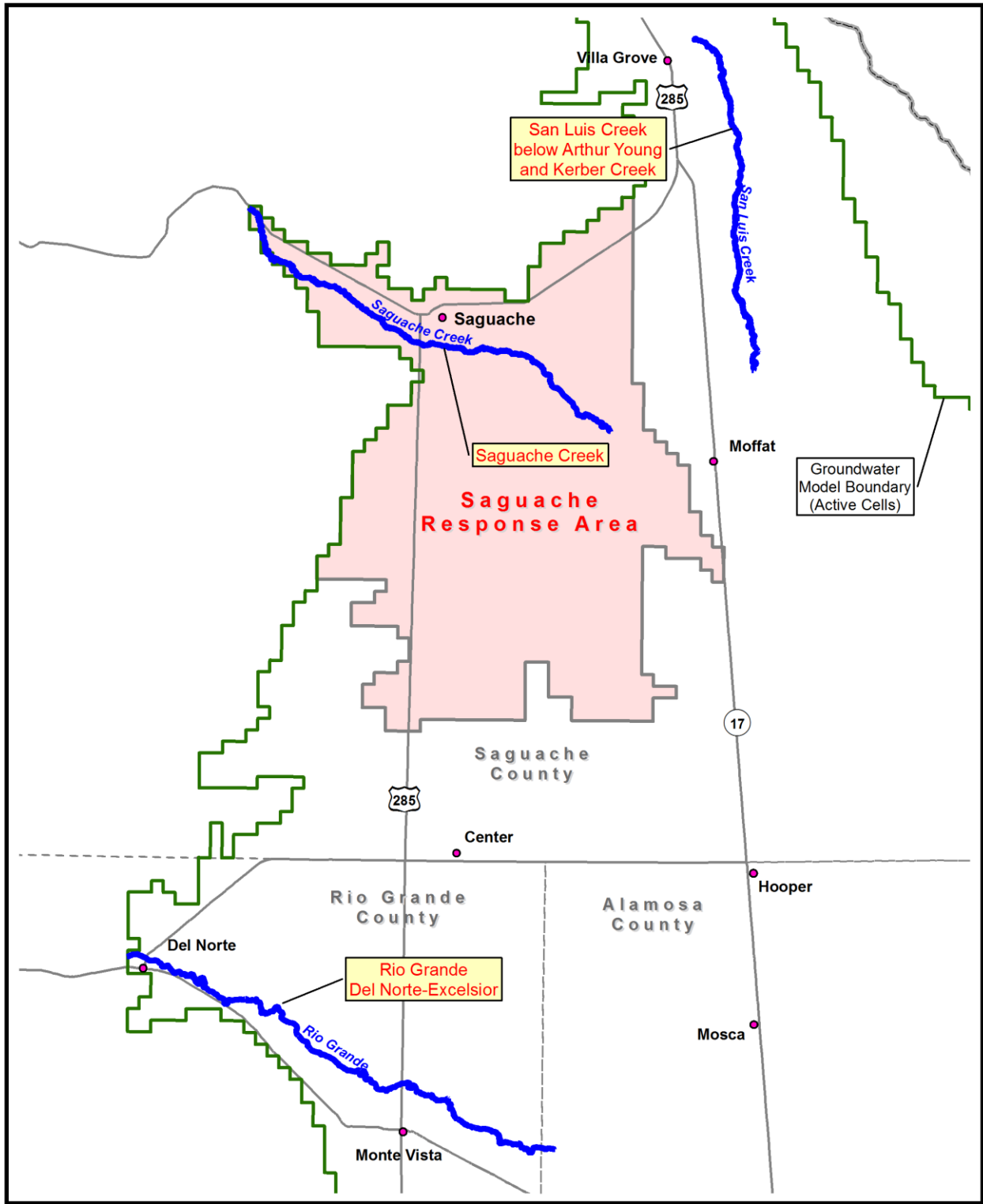



## RESPONSE AREA SUMMARY PACKAGE

### SAGUACHE RESPONSE AREA

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Figure 1	<b><i>Saguache Response Area, Stream Reaches with Response Functions</i></b> - This figure shows the stream reaches for which Response Functions were calibrated. For the Saguache Response Area there are three stream reaches with Response Functions: <ol style="list-style-type: none"><li>1. Saguache Creek</li><li>2. Rio Grande Del Norte to Excelsior Ditch</li><li>3. San Luis Creek below Arthur Young Ditch and Kerber Creek</li></ol>
Table 1a	<b><i>Estimated Historical and Current Year Net Stream Depletions from Groundwater Withdrawals in the Saguache Response Area (acre-feet)</i></b> - This table provides a summary of the Saguache Response Area's groundwater withdrawal impacts to streams using Response Functions calibrated to the RGDSS Groundwater Model for the time frame of 2001 through 2015. For illustrative purposes, groundwater withdrawal was discontinued after 2015 and the Response Functions were applied to estimate post plan depletions. Net Groundwater Consumptive Use is defined as the groundwater consumed by the operations of one or more wells and represents the difference between groundwater withdrawals less any return flow to the hydrogeologic system.
Table 1b	<b><i>Estimated Post Plan Net Stream Depletions from Groundwater Withdrawals in the Saguache Response Area (acre-feet)</i></b>
Figure 2	<b><i>2001-2015 Estimated Net Stream Depletions and Post 2015 Projected Net Stream Depletions from Groundwater Withdrawals in the Saguache Response Area</i></b> - The stacked graph shows the combination of Table 1a (historical and current year depletions) and Table 1b (post-plan depletions) .
Table 2	<b><i>Monthly Net Stream Depletions for 2015 Plan Year in the Saguache Response Area (acre-feet)</i></b> - This table provides the monthly distribution of Net Stream Depletions for the 2015 Plan Year.



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**Figure 1. Saguache Response Area Stream Reaches with Response Functions**

<b>Table 1a: Estimated Historical and Current Year Net Stream Depletions from Groundwater Withdrawals in the Saguache Response Area (acre-feet)</b>						
	Saguache Creek near Saguache (Apr-Sep)	Net Groundwater Consumptive Use (Jan-Dec)	Net Stream Depletions (May – April)			Total
			Saguache Creek	Rio Grande Del Norte-Excelsior	San Luis Creek below Arthur Young and Kerber Creek	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2001	39,690	30,247	1,517	259	267	2,043
2002	7,687	40,436	320	274	222	816
2003	16,142	30,167	329	305	222	856
2004	25,585	23,818	583	322	262	1,167
2005	29,294	22,336	673	328	307	1,308
2006	21,283	23,796	601	332	223	1,156
2007	39,634	22,093	1,914	328	313	2,555
2008	31,611	24,553	886	317	331	1,534
2009	30,123	19,427	866	316	318	1,500
2010	27,043	23,101	603	315	270	1,188
2011	20,714	15,318	276	312	176	764
2012	15,263	16,477	252	307	164	723
2013	19,641	15,652	406	307	178	891
2014	35,933	11,408	606	297	221	1,124
2015	35,933	7,073	546	278	195	1,019
Average	26,372	21,727	692	306	245	1,243

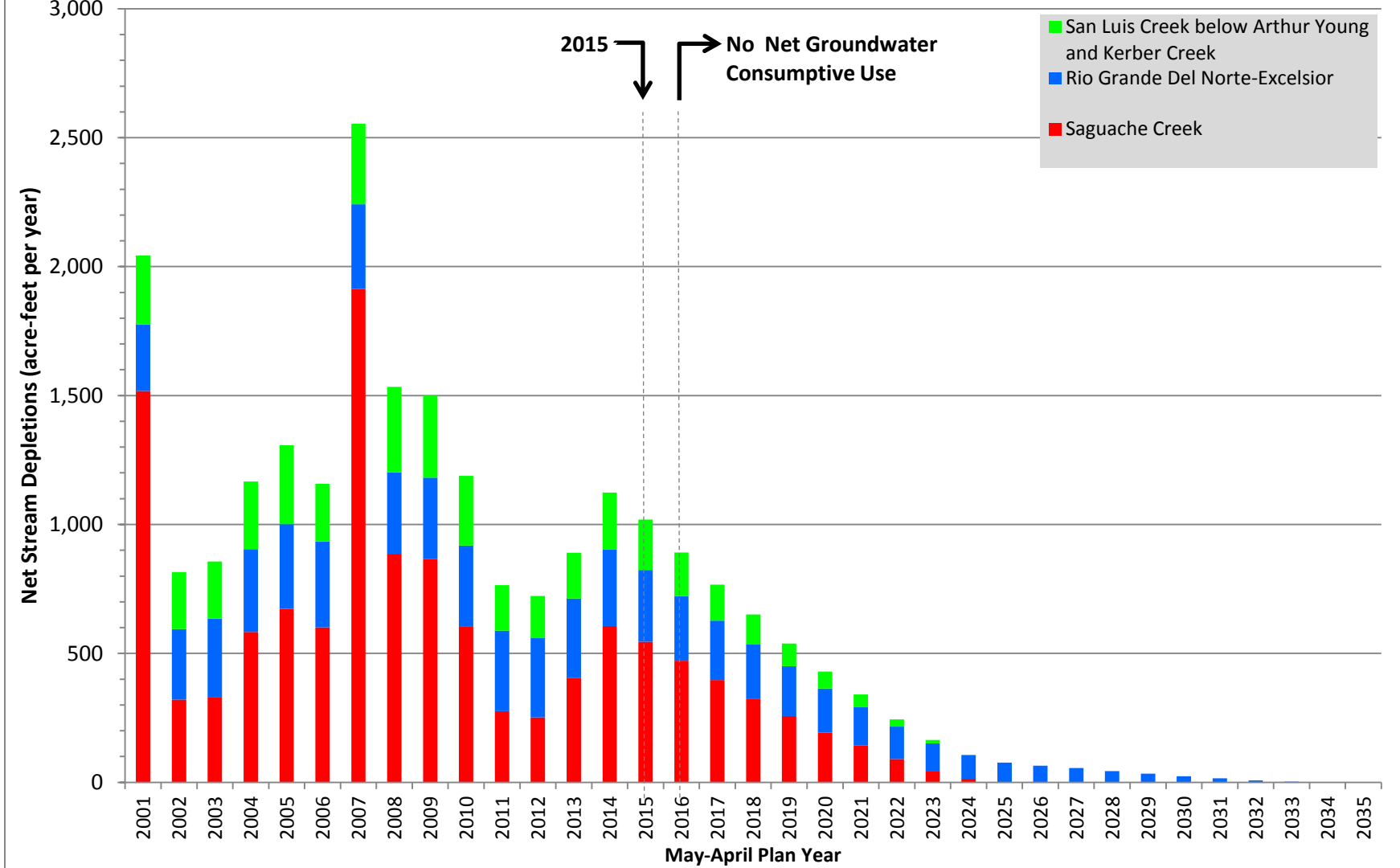
**Table 1b: Estimated Post Plan Net Stream Depletions from Groundwater Withdrawals in the Saguache Response Area (acre-feet)**

Year	Saguache Creek near Saguache (Apr-Sep)	Net Groundwater Consumptive Use (Jan-Dec)	Net Stream Depletions (May – April)			Total
			Saguache Creek	Rio Grande Del Norte-Excelsior	San Luis Creek below Arthur Young and Kerber Creek	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
2016		0	471	252	168	891
2017		0	397	230	140	767
2018		0	324	212	114	650
2019		0	257	193	88	538
2020		0	193	170	67	430
2021		0	142	151	47	340
2022		0	90	126	28	244
2023		0	45	106	13	164
2024		0	14	91	3	108
2025		0	0	77	0	77
2026		0	0	65	0	65
2027		0	0	55	0	55
2028		0	0	43	0	43
2029		0	0	33	0	33
2030		0	0	24	0	24
2031		0	0	16	0	16
2032		0	0	8	0	8
2033		0	0	2	0	2
2034		0	0	1	0	1
2035		0	0	0	0	0
Post Plan Depletion		0	1,933	1,855	668	4,456

## Notes for Tables 1a and 1b columns:

1. Year
2. Saguache Creek near Saguache Gage streamflow in acre-feet for the period of April through September. The 2015 streamflow data was estimated to be the same as in 2014.
3. Net Groundwater Consumptive Use (NetGWCU) for January through December.
  - a. NetGWCU values for 2001 through 2010 were taken from the RGDSS Groundwater Model output.
  - b. NetGWCU values for 2011 through 2014 were calculated using well meter data and irrigated acreage information.
  - c. NetGWCU data for 2015 was estimated to be the same as in 2014.
4. Net Stream Depletions in Saguache Creek for the plan year (May through April) in acre-feet.
5. Net Stream Depletions in the Rio Grande Del Norte to Excelsior Ditch reach for the plan year (May through April) in acre-feet.
6. Net Stream Depletions in San Luis Creek below the Arthur Young Ditch and Kerber Creek for the plan year (May through April) in acre-feet.
7. Total Net Stream Depletions columns (4+5) in acre-feet.

**Figure 2: 2001-2015 Estimated Net Stream Depletions and Post 2015 Projected Net Stream Depletions from Groundwater Withdrawals in the Saguache Response Area**



<b>Table 2: Monthly Net Stream Depletions for 2015 Plan Year in the Saguache Response Area (acre-feet)</b>													
	2015								2016				
<b>Stream Reach</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>Total</b>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Saguache Creek	111	155	57	15	0	0	9	1	22	31	78	65	544
Rio Grande Del Norte-Excelsior	28	23	28	22	22	24	24	24	21	19	21	22	278
San Luis Creek below Arthur Young and Kerber Creek	20	10	1	1	1	1	2	30	37	32	33	28	196
<b>Total</b>	<b>159</b>	<b>188</b>	<b>86</b>	<b>38</b>	<b>23</b>	<b>25</b>	<b>35</b>	<b>55</b>	<b>80</b>	<b>82</b>	<b>132</b>	<b>115</b>	<b>1,018</b>

Notes for columns:

- 1 Stream reach
- 2-13 Monthly Net Stream Depletions in acre-feet
- 14 Total Plan Year Net Stream Depletions in acre-feet