20,203	211,242	203,256
2015	192,431	184,565	21,343	20,387	213,774	204,953
2016	194,714	186,848	21,622	20,666	216,336	207,515
2017	197,018	189,152	21,913	20,958	218,931	210,109
2018	199,383	191,517	22,203	21,247	221,586	212,764
2019	201,749	193,883	22,492	21,536	224,241	215,419
2020	204,114	196,248	22,781	21,826	226,896	218,074
2021	206,542	198,676	23,072	22,116	229,614	220,793
2022	208,993	201,127	23,376	22,421	232,369	223,547
2023	211,505	203,640	23,682	22,726	235,187	226,366
2024	214,018	206,152	23,987	23,032	238,005	229,184
2025	216,531	208,665	24,293	23,337	240,824	232,002
2026	219,089	211,223	24,619	23,663	243,708	234,887
2027	221,675	213,809	24,928	23,972	246,603	237,781
2028	224,306	216,440	25,257	24,302	249,563	240,742
2029	226,937	219,071	25,587	24,631	252,524	243,702
2030	229,568	221,702	25,916	24,961	255,484	246,663
2035	242,723	234,857	27,564	26,609	270,288	261,466
2040	255,475	247,609	29,180	28,225	284,655	275,833
2050	279,929	272,063	32,267	31,311	312,196	303,374

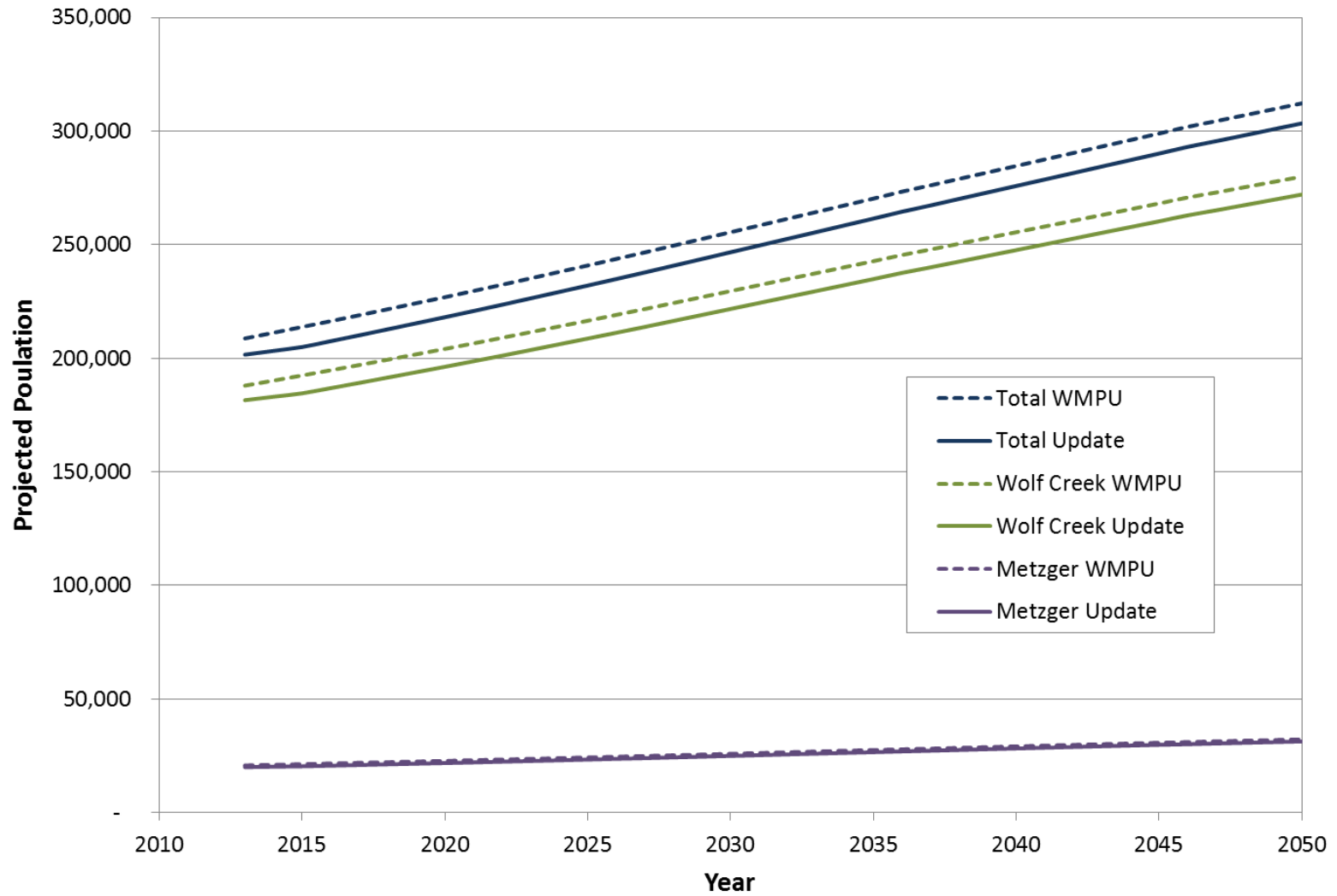


Figure 1. Projected Service Area Populations

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<b>Table 2 Projected Average Day Demands (mgd)</b>						
<b>Year</b>	<b>Wolf Creek Area</b>		<b>Metzger Area</b>		<b>Overall Service Area</b>	
	<b>2007 WMPU</b>	<b>Update</b>	<b>2007 WMPU</b>	<b>Update</b>	<b>2007 WMPU</b>	<b>Update</b>
2013	22.1	21.2	2.6	2.4	24.7	23.6
2014	22.3	21.3	2.6	2.4	24.9	23.8
2015	22.6	21.5	2.7	2.5	25.2	23.9
2016	22.9	21.7	2.7	2.5	25.5	24.2
2017	23.1	22.0	2.7	2.5	25.9	24.5
2018	23.4	22.2	2.8	2.6	26.2	24.8
2019	23.7	22.5	2.8	2.6	26.5	25.0
2020	24.0	22.7	2.8	2.6	26.8	25.3
2021	24.2	23.0	2.9	2.6	27.1	25.6
2022	24.5	23.2	2.9	2.7	27.4	25.9
2023	24.8	23.5	2.9	2.7	27.8	26.2
2024	25.1	23.7	3.0	2.7	28.1	26.5
2025	25.4	24.0	3.0	2.8	28.4	26.8
2026	25.7	24.3	3.1	2.8	28.8	27.1
2027	26.0	24.6	3.1	2.8	29.1	27.4
2028	26.3	24.8	3.1	2.9	29.5	27.7
2029	26.6	25.1	3.2	2.9	29.8	28.0
2030	27.0	25.4	3.2	2.9	30.2	28.3
2035	28.5	26.8	3.4	3.1	31.9	29.9
2040	30.0	28.1	3.6	3.3	33.6	31.4
2050	32.9	30.7	4.0	3.6	36.9	34.3

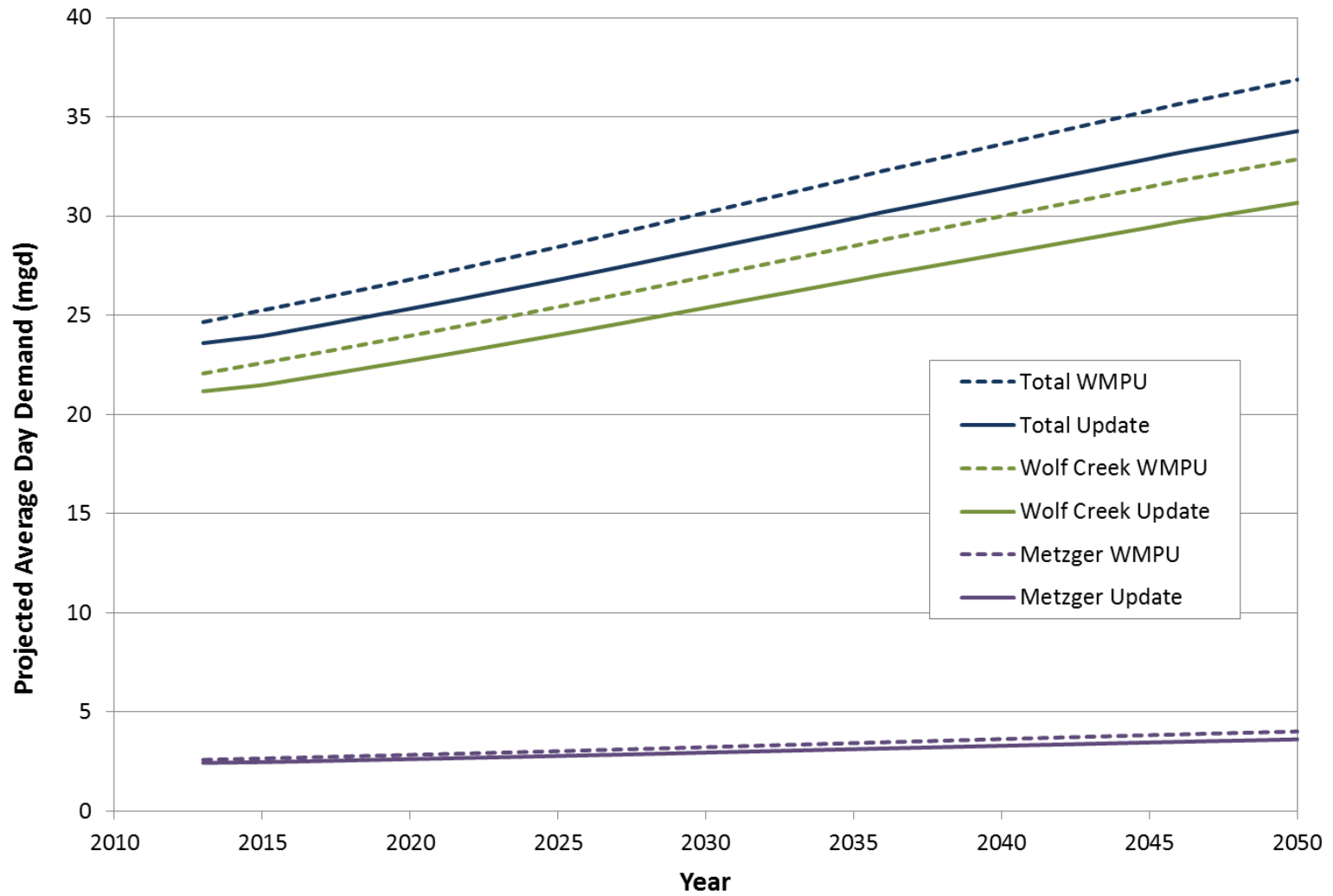


Figure 2. Projected Average Day Demands

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<b>Table 3 Projected Peak Day Demands (mgd)</b>						
<b>Year</b>	<b>Wolf Creek Area</b>		<b>Metzger Area</b>		<b>Overall Service Area</b>	
	<b>2007 WMPU</b>	<b>Update</b>	<b>2007 WMPU</b>	<b>Update</b>	<b>2007 WMPU</b>	<b>Update</b>
2013	47.2	44.4	5.9	5.1	53.1	49.5
2014	47.8	44.8	6.0	5.1	53.8	49.9
2015	48.3	45.1	6.1	5.2	54.4	50.3
2016	48.9	45.6	6.1	5.2	55.0	50.9
2017	49.5	46.1	6.2	5.3	55.7	51.4
2018	50.1	46.6	6.3	5.4	56.4	52.0
2019	50.7	47.2	6.4	5.4	57.1	52.6
2020	51.3	47.7	6.5	5.5	57.7	53.2
2021	51.9	48.2	6.5	5.6	58.4	53.8
2022	52.5	48.8	6.6	5.6	59.1	54.4
2023	53.1	49.3	6.7	5.7	59.9	55.0
2024	53.8	49.9	6.8	5.8	60.6	55.6
2025	54.4	50.4	6.9	5.8	61.3	56.3
2026	55.0	51.0	7.0	5.9	62.0	56.9
2027	55.7	51.6	7.1	6.0	62.8	57.5
2028	56.4	52.1	7.2	6.0	63.5	58.2
2029	57.0	52.7	7.3	6.1	64.3	58.8
2030	57.7	53.3	7.3	6.2	65.0	59.5
2035	61.0	56.2	7.8	6.6	68.8	62.8
2040	64.2	59.0	8.3	6.9	72.5	65.9
2050	70.3	64.4	9.1	7.6	79.5	72.0

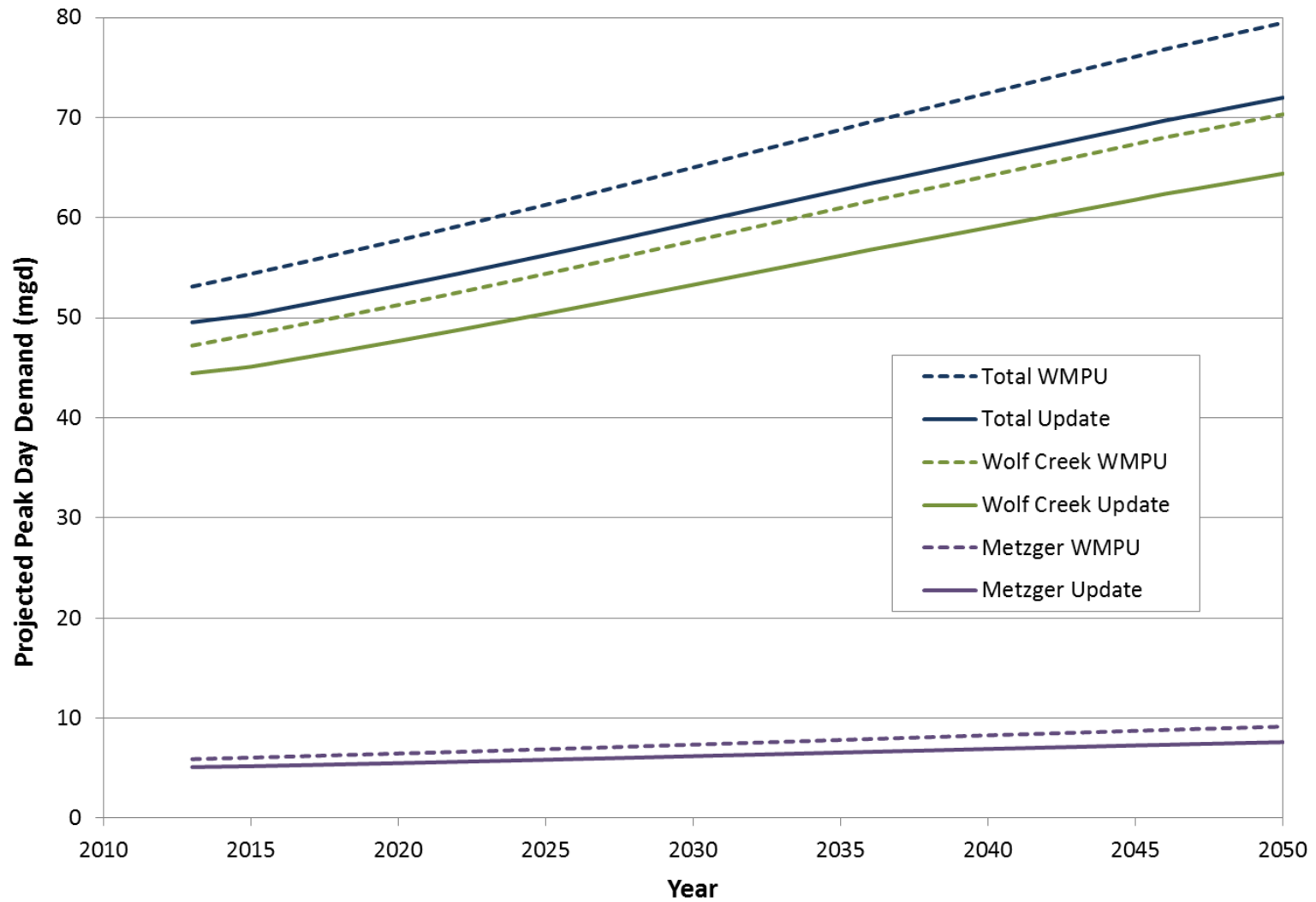


Figure 3. Projected Peak Day Demands