

## **Appendix F**

- Water Balance Worksheet
- Projection Analysis Worksheets



# AWWA Free Water Audit Software: Water Balance

WAS v5.0

American Water Works Association.  
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| Own Sources<br>(Adjusted for known errors)<br><br>2,826.500 | Water Exported<br>0.000                                             | Billed Water Exported                          |                                                |                                                                         |                                                                      |
|-------------------------------------------------------------|---------------------------------------------------------------------|------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------------------|
|                                                             | Water Supplied<br><br>8,273.500                                     | Authorized Consumption<br><br>8,129.419        | Billed Authorized Consumption<br><br>8,026.000 | Billed Metered Consumption (water exported is removed)<br><br>8,026.000 | Revenue Water                                                        |
|                                                             |                                                                     |                                                |                                                | Billed Unmetered Consumption<br><br>0.000                               | 8,026.000                                                            |
|                                                             |                                                                     | Unbilled Authorized Consumption<br><br>103.419 | Unbilled Metered Consumption<br><br>0.000      | Non-Revenue Water (NRW)<br><br>247.500                                  |                                                                      |
|                                                             |                                                                     |                                                | Unbilled Unmetered Consumption<br><br>103.419  |                                                                         |                                                                      |
|                                                             |                                                                     | Water Losses<br><br>144.081                    | Apparent Losses<br><br>121.819                 | Unauthorized Consumption<br><br>20.684                                  |                                                                      |
|                                                             |                                                                     |                                                |                                                | Customer Metering Inaccuracies<br><br>81.071                            |                                                                      |
|                                                             |                                                                     |                                                |                                                | Systematic Data Handling Errors<br><br>20.065                           |                                                                      |
|                                                             |                                                                     | Water Imported<br><br>5,447.000                |                                                | Real Losses<br><br>22.262                                               | Leakage on Transmission and/or Distribution Mains<br>Not broken down |
|                                                             | Leakage and Overflows at Utility's Storage Tanks<br>Not broken down |                                                |                                                |                                                                         |                                                                      |
| Leakage on Service Connections<br>Not broken down           |                                                                     |                                                |                                                |                                                                         |                                                                      |

**Water Resources Planning Department**

**Projection Analysis Work Sheets  
for  
Livermore District**

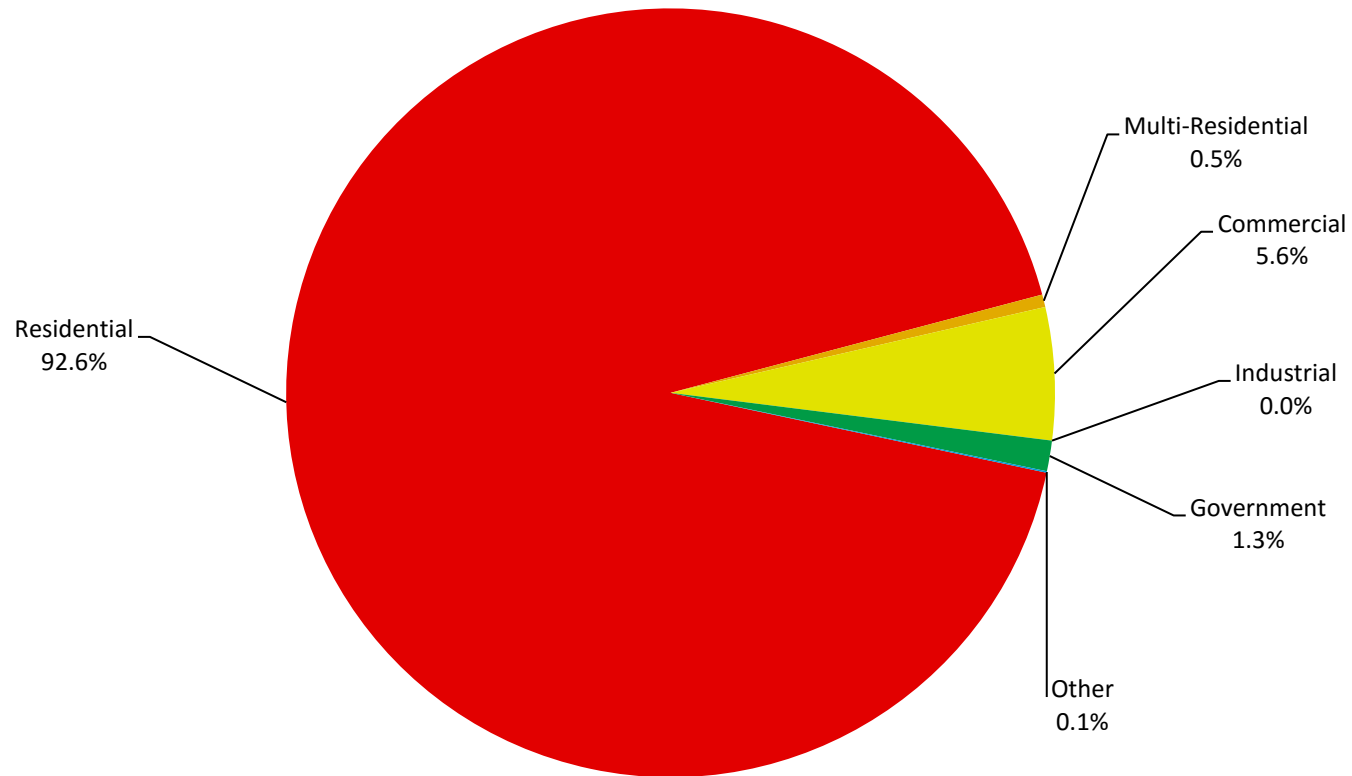
**2015**



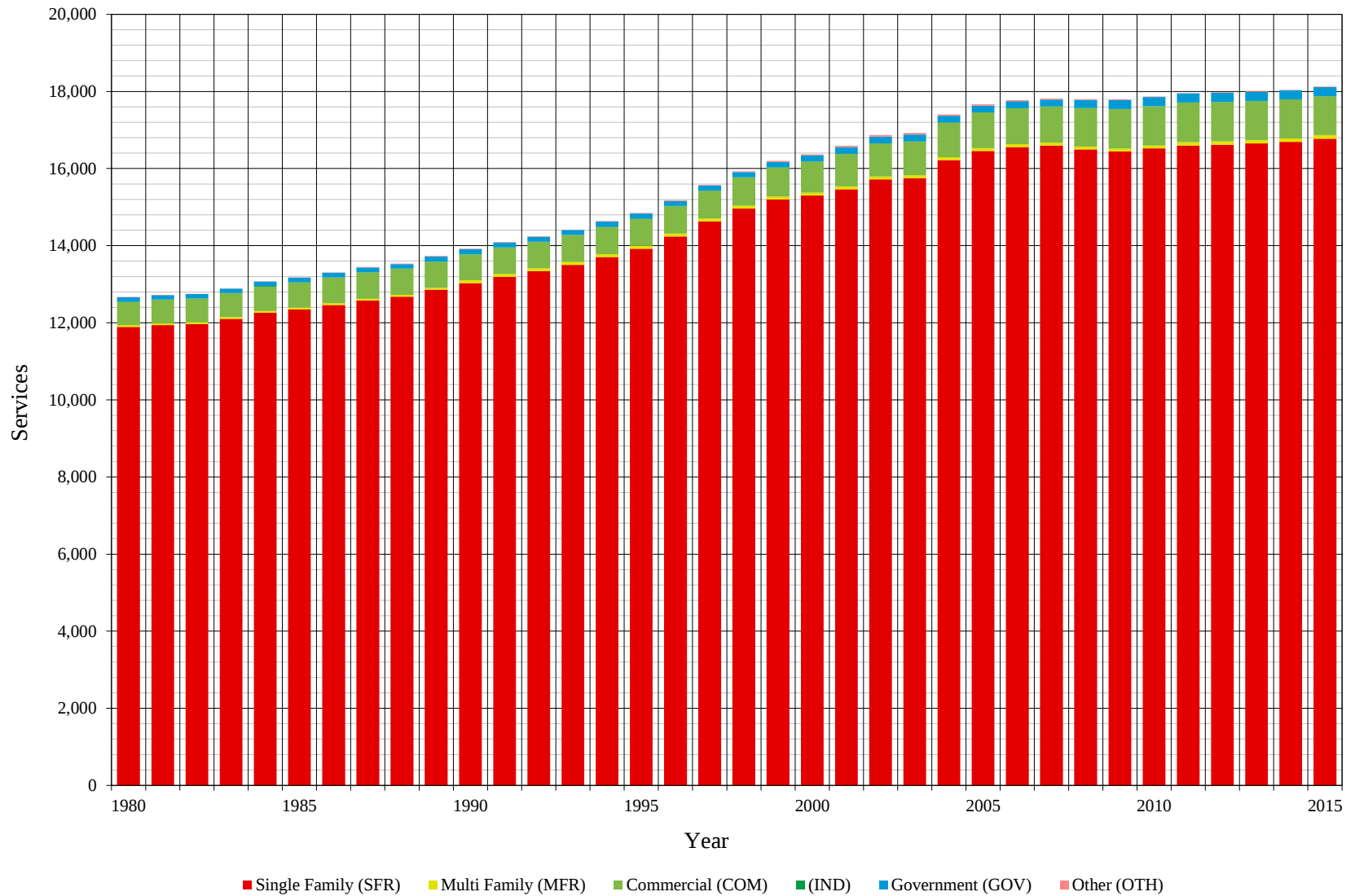
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## Distribution of Services (2015)



# Historical Services



**California Water Service Company - Livermore District**  
**Water Supply and Demand Analysis and Projections**  
**Average Annual Services**

Worksheet 1

| Year       | Single Family<br>(SFR) | Multi Family<br>(MFR) | Commercial<br>(COM) | Industrial<br>(IND) | Government<br>(GOV) | Other<br>(OTH) | Irrigation<br>(IRR) | Total  | Annual<br>Change |
|------------|------------------------|-----------------------|---------------------|---------------------|---------------------|----------------|---------------------|--------|------------------|
| 1980       | 11,894                 | 45                    | 599                 | 9                   | 116                 | 7              | 0                   | 12,669 |                  |
| 1981       | 11,939                 | 45                    | 608                 | 8                   | 116                 | 7              | 0                   | 12,724 | 55               |
| 1982       | 11,967                 | 45                    | 609                 | 8                   | 117                 | 6              | 0                   | 12,753 | 29               |
| 1983       | 12,102                 | 45                    | 615                 | 8                   | 117                 | 6              | 0                   | 12,893 | 140              |
| 1984       | 12,263                 | 45                    | 629                 | 19                  | 117                 | 7              | 0                   | 13,078 | 185              |
| 1985       | 12,345                 | 46                    | 652                 | 8                   | 118                 | 9              | 0                   | 13,179 | 101              |
| 1986       | 12,463                 | 47                    | 659                 | 8                   | 122                 | 9              | 0                   | 13,308 | 129              |
| 1987       | 12,578                 | 46                    | 682                 | 8                   | 122                 | 9              | 0                   | 13,445 | 137              |
| 1988       | 12,676                 | 45                    | 680                 | 6                   | 118                 | 11             | 0                   | 13,535 | 91               |
| 1989       | 12,857                 | 48                    | 680                 | 6                   | 125                 | 12             | 0                   | 13,728 | 193              |
| 1990       | 13,030                 | 72                    | 671                 | 5                   | 128                 | 14             | 0                   | 13,920 | 192              |
| 1991       | 13,190                 | 75                    | 685                 | 5                   | 127                 | 17             | 0                   | 14,098 | 178              |
| 1992       | 13,337                 | 75                    | 687                 | 5                   | 128                 | 14             | 0                   | 14,245 | 147              |
| 1993       | 13,503                 | 76                    | 694                 | 3                   | 130                 | 11             | 0                   | 14,417 | 171              |
| 1994       | 13,707                 | 75                    | 707                 | 3                   | 131                 | 14             | 0                   | 14,637 | 220              |
| 1995       | 13,919                 | 75                    | 705                 | 3                   | 133                 | 14             | 0                   | 14,848 | 211              |
| 1996       | 14,236                 | 75                    | 713                 | 3                   | 133                 | 16             | 0                   | 15,176 | 328              |
| 1997       | 14,628                 | 75                    | 722                 | 3                   | 133                 | 15             | 0                   | 15,576 | 400              |
| 1998       | 14,958                 | 75                    | 733                 | 3                   | 139                 | 19             | 0                   | 15,928 | 352              |
| 1999       | 15,200                 | 75                    | 752                 | 3                   | 142                 | 24             | 0                   | 16,197 | 269              |
| 2000       | 15,300                 | 75                    | 805                 | 3                   | 163                 | 23             | 0                   | 16,369 | 172              |
| 2001       | 15,461                 | 75                    | 843                 | 2                   | 178                 | 30             | 0                   | 16,590 | 221              |
| 2002       | 15,718                 | 75                    | 859                 | 1                   | 177                 | 36             | 0                   | 16,866 | 277              |
| 2003       | 15,755                 | 75                    | 878                 | 1                   | 176                 | 37             | 0                   | 16,922 | 55               |
| 2004       | 16,216                 | 75                    | 898                 | 1                   | 176                 | 34             | 0                   | 17,400 | 25               |
| 2005       | 16,457                 | 75                    | 925                 | 1                   | 174                 | 31             | 0                   | 17,663 | 741              |
| 2006       | 16,560                 | 75                    | 932                 | 1                   | 180                 | 26             | 0                   | 17,774 | 373              |
| 2007       | 16,596                 | 75                    | 937                 | 1                   | 180                 | 26             | 1                   | 17,816 | 154              |
| 2008       | 16,496                 | 76                    | 998                 | 1                   | 209                 | 23             | 1                   | 17,804 | 30               |
| 2009       | 16,443                 | 76                    | 1,024               | 0                   | 234                 | 18             | 1                   | 17,796 | -21              |
| 2010       | 16,521                 | 77                    | 1,022               | 0                   | 234                 | 15             | 1                   | 17,870 | 67               |
| 2011       | 16,601                 | 83                    | 1,029               | 0                   | 235                 | 12             | 1                   | 17,961 | 165              |
| 2012       | 16,621                 | 83                    | 1,023               | 0                   | 235                 | 16             | 1                   | 17,978 | 108              |
| 2013       | 16,654                 | 84                    | 1,019               | 0                   | 234                 | 20             | 1                   | 18,011 | 51               |
| 2014       | 16,695                 | 88                    | 1,012               | 0                   | 233                 | 13             | 1                   | 18,042 | 64               |
| 2015       | 16,773                 | 96                    | 1,010               | 0                   | 233                 | 12             | 1                   | 18,124 | 113              |
| 5 Yr Avg.  | 16,669                 | 87                    | 1,018               | 0                   | 234                 | 15             | 1                   | 18,023 | 91               |
| 10 Yr Avg. | 16,596                 | 81                    | 1,001               | 1                   | 221                 | 18             | 1                   | 17,918 | 195              |
| 15 Yr Avg. | 16,371                 | 79                    | 961                 | 1                   | 206                 | 23             | 1                   | 17,641 | 179              |
| 20 Yr Avg. | 15,995                 | 78                    | 907                 | 2                   | 190                 | 22             | 1                   | 17,193 | 214              |

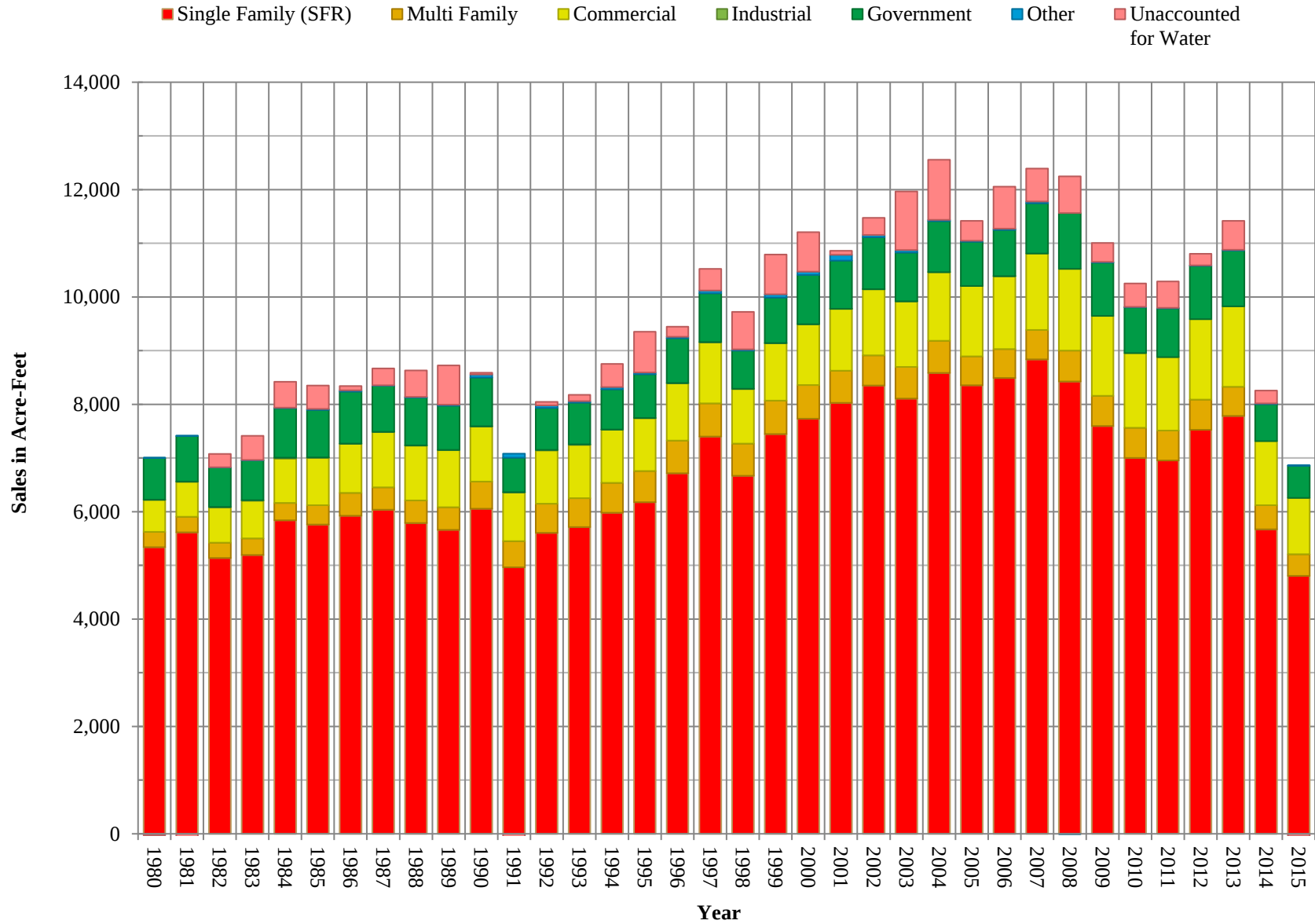
**California Water Service Company - Livermore District**  
**Water Supply and Demand Analysis and Projections**  
**Service Growth Percentage**

| Year        | Single Family<br>(SFR) | Multi Family<br>(MFR) | Commercial<br>(COM) | Industrial<br>(IND) | Government<br>(GOV) | Other<br>(OTH) | Total  |
|-------------|------------------------|-----------------------|---------------------|---------------------|---------------------|----------------|--------|
| 1981        | 0.38%                  | 0.00%                 | 1.57%               | -4.72%              | 0.00%               | 10.26%         | 0.43%  |
| 1982        | 0.24%                  | 0.00%                 | 0.11%               | -4.95%              | 0.79%               | -15.12%        | 0.22%  |
| 1983        | 1.12%                  | 0.00%                 | 0.96%               | 0.00%               | -0.28%              | 4.11%          | 1.10%  |
| 1984        | 1.33%                  | -0.19%                | 2.25%               | 132.29%             | -0.21%              | 3.95%          | 1.44%  |
| 1985        | 0.68%                  | 2.60%                 | 3.75%               | -56.95%             | 1.50%               | 36.71%         | 0.77%  |
| 1986        | 0.96%                  | 1.27%                 | 1.07%               | 0.00%               | 2.67%               | 2.78%          | 0.98%  |
| 1987        | 0.92%                  | -1.79%                | 3.51%               | -4.17%              | 0.48%               | -5.41%         | 1.03%  |
| 1988        | 0.78%                  | -1.82%                | -0.28%              | -21.74%             | -3.68%              | 21.90%         | 0.67%  |
| 1989        | 1.43%                  | 7.04%                 | -0.02%              | 0.00%               | 6.23%               | 10.16%         | 1.43%  |
| 1990        | 1.34%                  | 48.44%                | -1.31%              | -16.67%             | 2.13%               | 21.99%         | 1.39%  |
| 1991        | 1.23%                  | 4.90%                 | 2.02%               | 0.00%               | -0.85%              | 15.70%         | 1.28%  |
| 1992        | 1.11%                  | 0.44%                 | 0.32%               | -10.00%             | 0.92%               | -16.58%        | 1.04%  |
| 1993        | 1.24%                  | 0.55%                 | 1.07%               | -33.33%             | 1.70%               | -20.48%        | 1.20%  |
| 1994        | 1.51%                  | -0.77%                | 1.79%               | 0.00%               | 0.90%               | 25.76%         | 1.53%  |
| 1995        | 1.55%                  | 0.00%                 | -0.29%              | 0.00%               | 1.08%               | 1.81%          | 1.44%  |
| 1996        | 2.28%                  | -0.22%                | 1.15%               | 0.00%               | 0.25%               | 16.57%         | 2.21%  |
| 1997        | 2.75%                  | 0.00%                 | 1.24%               | 0.00%               | 0.44%               | -9.64%         | 2.63%  |
| 1998        | 2.26%                  | 0.00%                 | 1.62%               | 0.00%               | 4.50%               | 25.84%         | 2.26%  |
| 1999        | 1.62%                  | 0.00%                 | 2.59%               | 0.00%               | 2.09%               | 27.23%         | 1.69%  |
| 2000        | 0.66%                  | 0.00%                 | 7.03%               | 0.00%               | 14.46%              | -5.26%         | 1.06%  |
| 2001        | 1.05%                  | 0.00%                 | 4.67%               | -22.22%             | 9.26%               | 34.44%         | 1.35%  |
| 2002        | 1.66%                  | 0.00%                 | 1.97%               | -39.29%             | -0.70%              | 19.56%         | 1.67%  |
| 2003        | 0.24%                  | -0.44%                | 2.19%               | -29.41%             | -0.71%              | 1.61%          | 0.33%  |
| 2004        | 2.93%                  | 0.45%                 | 2.25%               | 0.00%               | 0.14%               | -6.35%         | 2.83%  |
| 2005        | 1.48%                  | 0.00%                 | 3.04%               | 0.00%               | -0.76%              | -11.38%        | 1.51%  |
| 2006        | 0.63%                  | 0.00%                 | 0.69%               | 0.00%               | 3.30%               | -14.21%        | 0.63%  |
| 2007        | 0.22%                  | 0.00%                 | 0.55%               | 0.00%               | -0.09%              | 0.64%          | 0.24%  |
| 2008        | -0.60%                 | 0.67%                 | 6.57%               | -50.00%             | 16.34%              | -14.56%        | -0.07% |
| 2009        | -0.32%                 | 0.44%                 | 2.57%               | -100.00%            | 11.62%              | -18.52%        | -0.04% |
| 2010        | 0.48%                  | 1.98%                 | -0.17%              |                     | 0.00%               | -20.45%        | 0.42%  |
| 2011        | 0.48%                  | 7.33%                 | 0.60%               |                     | 0.68%               | -16.57%        | 0.51%  |
| 2012        | 0.12%                  | -0.50%                | -0.58%              |                     | -0.14%              | 32.88%         | 0.10%  |
| 2013        | 0.20%                  | 1.41%                 | -0.39%              |                     | -0.28%              | 21.65%         | 0.18%  |
| 2014        | 0.24%                  | 4.68%                 | -0.61%              |                     | -0.43%              | -33.90%        | 0.17%  |
| 2015        | 0.47%                  | 9.22%                 | -0.26%              |                     | -0.21%              | -10.90%        | 0.45%  |
| 5 Yr. Avg.  | 0.30%                  | 0.46%                 | -0.25%              | 0.00%               | -0.08%              | -1.37%         | 0.28%  |
| 10 Yr. Avg. | 0.19%                  | 0.34%                 | 0.90%               | 0.00%               | 3.08%               | -7.39%         | 0.26%  |
| 15 Yr. Avg. | 0.62%                  | 0.18%                 | 1.54%               | 0.00%               | 2.53%               | -2.40%         | 0.69%  |
| 20 Yr. Avg. | 0.94%                  | 0.11%                 | 1.84%               | 0.00%               | 2.99%               | 0.93%          | 1.01%  |

Note: Values in red excluded due reclassification

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# Historical Sales

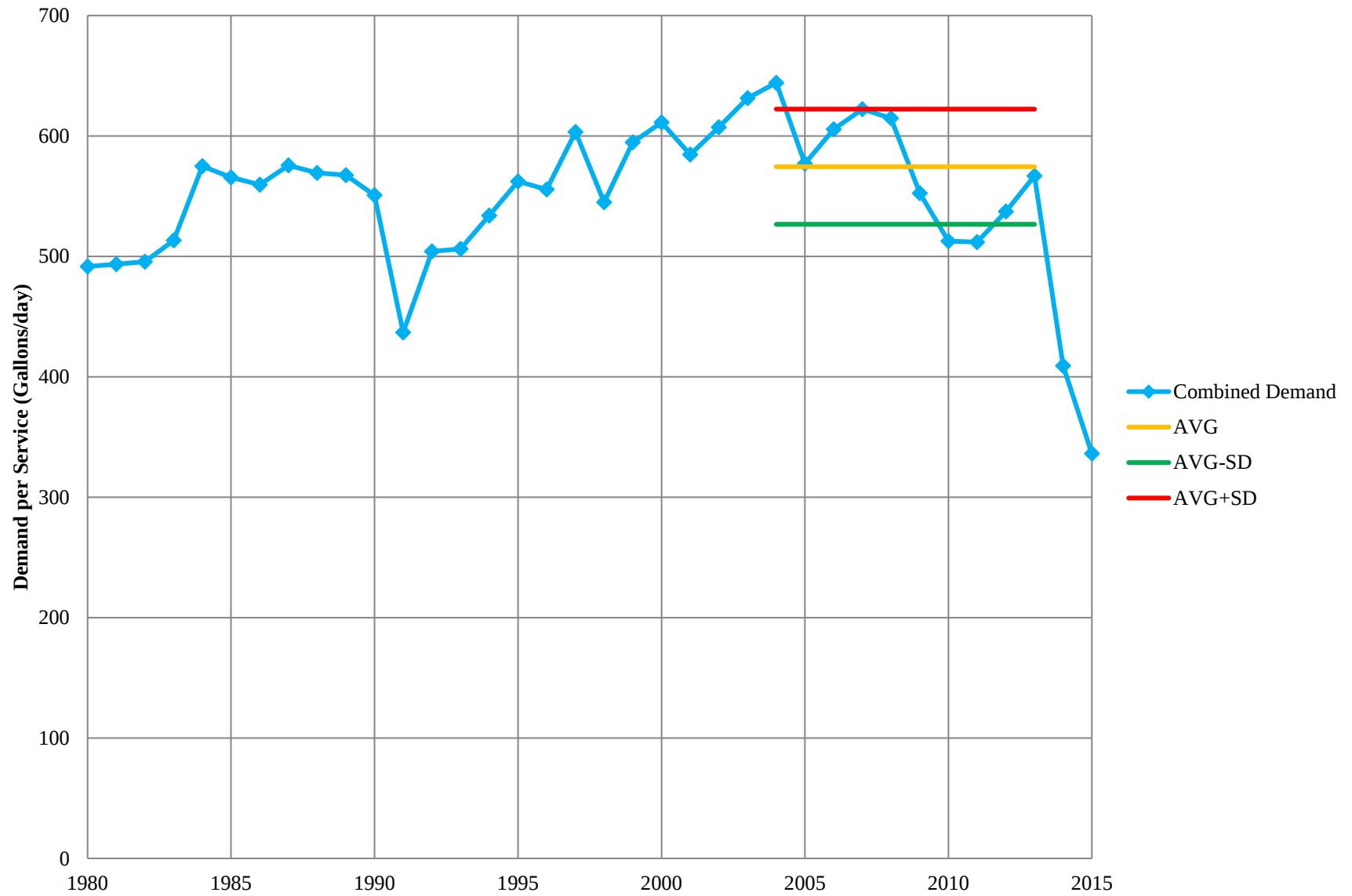


**California Water Service Company - Livermore District**  
**Water Supply and Demand Analysis and Projections**  
**Sales (AF)**

Worksheet 3

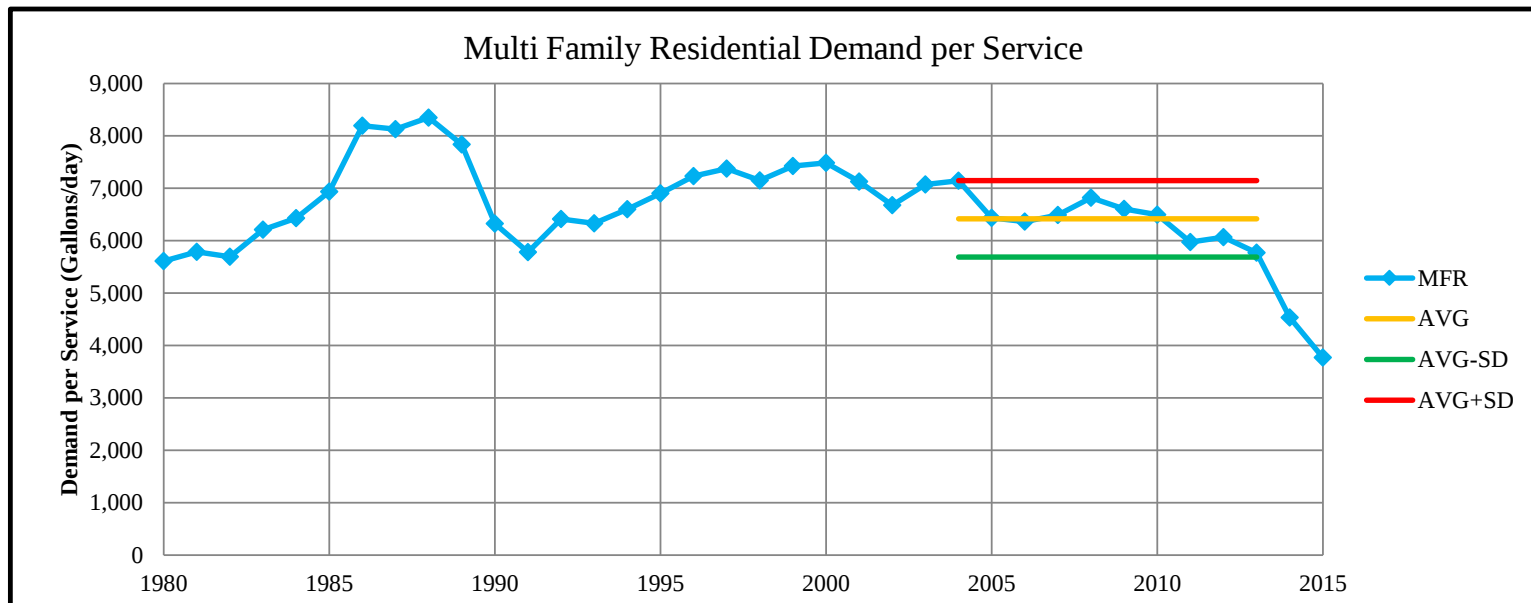
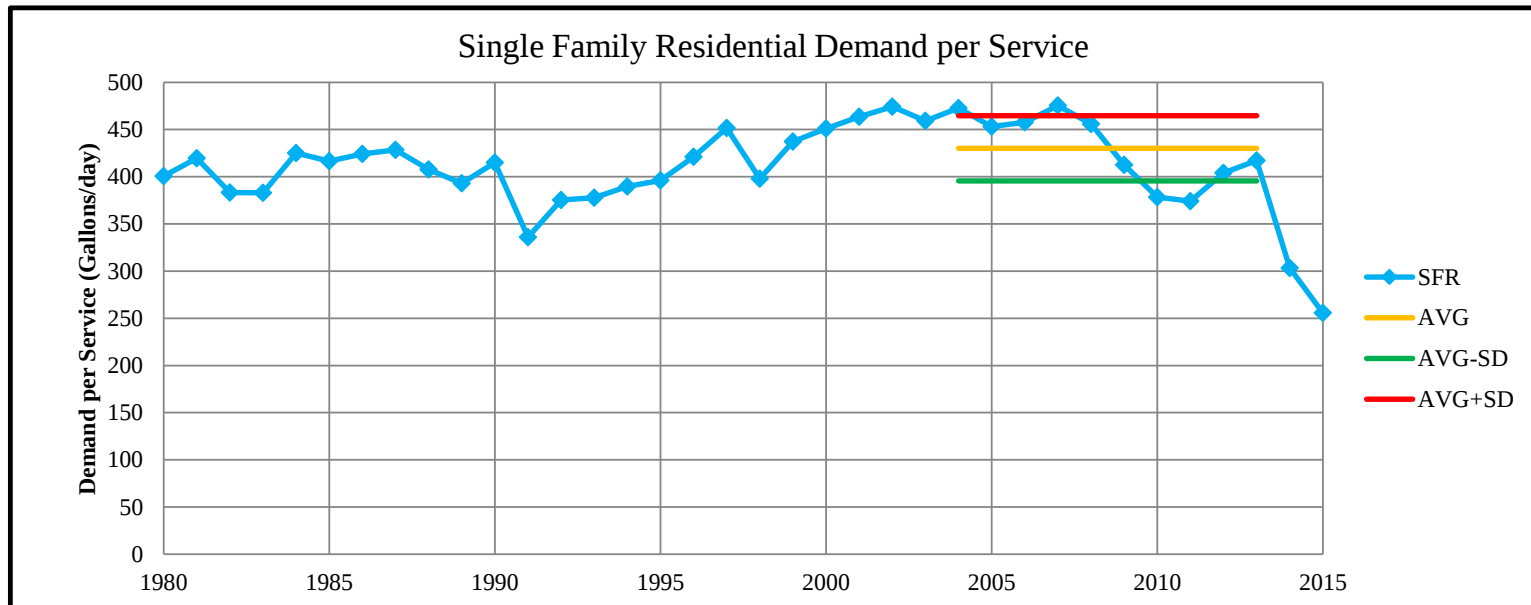
| Year | Single Family<br>(SFR) | Multi Family<br>(MFR) | Commercial<br>(COM) | Industrial<br>(IND) | Government<br>(GOV) | Other<br>(OTH) | Irrigation<br>(IRR) | Unaccounted<br>for Water<br>(UAFW) | Total Sales<br>(AF) | Total<br>Demand<br>(AF) | Total<br>Demand<br>(MGal) |
|------|------------------------|-----------------------|---------------------|---------------------|---------------------|----------------|---------------------|------------------------------------|---------------------|-------------------------|---------------------------|
| 1980 | 5,339                  | 283                   | 596                 | 6                   | 777                 | 5              | 0                   | -29                                | 7,006               | 6,977                   | 2,273                     |
| 1981 | 5,613                  | 292                   | 651                 | 5                   | 846                 | 9              | 0                   | -382                               | 7,416               | 7,034                   | 2,292                     |
| 1982 | 5,138                  | 287                   | 658                 | 6                   | 734                 | 6              | 0                   | 248                                | 6,829               | 7,078                   | 2,306                     |
| 1983 | 5,191                  | 313                   | 703                 | 6                   | 748                 | 5              | 0                   | 448                                | 6,966               | 7,413                   | 2,416                     |
| 1984 | 5,839                  | 323                   | 831                 | 12                  | 925                 | 9              | 0                   | 483                                | 7,939               | 8,422                   | 2,744                     |
| 1985 | 5,760                  | 358                   | 885                 | 5                   | 885                 | 20             | 0                   | 437                                | 7,914               | 8,350                   | 2,721                     |
| 1986 | 5,922                  | 428                   | 914                 | 5                   | 970                 | 20             | 0                   | 81                                 | 8,259               | 8,340                   | 2,717                     |
| 1987 | 6,037                  | 417                   | 1,027               | 6                   | 858                 | 10             | 0                   | 312                                | 8,355               | 8,667                   | 2,824                     |
| 1988 | 5,787                  | 421                   | 1,021               | 5                   | 891                 | 14             | 0                   | 494                                | 8,139               | 8,633                   | 2,813                     |
| 1989 | 5,662                  | 423                   | 1,059               | 7                   | 824                 | 18             | 0                   | 732                                | 7,993               | 8,725                   | 2,843                     |
| 1990 | 6,055                  | 506                   | 1,022               | 6                   | 911                 | 56             | 0                   | 30                                 | 8,557               | 8,587                   | 2,798                     |
| 1991 | 4,963                  | 486                   | 913                 | 4                   | 640                 | 75             | 0                   | -181                               | 7,081               | 6,899                   | 2,248                     |
| 1992 | 5,607                  | 541                   | 993                 | 9                   | 780                 | 48             | 0                   | 67                                 | 7,979               | 8,045                   | 2,622                     |
| 1993 | 5,715                  | 537                   | 993                 | 8                   | 781                 | 25             | 0                   | 117                                | 8,058               | 8,175                   | 2,664                     |
| 1994 | 5,982                  | 556                   | 990                 | 5                   | 749                 | 39             | 0                   | 433                                | 8,320               | 8,753                   | 2,852                     |
| 1995 | 6,176                  | 581                   | 983                 | 4                   | 815                 | 35             | 0                   | 757                                | 8,594               | 9,351                   | 3,047                     |
| 1996 | 6,714                  | 608                   | 1,069               | 7                   | 834                 | 28             | 0                   | 184                                | 9,260               | 9,444                   | 3,077                     |
| 1997 | 7,400                  | 620                   | 1,136               | 5                   | 910                 | 48             | 0                   | 407                                | 10,119              | 10,525                  | 3,430                     |
| 1998 | 6,670                  | 601                   | 1,014               | 5                   | 710                 | 26             | 0                   | 696                                | 9,025               | 9,721                   | 3,168                     |
| 1999 | 7,444                  | 624                   | 1,070               | 5                   | 846                 | 60             | 0                   | 742                                | 10,049              | 10,791                  | 3,516                     |
| 2000 | 7,731                  | 629                   | 1,132               | 3                   | 916                 | 63             | 0                   | 734                                | 10,473              | 11,207                  | 3,652                     |
| 2001 | 8,026                  | 599                   | 1,153               | 0                   | 900                 | 105            | 0                   | 77                                 | 10,784              | 10,861                  | 3,539                     |
| 2002 | 8,351                  | 561                   | 1,234               | 0                   | 967                 | 42             | 0                   | 319                                | 11,155              | 11,474                  | 3,739                     |
| 2003 | 8,106                  | 592                   | 1,221               | 0                   | 910                 | 46             | 0                   | 1,092                              | 10,874              | 11,967                  | 3,899                     |
| 2004 | 8,585                  | 600                   | 1,278               | 0                   | 948                 | 25             | 0                   | 1,119                              | 11,437              | 12,556                  | 4,091                     |
| 2005 | 8,355                  | 541                   | 1,308               | 0                   | 824                 | 21             | 0                   | 366                                | 11,049              | 11,416                  | 3,720                     |
| 2006 | 8,492                  | 535                   | 1,359               | 0                   | 864                 | 22             | 0                   | 783                                | 11,272              | 12,055                  | 3,928                     |
| 2007 | 8,837                  | 545                   | 1,426               | 0                   | 937                 | 32             | 25                  | 613                                | 11,804              | 12,417                  | 4,046                     |
| 2008 | 8,425                  | 577                   | 1,520               | 0                   | 1,039               | -5             | 19                  | 685                                | 11,576              | 12,260                  | 3,995                     |
| 2009 | 7,597                  | 561                   | 1,490               | 0                   | 993                 | 14             | 8                   | 351                                | 10,663              | 11,014                  | 3,589                     |
| 2010 | 7,001                  | 563                   | 1,391               | 0                   | 854                 | 8              | 9                   | 435                                | 9,825               | 10,260                  | 3,343                     |
| 2011 | 6,956                  | 555                   | 1,366               | 0                   | 910                 | 9              | 8                   | 491                                | 9,805               | 10,297                  | 3,355                     |
| 2012 | 7,525                  | 561                   | 1,499               | 0                   | 996                 | 9              | 15                  | 215                                | 10,604              | 10,819                  | 3,526                     |
| 2013 | 7,784                  | 542                   | 1,500               | 0                   | 1,040               | 13             | 16                  | 540                                | 10,894              | 11,434                  | 3,726                     |
| 2014 | 5,673                  | 445                   | 1,196               | 0                   | 686                 | 14             | 11                  | 242                                | 8,026               | 8,268                   | 2,694                     |
| 2015 | 4,803                  | 404                   | 1,050               | 0.0                 | 599                 | 8              | 6                   | -45                                | 6,870               | 6,824                   | 2,224                     |

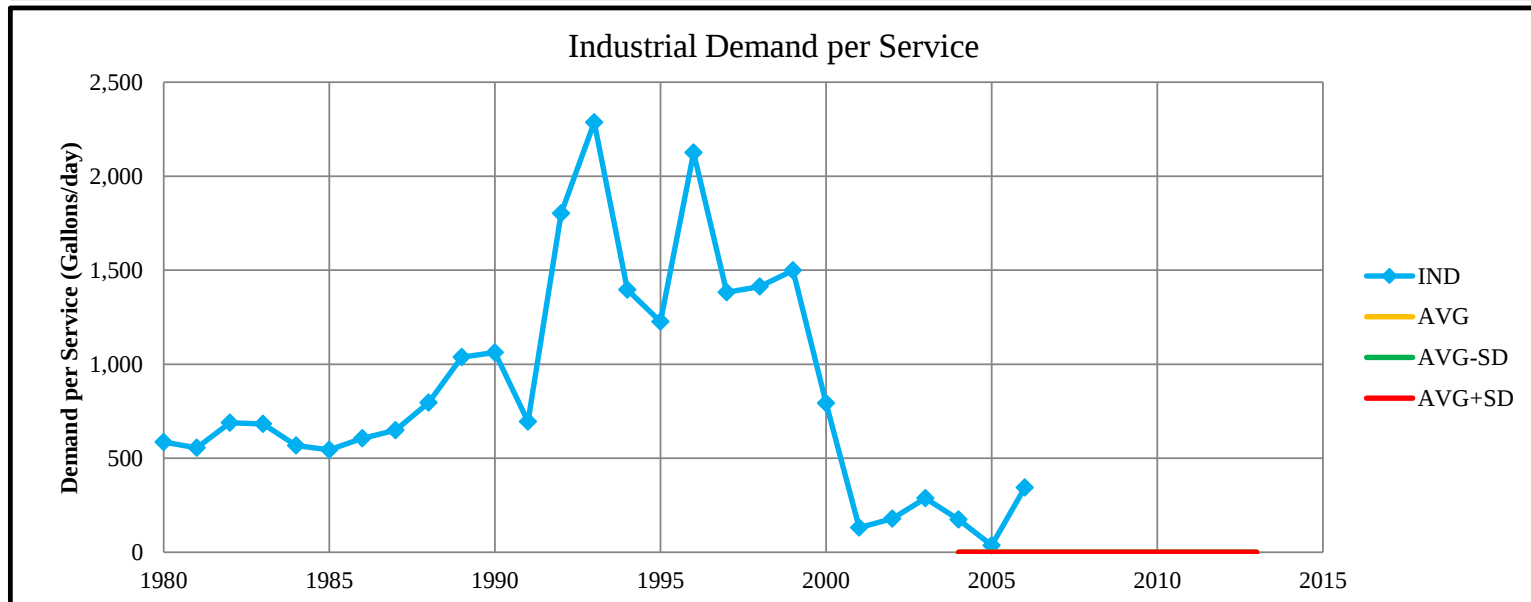
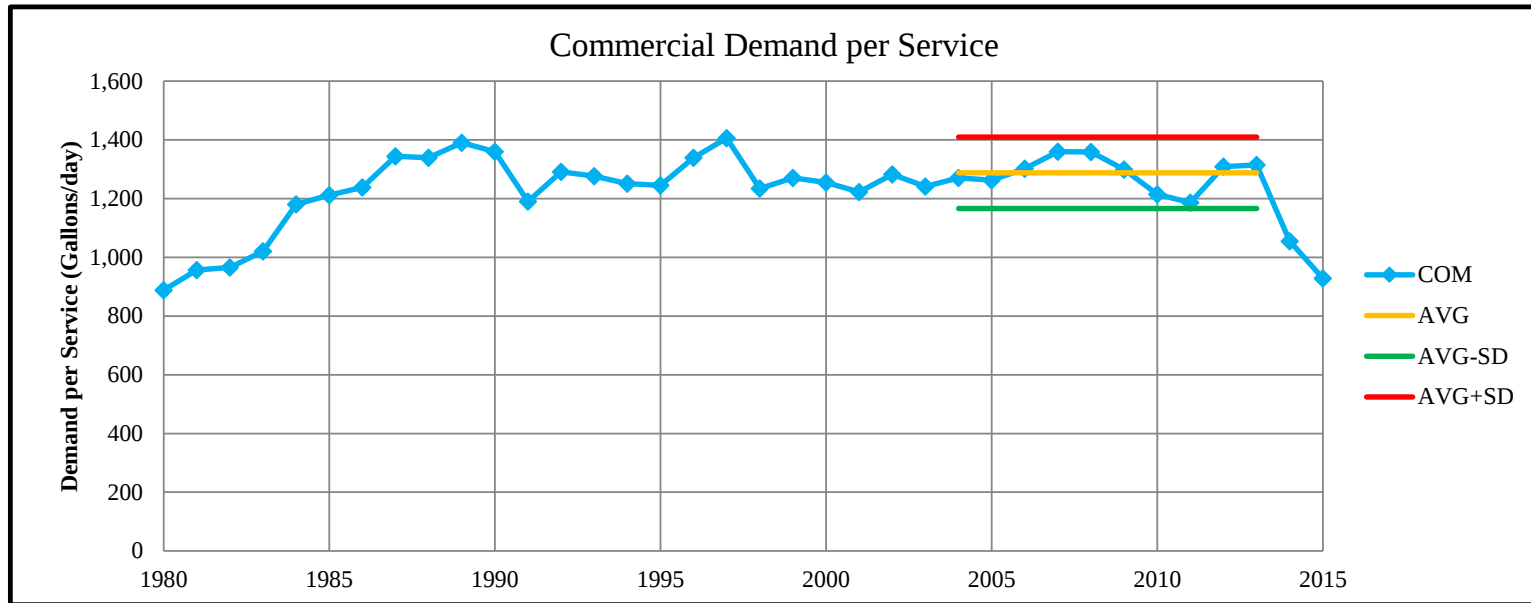
## Combined Demand per Service

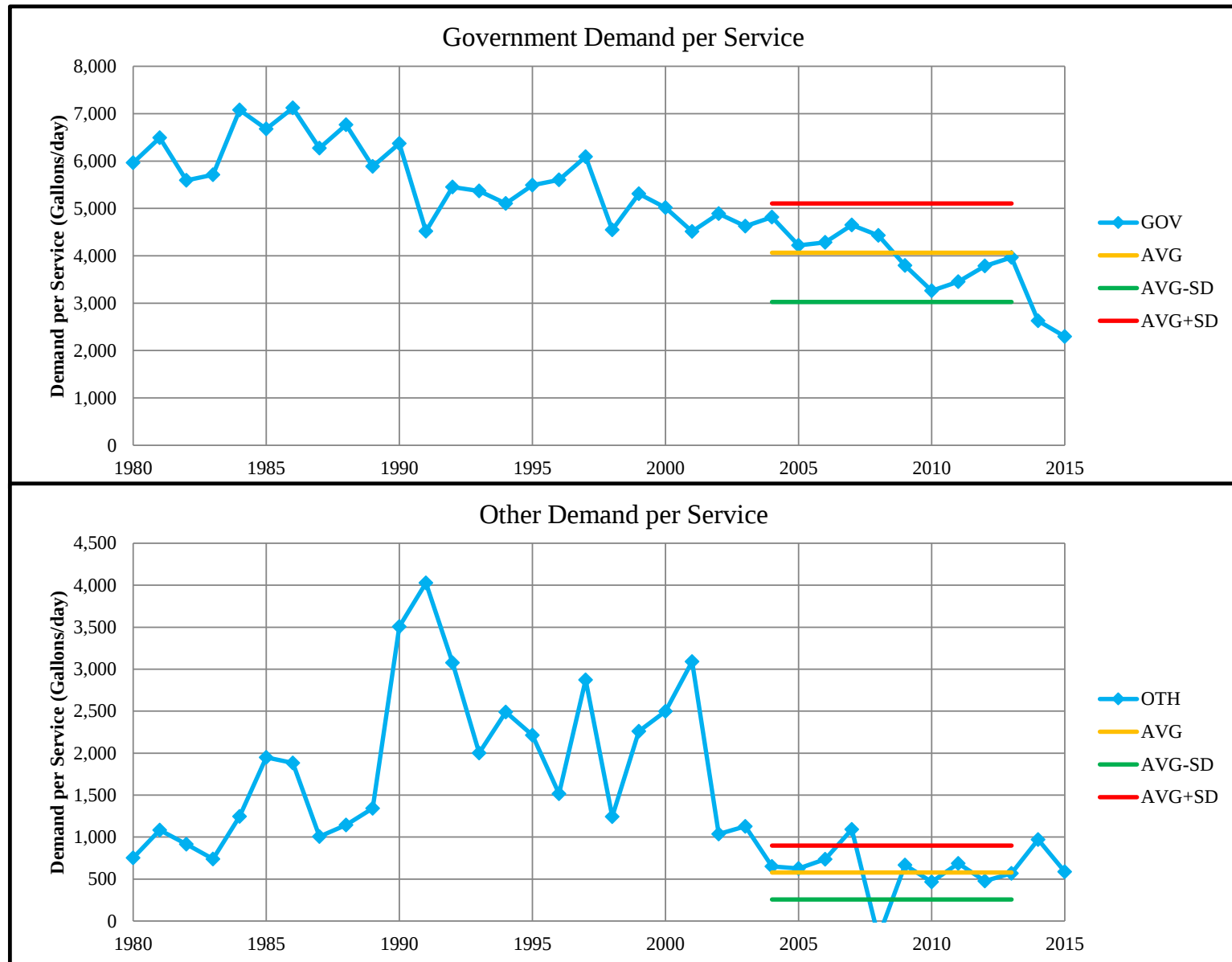


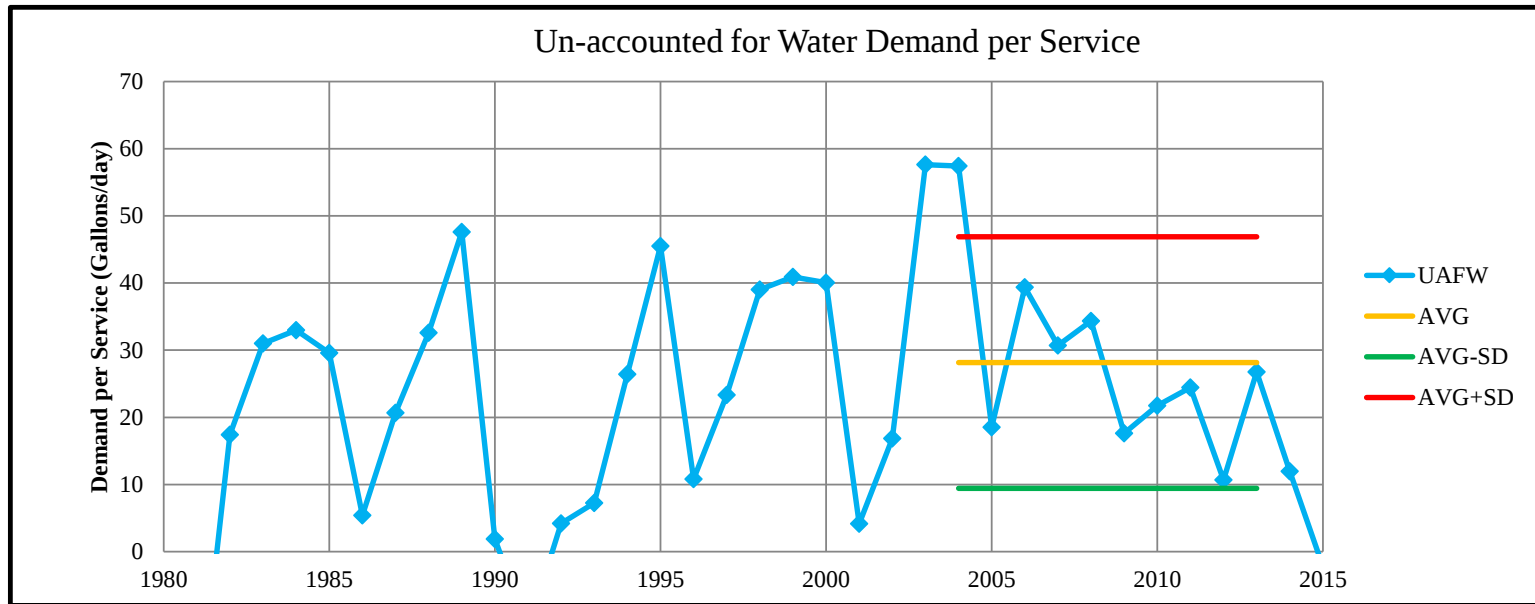
**California Water Service Company - Livermore District**  
**Water Supply and Demand Analysis and Projections**  
**Demand per Service (Gallons per Day)**

| Year      | SFR | MFR   | COM   | IND   | GOV   | OTH   | UAFW | Combined Demand/Serv |
|-----------|-----|-------|-------|-------|-------|-------|------|----------------------|
| 1980      | 401 | 5,612 | 888   | 586   | 5,965 | 754   | -2   | 492                  |
| 1981      | 420 | 5,789 | 956   | 556   | 6,490 | 1,084 | -27  | 494                  |
| 1982      | 383 | 5,693 | 965   | 689   | 5,590 | 914   | 17   | 495                  |
| 1983      | 383 | 6,212 | 1,020 | 682   | 5,708 | 740   | 31   | 513                  |
| 1984      | 425 | 6,429 | 1,180 | 568   | 7,076 | 1,247 | 33   | 575                  |
| 1985      | 417 | 6,938 | 1,212 | 544   | 6,676 | 1,948 | 30   | 566                  |
| 1986      | 424 | 8,195 | 1,238 | 606   | 7,119 | 1,883 | 5    | 559                  |
| 1987      | 428 | 8,129 | 1,344 | 648   | 6,271 | 1,007 | 21   | 575                  |
| 1988      | 408 | 8,350 | 1,339 | 797   | 6,763 | 1,145 | 33   | 569                  |
| 1989      | 393 | 7,838 | 1,390 | 1,037 | 5,886 | 1,344 | 48   | 567                  |
| 1990      | 415 | 6,324 | 1,360 | 1,062 | 6,370 | 3,506 | 2    | 551                  |
| 1991      | 336 | 5,781 | 1,190 | 695   | 4,517 | 4,027 | -11  | 437                  |
| 1992      | 375 | 6,412 | 1,291 | 1,802 | 5,452 | 3,078 | 4    | 504                  |
| 1993      | 378 | 6,329 | 1,276 | 2,287 | 5,365 | 2,001 | 7    | 506                  |
| 1994      | 390 | 6,600 | 1,251 | 1,396 | 5,104 | 2,489 | 26   | 534                  |
| 1995      | 396 | 6,901 | 1,245 | 1,226 | 5,491 | 2,214 | 46   | 562                  |
| 1996      | 421 | 7,235 | 1,339 | 2,125 | 5,603 | 1,517 | 11   | 556                  |
| 1997      | 452 | 7,375 | 1,406 | 1,383 | 6,091 | 2,873 | 23   | 603                  |
| 1998      | 398 | 7,150 | 1,234 | 1,413 | 4,546 | 1,243 | 39   | 545                  |
| 1999      | 437 | 7,424 | 1,270 | 1,498 | 5,307 | 2,260 | 41   | 595                  |
| 2000      | 451 | 7,485 | 1,255 | 792   | 5,017 | 2,498 | 40   | 611                  |
| 2001      | 463 | 7,126 | 1,222 | 131   | 4,515 | 3,091 | 4    | 584                  |
| 2002      | 474 | 6,676 | 1,282 | 178   | 4,886 | 1,037 | 17   | 607                  |
| 2003      | 459 | 7,076 | 1,241 | 287   | 4,627 | 1,127 | 58   | 631                  |
| 2004      | 473 | 7,142 | 1,271 | 174   | 4,815 | 649   | 57   | 644                  |
| 2005      | 453 | 6,435 | 1,262 | 37    | 4,218 | 625   | 19   | 577                  |
| 2006      | 458 | 6,366 | 1,302 | 344   | 4,281 | 736   | 39   | 606                  |
| 2007      | 475 | 6,493 | 1,359 |       | 4,649 | 1,091 | 31   | 622                  |
| 2008      | 456 | 6,820 | 1,359 |       | 4,431 | -190  | 34   | 615                  |
| 2009      | 412 | 6,607 | 1,299 |       | 3,792 | 667   | 18   | 553                  |
| 2010      | 378 | 6,498 | 1,214 |       | 3,261 | 467   | 22   | 513                  |
| 2011      | 374 | 5,975 | 1,186 |       | 3,451 | 686   | 24   | 512                  |
| 2012      | 404 | 6,066 | 1,309 |       | 3,783 | 477   | 11   | 537                  |
| 2013      | 417 | 5,773 | 1,315 |       | 3,963 | 568   | 27   | 567                  |
| 2014      | 303 | 4,535 | 1,055 |       | 2,626 | 971   | 12   | 409                  |
| 2015      | 256 | 3,769 | 928   |       | 2,297 | 586   | -2   | 336                  |
| 10-yr AVG | 430 | 6,417 | 1,288 |       | 4,065 | 578   | 28   | 574                  |
| SD        | 35  | 730   | 122   |       | 1,039 | 321   | 19   | 48                   |









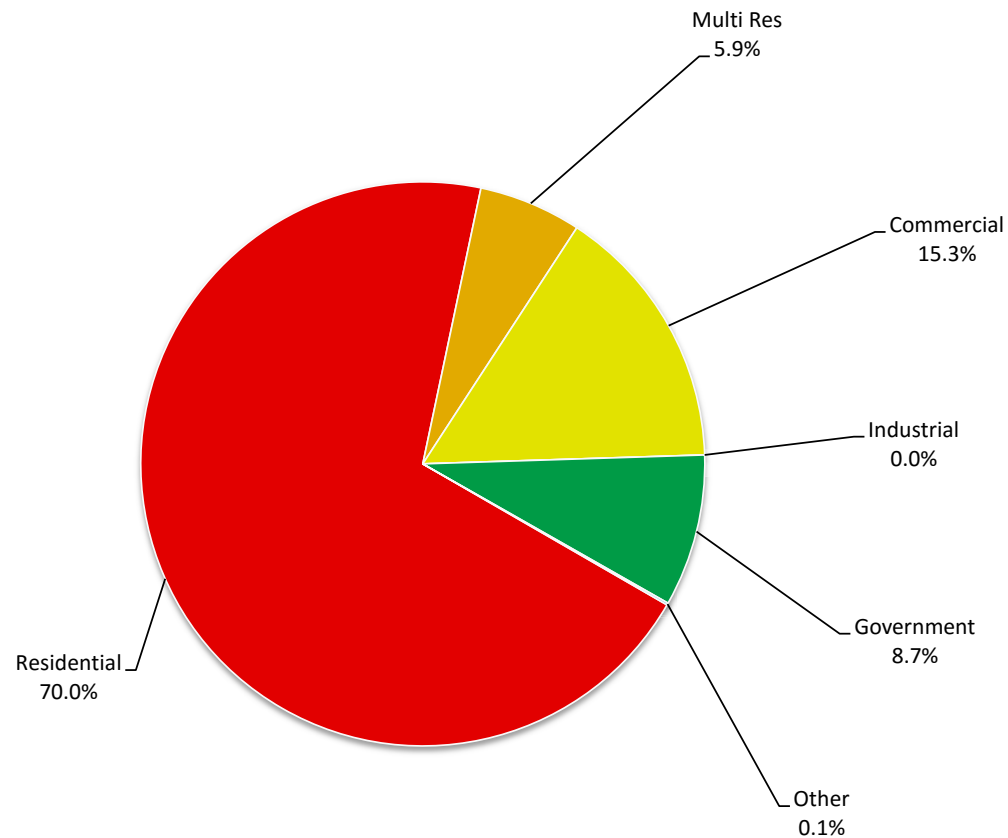
**California Water Service Company - Livermore District**  
**Water Supply and Demand Analysis and Projections**  
**Percentage Change in Annual Demand**

Worksheet 5

| Year | Residential | Multi Res | Commercial | Industrial | Government | Other    | Unaccounted | Total   |
|------|-------------|-----------|------------|------------|------------|----------|-------------|---------|
| 1981 | 5.13%       | 3.17%     | 9.36%      | -9.62%     | 8.81%      | 58.58%   | 1204.30%    | 5.85%   |
| 1982 | -8.47%      | -1.66%    | 1.04%      | 17.78%     | -13.19%    | -28.39%  | -165.10%    | -7.91%  |
| 1983 | 1.04%       | 9.11%     | 6.74%      | -1.04%     | 1.83%      | -15.77%  | 80.18%      | 2.00%   |
| 1984 | 12.48%      | 3.30%     | 18.27%     | 93.39%     | 23.69%     | 75.20%   | 7.90%       | 13.97%  |
| 1985 | -1.35%      | 10.72%    | 6.52%      | -58.74%    | -4.25%     | 113.61%  | -9.61%      | -0.32%  |
| 1986 | 2.81%       | 19.60%    | 3.27%      | 11.30%     | 9.50%      | -0.65%   | -81.50%     | 4.36%   |
| 1987 | 1.94%       | -2.57%    | 12.39%     | 2.58%      | -11.49%    | -49.41%  | 285.63%     | 1.17%   |
| 1988 | -4.15%      | 0.85%     | -0.64%     | -3.84%     | 3.88%      | 38.56%   | 58.59%      | -2.59%  |
| 1989 | -2.15%      | 0.47%     | 3.74%      | 30.23%     | -7.54%     | 29.32%   | 48.16%      | -1.79%  |
| 1990 | 6.94%       | 19.77%    | -3.45%     | -14.69%    | 10.53%     | 218.27%  | -95.95%     | 7.06%   |
| 1991 | -18.04%     | -4.10%    | -10.74%    | -34.54%    | -29.69%    | 32.87%   | -711.08%    | -17.26% |
| 1992 | 12.97%      | 11.40%    | 8.85%      | 133.25%    | 21.82%     | -36.24%  | -136.84%    | 12.68%  |
| 1993 | 1.92%       | -0.75%    | -0.07%     | -15.39%    | 0.08%      | -48.30%  | 74.99%      | 0.99%   |
| 1994 | 4.67%       | 3.48%     | -0.24%     | -38.96%    | -4.02%     | 56.40%   | 270.10%     | 3.26%   |
| 1995 | 3.25%       | 4.55%     | -0.77%     | -12.19%    | 8.75%      | -9.42%   | 74.88%      | 3.29%   |
| 1996 | 8.71%       | 4.61%     | 8.78%      | 73.41%     | 2.29%      | -20.12%  | -75.70%     | 7.75%   |
| 1997 | 10.21%      | 1.93%     | 6.30%      | -34.94%    | 9.20%      | 71.11%   | 121.16%     | 9.27%   |
| 1998 | -9.87%      | -3.04%    | -10.79%    | 2.17%      | -22.01%    | -45.55%  | 71.17%      | -10.81% |
| 1999 | 11.61%      | 3.82%     | 5.58%      | 6.04%      | 19.18%     | 131.25%  | 6.58%       | 11.35%  |
| 2000 | 3.85%       | 0.83%     | 5.76%      | -47.10%    | 8.20%      | 4.74%    | -1.07%      | 4.21%   |
| 2001 | 3.82%       | -4.80%    | 1.92%      | -87.16%    | -1.67%     | 66.34%   | -89.49%     | 2.97%   |
| 2002 | 4.04%       | -6.31%    | 6.98%      | -17.45%    | 7.47%      | -59.88%  | 312.83%     | 3.44%   |
| 2003 | -2.93%      | 5.51%     | -1.08%     | 13.82%     | -5.98%     | 10.45%   | 242.89%     | -2.52%  |
| 2004 | 5.92%       | 1.39%     | 4.70%      | -39.29%    | 4.22%      | -46.05%  | 2.50%       | 5.17%   |
| 2005 | -2.69%      | -9.90%    | 2.38%      | -78.82%    | -13.07%    | -14.70%  | -67.27%     | -3.39%  |
| 2006 | 1.64%       | -1.08%    | 3.87%      | 833.33%    | 4.86%      | 0.97%    | 113.84%     | 2.02%   |
| 2007 | 4.07%       | 2.00%     | 4.96%      | -100.00%   | 8.49%      | 49.31%   | -21.81%     | 4.72%   |
| 2008 | -4.66%      | 5.74%     | 6.55%      |            | 10.87%     | -114.85% | 11.75%      | -1.93%  |
| 2009 | -9.84%      | -2.70%    | -1.97%     |            | -4.45%     | -386.55% | -48.70%     | -7.89%  |
| 2010 | -7.85%      | 0.30%     | -6.66%     |            | -14.00%    | -44.28%  | 23.79%      | -7.85%  |
| 2011 | -0.63%      | -1.32%    | -1.75%     |            | 6.54%      | 22.44%   | 13.03%      | -0.20%  |
| 2012 | 8.17%       | 1.02%     | 9.71%      |            | 9.46%      | -7.54%   | -56.24%     | 8.15%   |
| 2013 | 3.44%       | -3.48%    | 0.06%      |            | 4.46%      | 44.83%   | 151.13%     | 2.74%   |
| 2014 | -27.12%     | -17.76%   | -20.23%    |            | -34.03%    | 12.97%   | -55.23%     | -26.33% |
| 2015 | -15.34%     | -9.24%    | -12.25%    |            | -12.71%    | -46.19%  | -118.76%    | -14.41% |

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### Percent of Total Sales by Type of Use (2015)

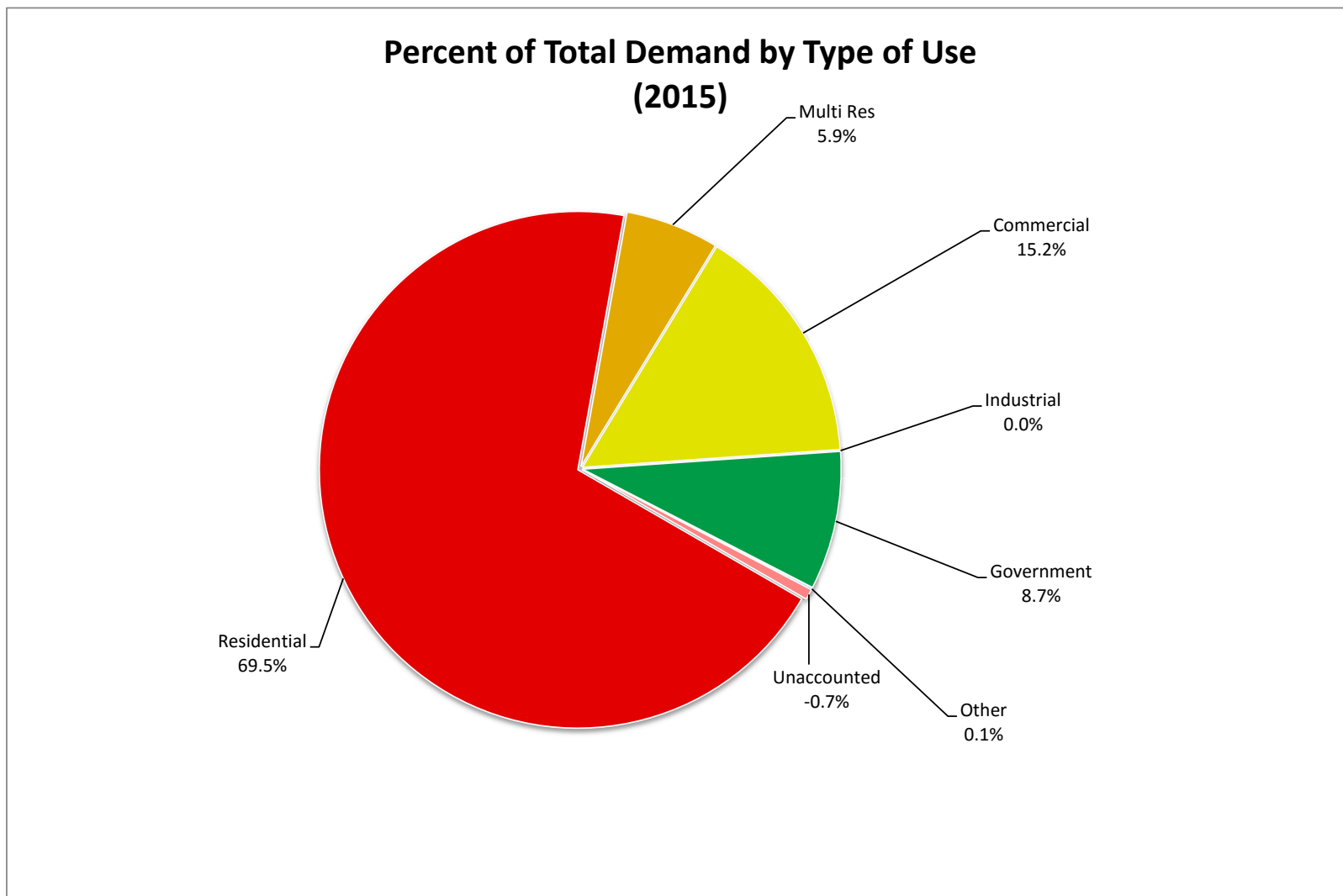


**California Water Service Company - Livermore District**

Worksheet 6

**Water Supply and Demand Analysis and Projections****Percentage of Total Sales**

| Year | Residential | Multi Res | Commercial | Industrial | Government | Other  | Percent Total |
|------|-------------|-----------|------------|------------|------------|--------|---------------|
| 1980 | 76.21%      | 4.04%     | 8.50%      | 0.08%      | 11.09%     | 0.08%  | 100.00%       |
| 1981 | 75.69%      | 3.93%     | 8.78%      | 0.07%      | 11.40%     | 0.12%  | 100.00%       |
| 1982 | 75.23%      | 4.20%     | 9.64%      | 0.09%      | 10.75%     | 0.09%  | 100.00%       |
| 1983 | 74.52%      | 4.50%     | 10.09%     | 0.09%      | 10.73%     | 0.08%  | 100.00%       |
| 1984 | 73.55%      | 4.07%     | 10.47%     | 0.15%      | 11.65%     | 0.12%  | 100.00%       |
| 1985 | 72.79%      | 4.53%     | 11.19%     | 0.06%      | 11.19%     | 0.25%  | 100.00%       |
| 1986 | 71.70%      | 5.19%     | 11.07%     | 0.07%      | 11.74%     | 0.24%  | 100.00%       |
| 1987 | 72.25%      | 5.00%     | 12.30%     | 0.07%      | 10.27%     | 0.12%  | 100.00%       |
| 1988 | 71.10%      | 5.17%     | 12.54%     | 0.07%      | 10.95%     | 0.17%  | 100.00%       |
| 1989 | 70.84%      | 5.29%     | 13.25%     | 0.09%      | 10.31%     | 0.22%  | 100.00%       |
| 1990 | 70.76%      | 5.92%     | 11.95%     | 0.07%      | 10.65%     | 0.66%  | 100.00%       |
| 1991 | 70.10%      | 6.86%     | 12.89%     | 0.05%      | 9.05%      | 1.06%  | 100.00%       |
| 1992 | 70.28%      | 6.78%     | 12.45%     | 0.11%      | 9.78%      | 0.60%  | 100.00%       |
| 1993 | 70.92%      | 6.66%     | 12.32%     | 0.10%      | 9.69%      | 0.31%  | 100.00%       |
| 1994 | 71.89%      | 6.68%     | 11.90%     | 0.06%      | 9.01%      | 0.46%  | 100.00%       |
| 1995 | 71.87%      | 6.76%     | 11.43%     | 0.05%      | 9.48%      | 0.41%  | 100.00%       |
| 1996 | 72.51%      | 6.56%     | 11.54%     | 0.08%      | 9.00%      | 0.30%  | 100.00%       |
| 1997 | 73.13%      | 6.12%     | 11.23%     | 0.05%      | 9.00%      | 0.47%  | 100.00%       |
| 1998 | 73.90%      | 6.66%     | 11.23%     | 0.05%      | 7.87%      | 0.29%  | 100.00%       |
| 1999 | 74.08%      | 6.21%     | 10.65%     | 0.05%      | 8.42%      | 0.60%  | 100.00%       |
| 2000 | 73.82%      | 6.00%     | 10.81%     | 0.03%      | 8.74%      | 0.60%  | 100.00%       |
| 2001 | 74.43%      | 5.55%     | 10.70%     | 0.00%      | 8.35%      | 0.97%  | 100.00%       |
| 2002 | 74.86%      | 5.03%     | 11.06%     | 0.00%      | 8.67%      | 0.38%  | 100.00%       |
| 2003 | 74.54%      | 5.44%     | 11.22%     | 0.00%      | 8.36%      | 0.43%  | 100.00%       |
| 2004 | 75.07%      | 5.25%     | 11.17%     | 0.00%      | 8.29%      | 0.22%  | 100.00%       |
| 2005 | 75.61%      | 4.89%     | 11.84%     | 0.00%      | 7.46%      | 0.19%  | 100.00%       |
| 2006 | 75.34%      | 4.74%     | 12.06%     | 0.00%      | 7.67%      | 0.19%  | 100.00%       |
| 2007 | 74.87%      | 4.62%     | 12.08%     | 0.00%      | 7.94%      | 0.27%  | 100.00%       |
| 2008 | 72.79%      | 4.98%     | 13.13%     | 0.00%      | 8.98%      | -0.04% | 100.00%       |
| 2009 | 71.25%      | 5.26%     | 13.97%     | 0.00%      | 9.31%      | 0.13%  | 100.00%       |
| 2010 | 71.25%      | 5.73%     | 14.16%     | 0.00%      | 8.69%      | 0.08%  | 100.00%       |
| 2011 | 70.95%      | 5.67%     | 13.94%     | 0.00%      | 9.28%      | 0.10%  | 100.00%       |
| 2012 | 70.96%      | 5.29%     | 14.14%     | 0.00%      | 9.39%      | 0.08%  | 100.00%       |
| 2013 | 71.45%      | 4.97%     | 13.77%     | 0.00%      | 9.55%      | 0.11%  | 100.00%       |
| 2014 | 70.68%      | 5.55%     | 14.91%     | 0.00%      | 8.55%      | 0.18%  | 100.00%       |
| 2015 | 69.92%      | 5.88%     | 15.28%     | 0.00%      | 8.72%      | 0.11%  | 100.00%       |

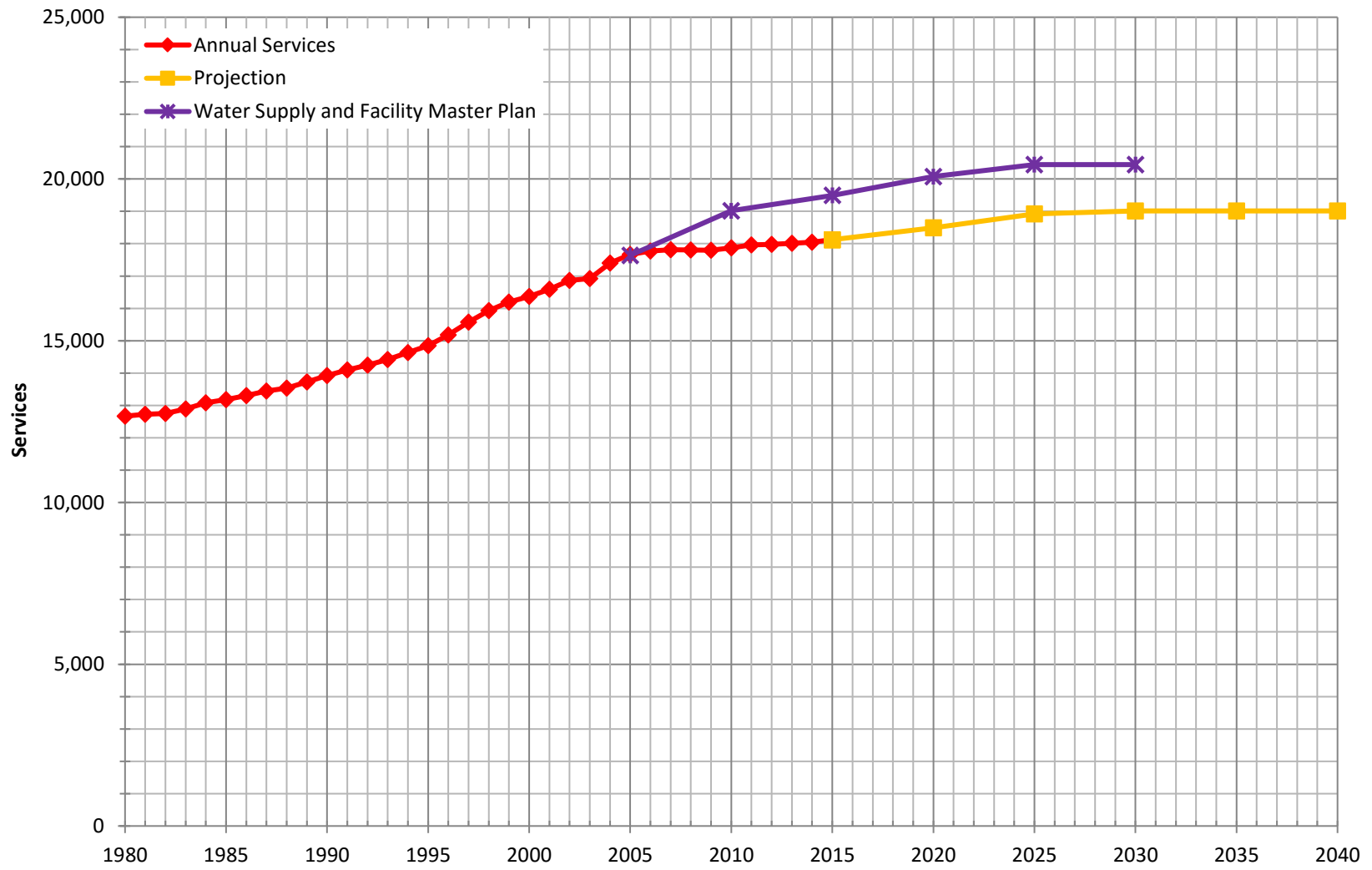


**California Water Service Company - Livermore District**  
**Water Supply and Demand Analysis and Projections**  
**Percentage of Total Demand**

Worksheet 7

| Year | Residential | Multi Res | Commercial | Industrial | Government | Other  | Unaccounted | Percent Total |
|------|-------------|-----------|------------|------------|------------|--------|-------------|---------------|
| 1980 | 76.53%      | 4.05%     | 8.54%      | 0.08%      | 11.14%     | 0.08%  | -0.42%      | 100.00%       |
| 1981 | 79.80%      | 4.15%     | 9.26%      | 0.07%      | 12.02%     | 0.12%  | -5.43%      | 100.00%       |
| 1982 | 72.59%      | 4.05%     | 9.30%      | 0.09%      | 10.37%     | 0.09%  | 3.51%       | 100.00%       |
| 1983 | 70.02%      | 4.22%     | 9.48%      | 0.08%      | 10.08%     | 0.07%  | 6.04%       | 100.00%       |
| 1984 | 69.33%      | 3.84%     | 9.87%      | 0.14%      | 10.98%     | 0.11%  | 5.74%       | 100.00%       |
| 1985 | 68.98%      | 4.29%     | 10.60%     | 0.06%      | 10.60%     | 0.24%  | 5.23%       | 100.00%       |
| 1986 | 71.01%      | 5.14%     | 10.96%     | 0.07%      | 11.63%     | 0.23%  | 0.97%       | 100.00%       |
| 1987 | 69.66%      | 4.82%     | 11.85%     | 0.06%      | 9.90%      | 0.11%  | 3.59%       | 100.00%       |
| 1988 | 67.03%      | 4.88%     | 11.82%     | 0.06%      | 10.33%     | 0.16%  | 5.72%       | 100.00%       |
| 1989 | 64.90%      | 4.85%     | 12.14%     | 0.08%      | 9.45%      | 0.20%  | 8.39%       | 100.00%       |
| 1990 | 70.52%      | 5.90%     | 11.91%     | 0.07%      | 10.61%     | 0.66%  | 0.35%       | 100.00%       |
| 1991 | 71.94%      | 7.04%     | 13.23%     | 0.06%      | 9.28%      | 1.08%  | -2.63%      | 100.00%       |
| 1992 | 69.69%      | 6.73%     | 12.35%     | 0.11%      | 9.70%      | 0.59%  | 0.83%       | 100.00%       |
| 1993 | 69.91%      | 6.57%     | 12.14%     | 0.09%      | 9.55%      | 0.30%  | 1.43%       | 100.00%       |
| 1994 | 68.34%      | 6.35%     | 11.31%     | 0.05%      | 8.56%      | 0.44%  | 4.94%       | 100.00%       |
| 1995 | 66.05%      | 6.21%     | 10.51%     | 0.04%      | 8.72%      | 0.37%  | 8.09%       | 100.00%       |
| 1996 | 71.10%      | 6.44%     | 11.32%     | 0.08%      | 8.83%      | 0.30%  | 1.95%       | 100.00%       |
| 1997 | 70.31%      | 5.89%     | 10.80%     | 0.04%      | 8.65%      | 0.45%  | 3.86%       | 100.00%       |
| 1998 | 68.61%      | 6.18%     | 10.43%     | 0.05%      | 7.30%      | 0.27%  | 7.16%       | 100.00%       |
| 1999 | 68.98%      | 5.78%     | 9.92%      | 0.05%      | 7.84%      | 0.56%  | 6.88%       | 100.00%       |
| 2000 | 68.98%      | 5.61%     | 10.10%     | 0.02%      | 8.17%      | 0.56%  | 6.55%       | 100.00%       |
| 2001 | 73.90%      | 5.51%     | 10.62%     | 0.00%      | 8.29%      | 0.96%  | 0.71%       | 100.00%       |
| 2002 | 72.78%      | 4.89%     | 10.75%     | 0.00%      | 8.43%      | 0.37%  | 2.78%       | 100.00%       |
| 2003 | 67.74%      | 4.95%     | 10.20%     | 0.00%      | 7.60%      | 0.39%  | 9.13%       | 100.00%       |
| 2004 | 68.38%      | 4.78%     | 10.18%     | 0.00%      | 7.55%      | 0.20%  | 8.92%       | 100.00%       |
| 2005 | 73.19%      | 4.74%     | 11.46%     | 0.00%      | 7.22%      | 0.19%  | 3.21%       | 100.00%       |
| 2006 | 70.44%      | 4.44%     | 11.27%     | 0.00%      | 7.17%      | 0.18%  | 6.50%       | 100.00%       |
| 2007 | 71.17%      | 4.39%     | 11.49%     | 0.00%      | 7.55%      | 0.26%  | 4.93%       | 100.00%       |
| 2008 | 68.72%      | 4.70%     | 12.40%     | 0.00%      | 8.48%      | -0.04% | 5.58%       | 100.00%       |
| 2009 | 68.97%      | 5.10%     | 13.53%     | 0.00%      | 9.02%      | 0.12%  | 3.19%       | 100.00%       |
| 2010 | 68.23%      | 5.49%     | 13.56%     | 0.00%      | 8.32%      | 0.07%  | 4.24%       | 100.00%       |
| 2011 | 67.56%      | 5.39%     | 13.27%     | 0.00%      | 8.84%      | 0.09%  | 4.77%       | 100.00%       |
| 2012 | 69.55%      | 5.19%     | 13.86%     | 0.00%      | 9.20%      | 0.08%  | 1.99%       | 100.00%       |
| 2013 | 68.08%      | 4.74%     | 13.12%     | 0.00%      | 9.10%      | 0.11%  | 4.72%       | 100.00%       |
| 2014 | 68.62%      | 5.39%     | 14.47%     | 0.00%      | 8.30%      | 0.17%  | 2.92%       | 100.00%       |
| 2015 | 70.38%      | 5.92%     | 15.38%     | 0.00%      | 8.78%      | 0.11%  | -0.66%      | 100.00%       |

## Historical & Projected Services



**California Water Service Company - Livermore District**  
**Water Supply and Demand Analysis and Projections**  
**Actual & Projected Annual Average Services**

Worksheet 8

| Customer Category |                               | Selected Trend   | Growth Rate | Actual Services |        |        | Base Year<br>2015 | Projected Services |        |        |        |        |        |
|-------------------|-------------------------------|------------------|-------------|-----------------|--------|--------|-------------------|--------------------|--------|--------|--------|--------|--------|
|                   |                               |                  |             | 2000            | 2005   | 2010   |                   | 2015               | 2020   | 2025   | 2030   | 2035   | 2040   |
| SFR               | SFR_E                         | Master Plan      | 0.14%       | 15,300          | 16,457 | 16,521 | 16,773            | 16,773             | 16,892 | 17,012 | 17,036 | 17,036 | 17,036 |
| MFR               | MFR_E                         | Master Plan      | 5.00%       | 75              | 75     | 77     | 96                | 96                 | 122    | 156    | 164    | 164    | 164    |
| COM               | COM_E                         | Master Plan      | 3.99%       | 805             | 925    | 1,022  | 1,010             | 1,010              | 1,228  | 1,493  | 1,553  | 1,553  | 1,553  |
| IND               | IND_A                         | Zero Growth Rate | 0.00%       | 3               | 1      | 0      | 0                 | 0                  | 0      | 0      | 0      | 0      | 0      |
| GOV               | GOV_E                         | Master Plan      | 0.22%       | 163             | 174    | 234    | 233               | 233                | 235    | 238    | 239    | 239    | 239    |
| OTH               | OTH_E                         | Master Plan      | 5.55%       | 23              | 31     | 15     | 12                | 12                 | 15     | 20     | 21     | 21     | 21     |
| TOTAL             | Average growth rate 2011-2040 |                  | 0.19%       | 16,369          | 17,663 | 17,869 | 18,123            | 18,123             | 18,493 | 18,919 | 19,012 | 19,012 | 19,012 |

Notes: Rate adjusted to reflect service count in Master Plan

|     |        |
|-----|--------|
| SFR | 0.142% |
| MFR | 5.000% |
| COM | 3.990% |
| IND | 7.000% |
| GOV | 0.220% |
| OTH | 5.550% |

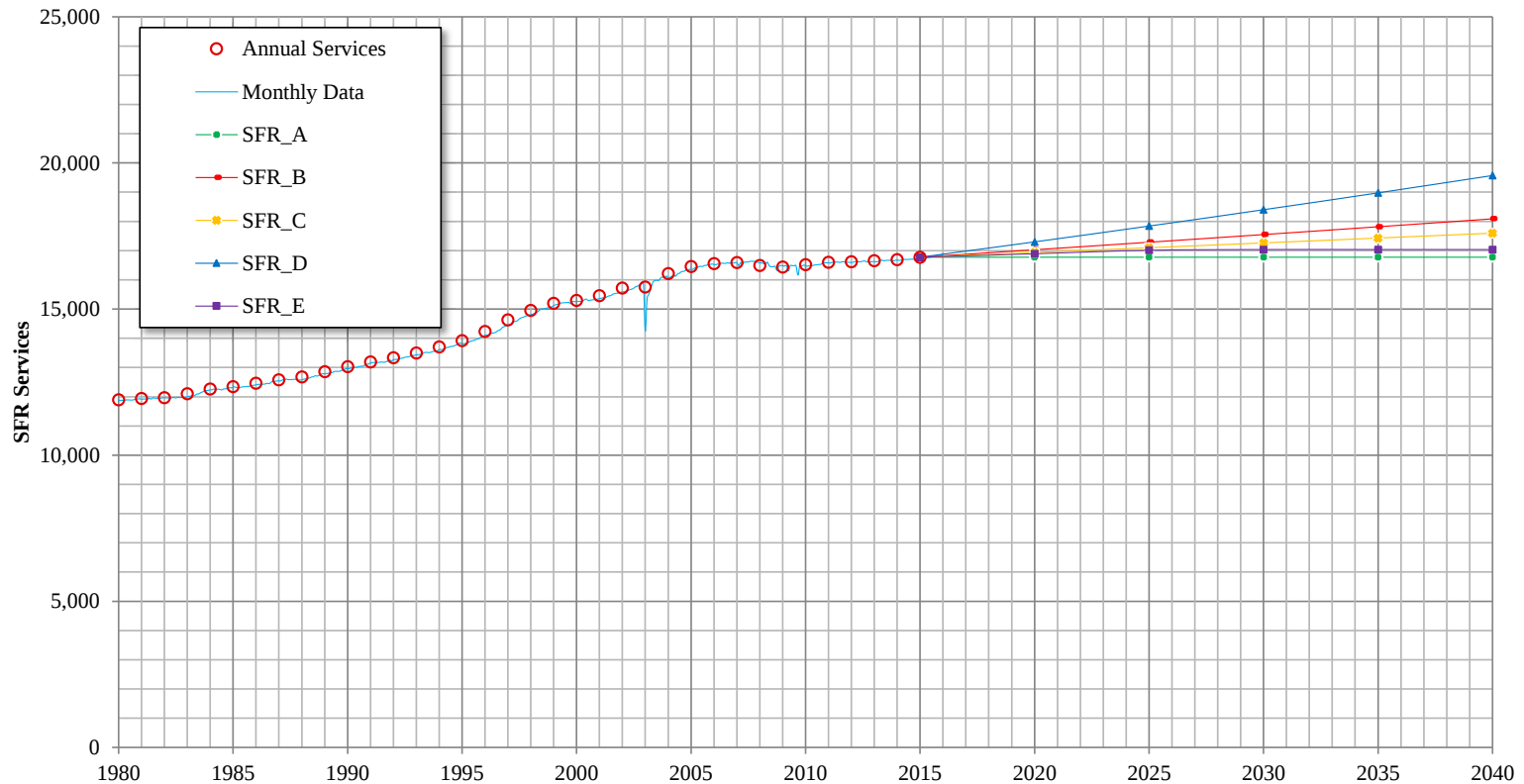
Growth rate assumed after 2025 buildout 0.000%

# California Water Service Company - Livermore District

Worksheet 8a

## Water Supply and Demand Analysis and Projections

### SFR Historical & Projected Services



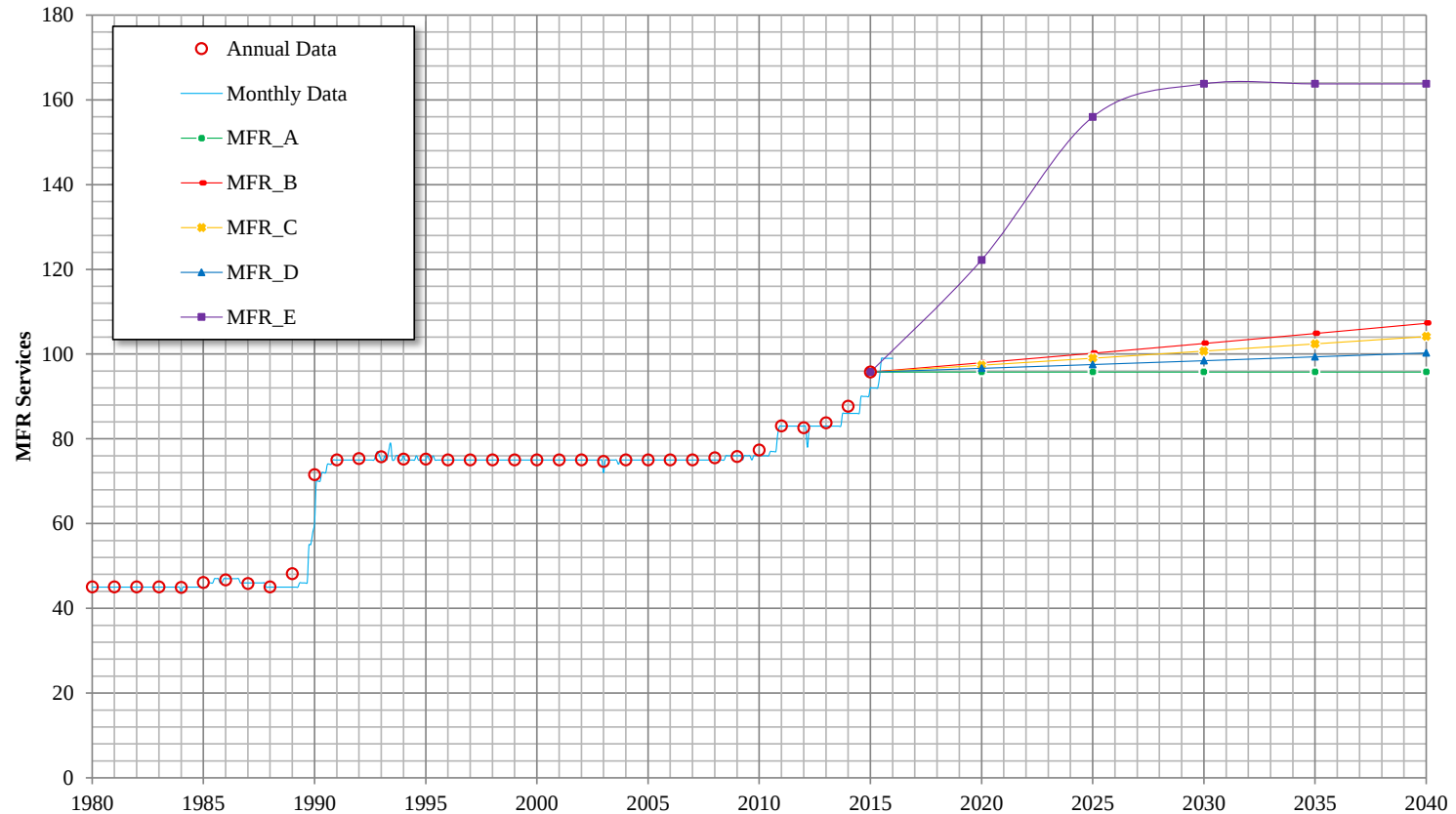
| Customer Category | Trend |       |                  | Growth Rate | Actual |        |        | Base Year<br>2015 | Projected     |               |               |               |               |               |
|-------------------|-------|-------|------------------|-------------|--------|--------|--------|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                   |       |       |                  |             | 2000   | 2005   | 2010   |                   | Services 2015 | Services 2020 | Services 2025 | Services 2030 | Services 2035 | Services 2040 |
| SFR               |       | SFR_A | Zero Growth Rate | 0.00%       | 15,300 | 16,457 | 16,521 | 16,773            | 16,773        | 16,773        | 16,773        | 16,773        | 16,773        | 16,773        |
|                   |       | SFR_B | 5 Yr. Avg.       | 0.30%       |        |        |        | 16,773            | 16,773        | 17,028        | 17,287        | 17,549        | 17,816        | 18,087        |
|                   |       | SFR_C | 10 Yr. Avg.      | 0.19%       |        |        |        | 16,773            | 16,773        | 16,935        | 17,098        | 17,263        | 17,429        | 17,597        |
|                   |       | SFR_D | 15 Yr. Avg.      | 0.62%       |        |        |        | 16,773            | 16,773        | 17,299        | 17,840        | 18,399        | 18,975        | 19,570        |
|                   | >     | SFR_E | Master Plan      | 0.14%       |        |        |        | 16,773            | 16,773        | 16,892        | 17,012        | 17,036        | 17,036        | 17,036        |

# California Water Service Company - Livermore District

Worksheet 8b

## Water Supply and Demand Analysis and Projections

### MFR Historical & Projected Services



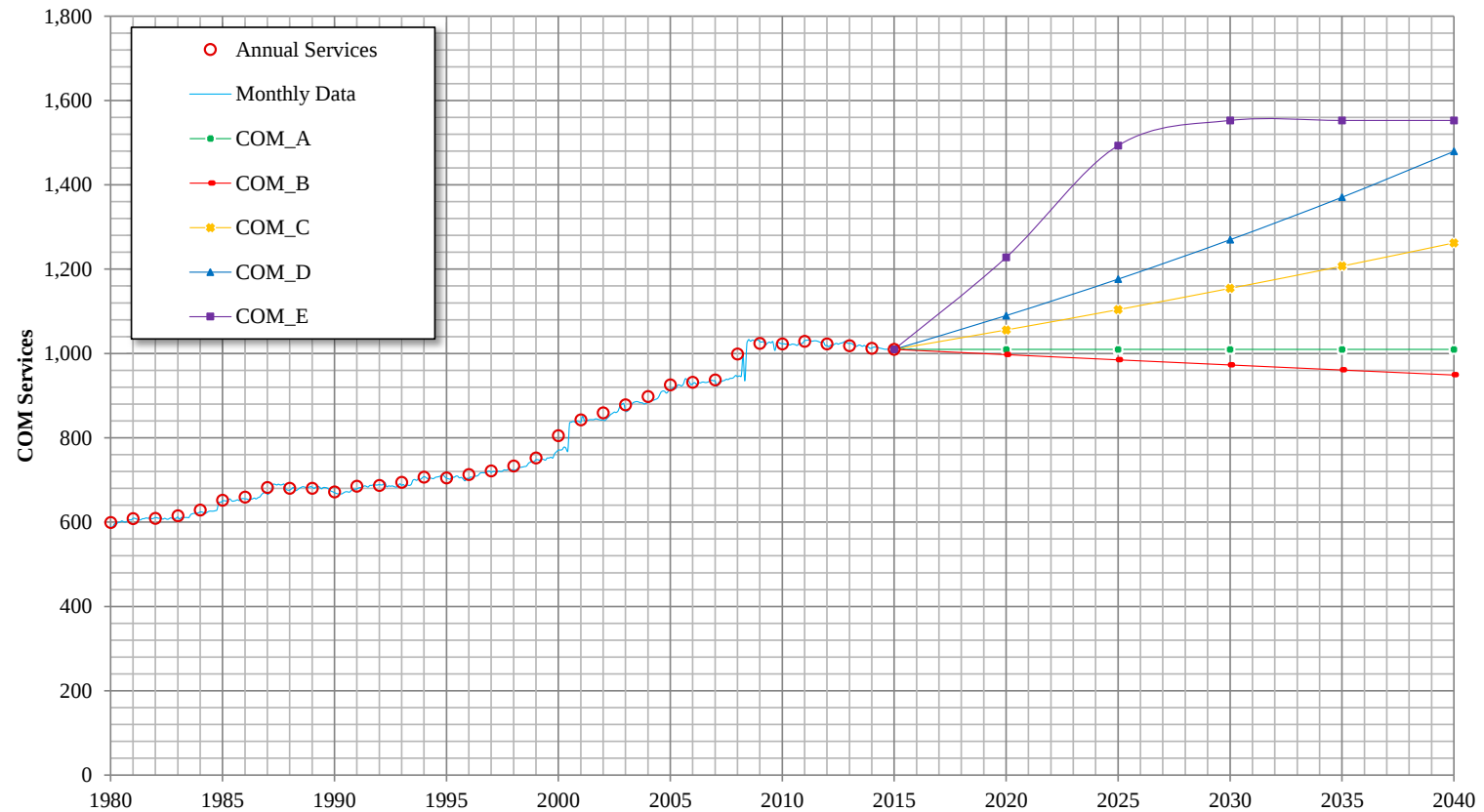
| Customer Category | Trend |       |                  | Growth Rate | Actual |      |      | Base Year 2015 | Projected     |               |               |               |               |               |
|-------------------|-------|-------|------------------|-------------|--------|------|------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                   |       |       |                  |             | 2000   | 2005 | 2010 |                | Services 2015 | Services 2020 | Services 2025 | Services 2030 | Services 2035 | Services 2040 |
| MFR               |       | MFR_A | Zero Growth Rate | 0.00%       | 75     | 75   | 77   | 96             | 96            | 96            | 96            | 96            | 96            | 96            |
|                   |       | MFR_B | 5 Yr. Avg.       | 0.46%       |        |      |      | 96             | 96            | 98            | 100           | 102           | 105           | 107           |
|                   |       | MFR_C | 10 Yr. Avg.      | 0.34%       |        |      |      | 96             | 96            | 97            | 99            | 101           | 102           | 104           |
|                   |       | MFR_D | 15 Yr. Avg.      | 0.18%       |        |      |      | 96             | 96            | 97            | 98            | 98            | 99            | 100           |
|                   | >     | MFR_E | Master Plan      | 5.00%       |        |      |      | 96             | 96            | 122           | 156           | 164           | 164           | 164           |

# California Water Service Company - Livermore District

Worksheet 8c

## Water Supply and Demand Analysis and Projections

### COM Historical & Projected Services



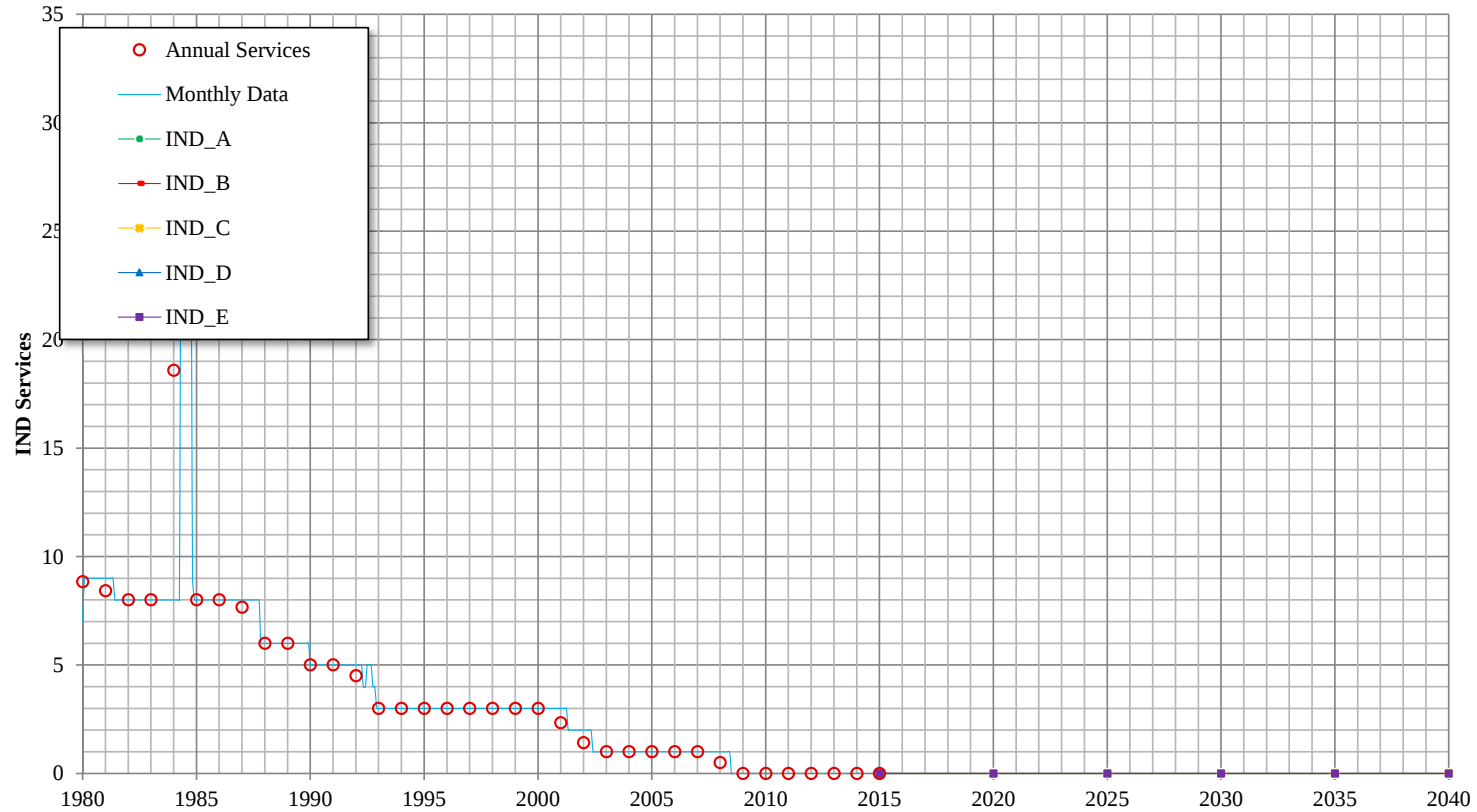
| Customer Category | Trend |       |                  | Growth Rate | Actual |      |       | Base Year 2015 | Projected     |               |               |               |               |               |
|-------------------|-------|-------|------------------|-------------|--------|------|-------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                   |       |       |                  |             | 2000   | 2005 | 2010  |                | Services 2015 | Services 2020 | Services 2025 | Services 2030 | Services 2035 | Services 2040 |
| COM               |       | COM_A | Zero Growth Rate | 0.00%       | 805    | 925  | 1,022 | 1,010          | 1,010         | 1,010         | 1,010         | 1,010         | 1,010         | 1,010         |
|                   |       | COM_B | 5 Yr. Avg.       | -0.25%      |        |      |       | 1,010          | 1,010         | 997           | 985           | 973           | 961           | 949           |
|                   |       | COM_C | 10 Yr. Avg.      | 0.90%       |        |      |       | 1,010          | 1,010         | 1,056         | 1,104         | 1,154         | 1,207         | 1,262         |
|                   |       | COM_D | 15 Yr. Avg.      | 1.54%       |        |      |       | 1,010          | 1,010         | 1,090         | 1,176         | 1,270         | 1,370         | 1,479         |
|                   | >     | COM_E | Master Plan      | 3.99%       |        |      |       | 1,010          | 1,010         | 1,228         | 1,493         | 1,553         | 1,553         | 1,553         |

# California Water Service Company - Livermore District

Worksheet 8d

## Water Supply and Demand Analysis and Projections

### IND Historical & Projected Services



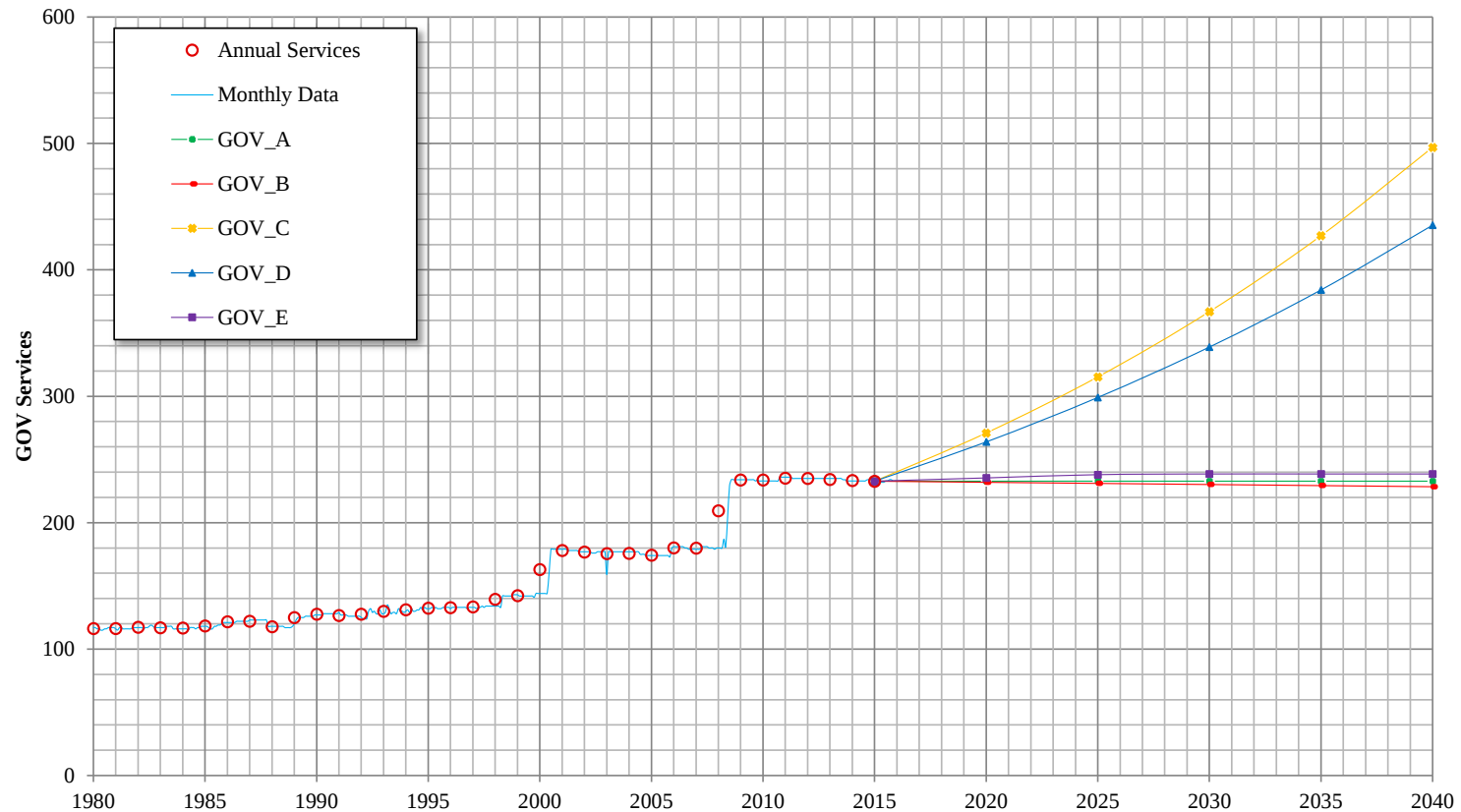
| Customer Category | Trend |       |                  | Growth Rate | Actual |      |      | Base Year 2015 | Projected     |               |               |               |               |               |
|-------------------|-------|-------|------------------|-------------|--------|------|------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                   |       |       |                  |             | 2000   | 2005 | 2010 |                | Services 2015 | Services 2020 | Services 2025 | Services 2030 | Services 2035 | Services 2040 |
| IND               |       |       |                  |             | 3      | 1    | 0    | 0              |               |               |               |               |               |               |
|                   | >     | IND_A | Zero Growth Rate | 0.00%       |        |      |      | 0              | 0             | 0             | 0             | 0             | 0             | 0             |
|                   |       | IND_B | Zero Growth Rate | 0.00%       |        |      |      | 0              | 0             | 0             | 0             | 0             | 0             | 0             |
|                   |       | IND_C | Zero Growth Rate | 0.00%       |        |      |      | 0              | 0             | 0             | 0             | 0             | 0             | 0             |
|                   |       | IND_D | Zero Growth Rate | 0.00%       |        |      |      | 0              | 0             | 0             | 0             | 0             | 0             | 0             |
|                   |       | IND_E | Zero Growth Rate | 0.00%       |        |      |      | 0              | 0             | 0             | 0             | 0             | 0             | 0             |

# California Water Service Company - Livermore District

Worksheet 8e

## Water Supply and Demand Analysis and Projections

### GOV Historical & Projected Services



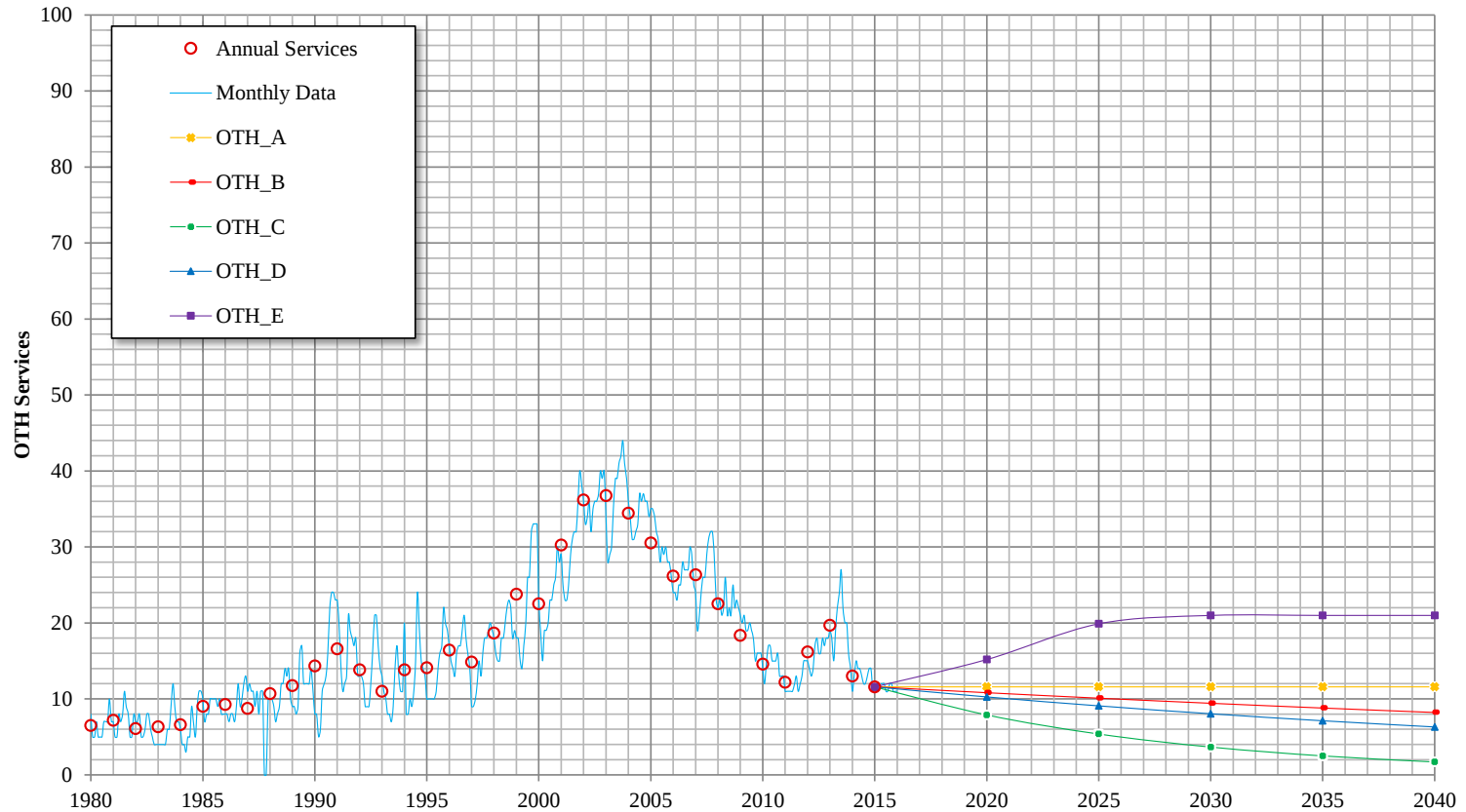
| Customer Category | Trend |       |                  | Growth Rate | Actual |      |      | Base Year 2015 | Projected     |               |               |               |               |               |
|-------------------|-------|-------|------------------|-------------|--------|------|------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                   |       |       |                  |             | 2000   | 2005 | 2010 |                | Services 2015 | Services 2020 | Services 2025 | Services 2030 | Services 2035 | Services 2040 |
| GOV               |       |       |                  |             | 163    | 174  | 234  | 233            |               |               |               |               |               |               |
|                   |       | GOV_A | Zero Growth Rate | 0.00%       |        |      |      | 233            | 233           | 233           | 233           | 233           | 233           | 233           |
|                   |       | GOV_B | 5 Yr. Avg.       | -0.08%      |        |      |      | 233            | 233           | 232           | 231           | 230           | 229           | 228           |
|                   |       | GOV_C | 10 Yr. Avg.      | 3.08%       |        |      |      | 233            | 233           | 271           | 315           | 367           | 427           | 497           |
|                   |       | GOV_D | 15 Yr. Avg.      | 2.53%       |        |      |      | 233            | 233           | 264           | 299           | 339           | 384           | 435           |
|                   | >     | GOV_E | Master Plan      | 0.22%       |        |      |      | 233            | 233           | 235           | 238           | 239           | 239           | 239           |

# California Water Service Company - Livermore District

## Water Supply and Demand Analysis and Projections

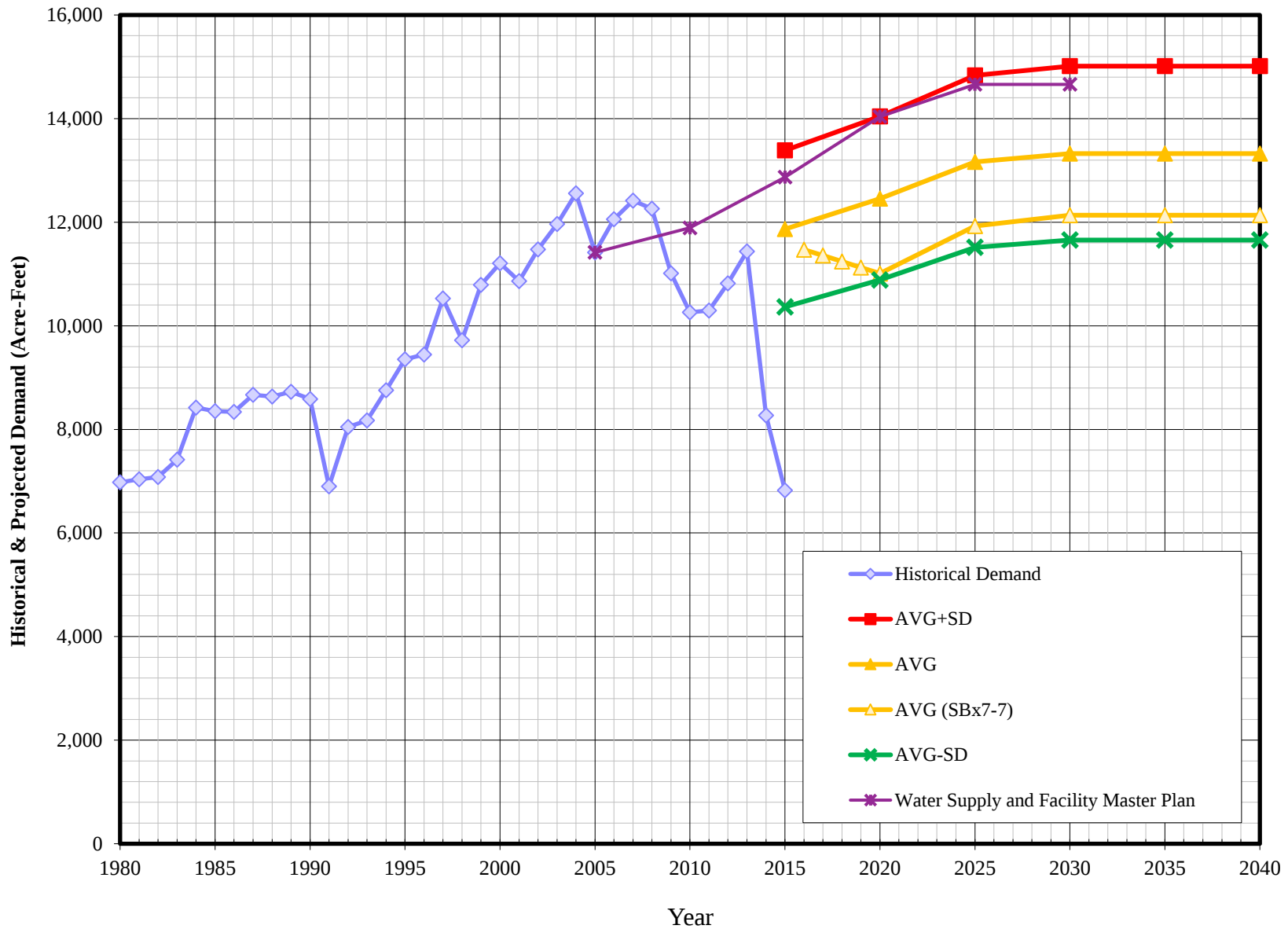
### OTH Historical & Projected Services

Worksheet 8f



| Customer Category | Trend |       |                  | Growth Rate | Actual |      |      | Base Year 2015 | Projected     |               |               |               |               |               |
|-------------------|-------|-------|------------------|-------------|--------|------|------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                   |       |       |                  |             | 2000   | 2005 | 2010 |                | Services 2015 | Services 2020 | Services 2025 | Services 2030 | Services 2035 | Services 2040 |
| OTH               |       | OTH_A | Zero Growth Rate | 0.00%       | 23     | 31   | 15   | 12             | 12            | 12            | 12            | 12            | 12            | 12            |
|                   |       | OTH_B | 5 Yr. Avg.       | -1.37%      |        |      |      | 12             | 12            | 11            | 10            | 9             | 9             | 8             |
|                   |       | OTH_C | 10 Yr. Avg.      | -7.39%      |        |      |      | 12             | 12            | 8             | 5             | 4             | 2             | 2             |
|                   |       | OTH_D | 15 Yr. Avg.      | -2.40%      |        |      |      | 12             | 12            | 10            | 9             | 8             | 7             | 6             |
|                   | >     | OTH_E | Master Plan      | 5.55%       |        |      |      | 12             | 12            | 15            | 20            | 21            | 21            | 21            |
|                   |       |       |                  |             |        |      |      |                |               |               |               |               |               |               |

# Historical & Projected Demand (LIV)

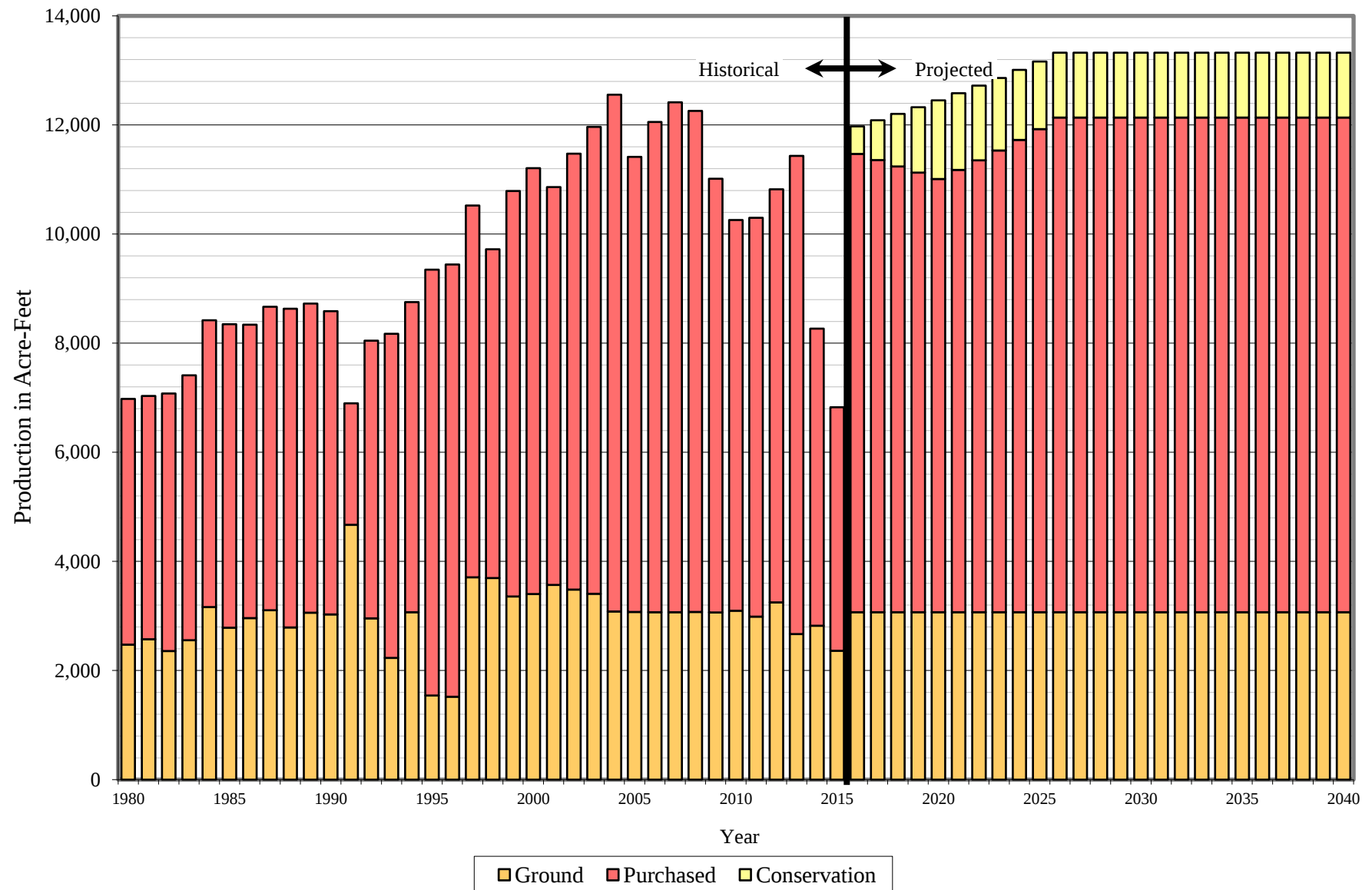


**California Water Service Company - Livermore District**  
**Water Supply and Demand Analysis and Projections**  
**Actual & Projected Demand in Acre-Feet**

Worksheet 9

| Customer Category | Actual Demand (AFY) |       |       |       |        |        |        |        | Projected Demand (AFY) |        |        |        |        |        |
|-------------------|---------------------|-------|-------|-------|--------|--------|--------|--------|------------------------|--------|--------|--------|--------|--------|
|                   | 1980                | 1985  | 1990  | 1995  | 2000   | 2005   | 2010   | 2015   | 2015                   | 2020   | 2025   | 2030   | 2035   | 2040   |
| SFR               | 5,339               | 5,760 | 6,055 | 6,176 | 7,731  | 8,355  | 7,001  | 7,525  | 8,730                  | 8,792  | 8,855  | 8,867  | 8,867  | 8,867  |
|                   |                     |       |       |       |        |        |        |        | 8,082                  | 8,139  | 8,197  | 8,208  | 8,208  | 8,208  |
|                   |                     |       |       |       |        |        |        |        | 7,452                  | 7,505  | 7,558  | 7,569  | 7,569  | 7,569  |
| MFR               | 283                 | 358   | 506   | 581   | 629    | 541    | 563    | 555    | 767                    | 978    | 1,249  | 1,311  | 1,311  | 1,311  |
|                   |                     |       |       |       |        |        |        |        | 688                    | 878    | 1,121  | 1,177  | 1,177  | 1,177  |
|                   |                     |       |       |       |        |        |        |        | 610                    | 779    | 994    | 1,043  | 1,043  | 1,043  |
| COM               | 596                 | 885   | 1,022 | 983   | 1,132  | 1,308  | 1,391  | 1,366  | 1,594                  | 1,938  | 2,357  | 2,451  | 2,451  | 2,451  |
|                   |                     |       |       |       |        |        |        |        | 1,456                  | 1,771  | 2,154  | 2,240  | 2,240  | 2,240  |
|                   |                     |       |       |       |        |        |        |        | 1,319                  | 1,604  | 1,950  | 2,028  | 2,028  | 2,028  |
| IND               | 6                   | 5     | 6     | 4     | 3      | 0      | 0      | 0      | 0                      | 0      | 0      | 0      | 0      | 0      |
|                   |                     |       |       |       |        |        |        |        | 0                      | 0      | 0      | 0      | 0      | 0      |
|                   |                     |       |       |       |        |        |        |        | 0                      | 0      | 0      | 0      | 0      | 0      |
| GOV               | 777                 | 885   | 911   | 815   | 916    | 824    | 854    | 910    | 1,331                  | 1,346  | 1,361  | 1,364  | 1,364  | 1,364  |
|                   |                     |       |       |       |        |        |        |        | 1,060                  | 1,072  | 1,084  | 1,086  | 1,086  | 1,086  |
|                   |                     |       |       |       |        |        |        |        | 789                    | 798    | 807    | 808    | 808    | 808    |
| OTH               | 5                   | 20    | 56    | 35    | 63     | 21     | 8      | 9      | 12                     | 15     | 20     | 21     | 21     | 21     |
|                   |                     |       |       |       |        |        |        |        | 7                      | 10     | 13     | 14     | 14     | 14     |
|                   |                     |       |       |       |        |        |        |        | 3                      | 4      | 6      | 6      | 6      | 6      |
| UAWF              | -29                 | 437   | 30    | 757   | 734    | 366    | 435    | 491    | 952                    | 971    | 994    | 998    | 998    | 998    |
|                   |                     |       |       |       |        |        |        |        | 572                    | 583    | 597    | 600    | 600    | 600    |
|                   |                     |       |       |       |        |        |        |        | 191                    | 195    | 200    | 201    | 201    | 201    |
| TOTAL (AFY)       | 6,977               | 8,350 | 8,587 | 9,351 | 11,207 | 11,416 | 10,251 | 10,858 | 13,385                 | 14,041 | 14,834 | 15,012 | 15,012 | 15,012 |
|                   |                     |       |       |       |        |        |        |        | 11,865                 | 12,453 | 13,165 | 13,324 | 13,324 | 13,324 |
|                   |                     |       |       |       |        |        |        |        | 10,364                 | 10,884 | 11,514 | 11,655 | 11,655 | 11,655 |
| TOTAL (MGD)       | 6.23                | 7.45  | 7.67  | 8.35  | 10.00  | 10.19  | 9.15   | 9.69   | 11.95                  | 12.53  | 13.24  | 13.40  | 13.40  | 13.40  |
|                   |                     |       |       |       |        |        |        |        | 10.59                  | 11.12  | 11.75  | 11.90  | 11.90  | 11.90  |
|                   |                     |       |       |       |        |        |        |        | 9.25                   | 9.72   | 10.28  | 10.41  | 10.41  | 10.41  |

# Historical and Projected Distribution of Demand by Source



**California Water Service Company - Livermore District**  
**Water Supply and Demand Analysis and Projections**  
**Historical and Projected Distribution of Demand by Source**

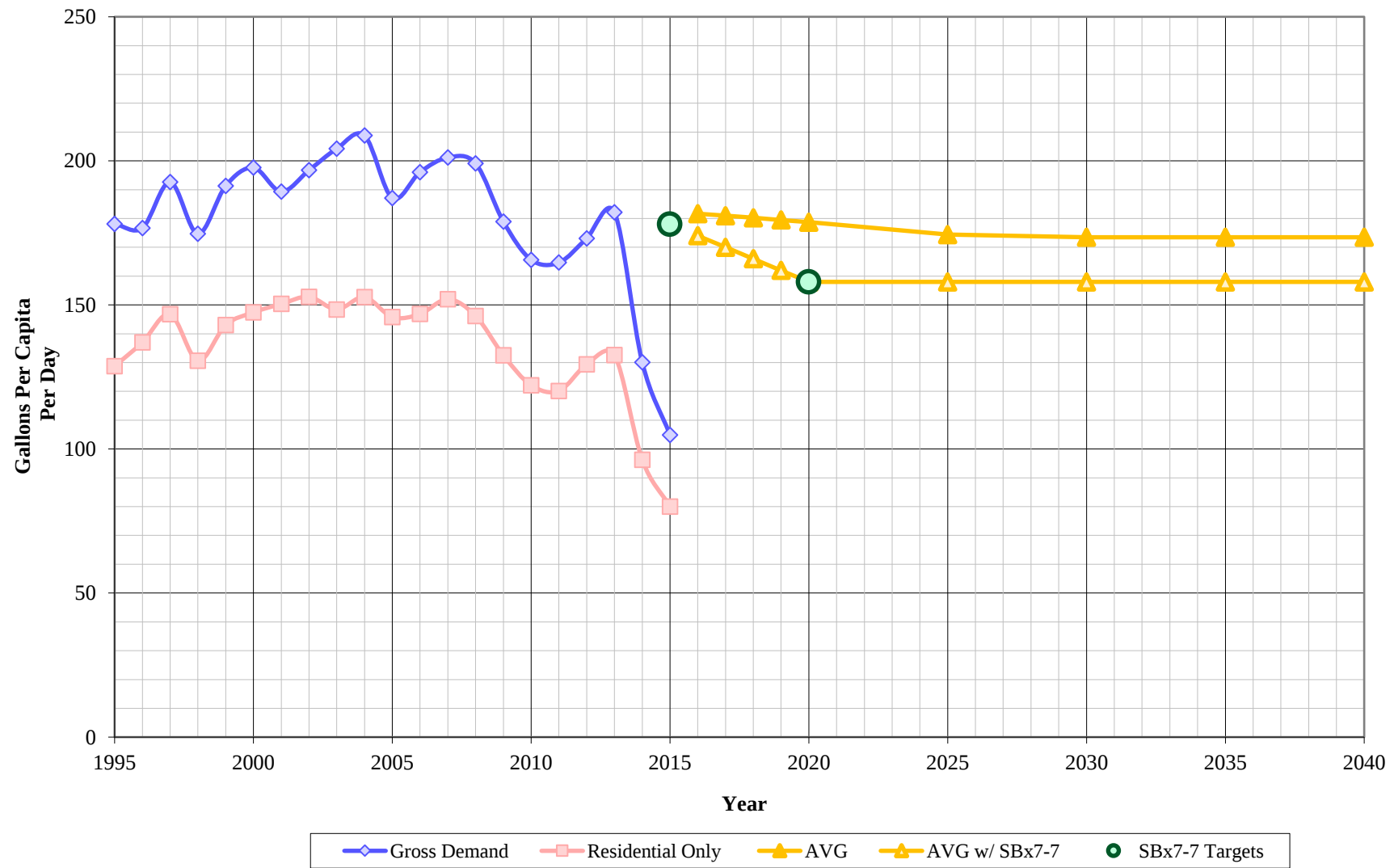
Worksheet 10

| Year | Purchased Water |       | Ground Water |       | Conservation |     | Total |        |
|------|-----------------|-------|--------------|-------|--------------|-----|-------|--------|
|      | MGD             | AFY   | MGD          | AFY   | MGD          | AFY | MGD   | AFY    |
| 1980 | 4.02            | 4,503 | 2.21         | 2,474 |              |     | 6.23  | 6,977  |
| 1981 | 3.98            | 4,460 | 2.30         | 2,574 |              |     | 6.28  | 7,034  |
| 1982 | 4.22            | 4,722 | 2.10         | 2,356 |              |     | 6.32  | 7,078  |
| 1983 | 4.33            | 4,856 | 2.28         | 2,558 |              |     | 6.62  | 7,413  |
| 1984 | 4.69            | 5,258 | 2.82         | 3,164 |              |     | 7.52  | 8,422  |
| 1985 | 4.97            | 5,565 | 2.49         | 2,785 |              |     | 7.45  | 8,350  |
| 1986 | 4.80            | 5,377 | 2.64         | 2,962 |              |     | 7.45  | 8,340  |
| 1987 | 4.97            | 5,562 | 2.77         | 3,105 |              |     | 7.74  | 8,667  |
| 1988 | 5.22            | 5,843 | 2.49         | 2,790 |              |     | 7.71  | 8,633  |
| 1989 | 5.06            | 5,667 | 2.73         | 3,058 |              |     | 7.79  | 8,725  |
| 1990 | 4.96            | 5,560 | 2.70         | 3,028 |              |     | 7.67  | 8,587  |
| 1991 | 1.99            | 2,228 | 4.17         | 4,671 |              |     | 6.16  | 6,899  |
| 1992 | 4.54            | 5,090 | 2.64         | 2,956 |              |     | 7.18  | 8,045  |
| 1993 | 5.31            | 5,943 | 1.99         | 2,232 |              |     | 7.30  | 8,175  |
| 1994 | 5.07            | 5,682 | 2.74         | 3,071 |              |     | 7.81  | 8,753  |
| 1995 | 6.97            | 7,810 | 1.38         | 1,541 |              |     | 8.35  | 9,351  |
| 1996 | 7.07            | 7,923 | 1.36         | 1,521 |              |     | 8.43  | 9,444  |
| 1997 | 6.08            | 6,815 | 3.31         | 3,710 |              |     | 9.40  | 10,525 |
| 1998 | 5.38            | 6,026 | 3.30         | 3,695 |              |     | 8.68  | 9,721  |
| 1999 | 6.64            | 7,436 | 3.00         | 3,356 |              |     | 9.63  | 10,791 |
| 2000 | 6.97            | 7,804 | 3.04         | 3,403 |              |     | 10.00 | 11,207 |
| 2001 | 6.51            | 7,291 | 3.19         | 3,570 |              |     | 9.70  | 10,861 |
| 2002 | 7.13            | 7,991 | 3.11         | 3,483 |              |     | 10.24 | 11,474 |
| 2003 | 7.64            | 8,558 | 3.04         | 3,408 |              |     | 10.68 | 11,967 |
| 2004 | 8.46            | 9,474 | 2.75         | 3,082 |              |     | 11.21 | 12,556 |
| 2005 | 7.45            | 8,343 | 2.74         | 3,072 |              |     | 10.19 | 11,416 |
| 2006 | 8.02            | 8,988 | 2.74         | 3,067 |              |     | 10.76 | 12,055 |
| 2007 | 8.35            | 9,350 | 2.74         | 3,067 |              |     | 11.08 | 12,417 |
| 2008 | 8.20            | 9,186 | 2.74         | 3,074 |              |     | 10.95 | 12,260 |
| 2009 | 7.10            | 7,949 | 2.74         | 3,065 |              |     | 9.83  | 11,014 |
| 2010 | 6.39            | 7,162 | 2.77         | 3,098 |              |     | 9.16  | 10,260 |

| Year | Purchased Water |       | Ground Water |       | Conservation |       | Total |        |
|------|-----------------|-------|--------------|-------|--------------|-------|-------|--------|
|      | MGD             | AFY   | MGD          | AFY   | MGD          | AFY   | MGD   | AFY    |
| 2011 | 6.53            | 7,310 | 2.67         | 2,987 | 0.00         | 0     | 9.19  | 10,297 |
| 2012 | 6.76            | 7,569 | 2.90         | 3,250 | 0.00         | 0     | 9.66  | 10,819 |
| 2013 | 7.83            | 8,767 | 2.38         | 2,667 | 0.00         | 0     | 10.21 | 11,434 |
| 2014 | 4.86            | 5,447 | 2.52         | 2,821 | 0.00         | 0     | 7.38  | 8,268  |
| 2015 | 3.98            | 4,463 | 2.11         | 2,361 | 0.00         | 0     | 6.09  | 6,824  |
| 2016 | 7.50            | 8,400 | 2.74         | 3,069 | 0.45         | 505   | 10.69 | 11,974 |
| 2017 | 7.40            | 8,286 | 2.74         | 3,069 | 0.65         | 732   | 10.79 | 12,087 |
| 2018 | 7.30            | 8,172 | 2.74         | 3,069 | 0.86         | 964   | 10.90 | 12,205 |
| 2019 | 7.19            | 8,057 | 2.74         | 3,069 | 1.07         | 1,201 | 11.00 | 12,327 |
| 2020 | 7.09            | 7,941 | 2.74         | 3,069 | 1.29         | 1,443 | 11.12 | 12,453 |
| 2021 | 7.24            | 8,108 | 2.74         | 3,069 | 1.26         | 1,408 | 11.23 | 12,585 |
| 2022 | 7.39            | 8,282 | 2.74         | 3,069 | 1.22         | 1,370 | 11.36 | 12,721 |
| 2023 | 7.56            | 8,465 | 2.74         | 3,069 | 1.19         | 1,329 | 11.48 | 12,863 |
| 2024 | 7.73            | 8,656 | 2.74         | 3,069 | 1.15         | 1,286 | 11.62 | 13,011 |
| 2025 | 7.91            | 8,856 | 2.74         | 3,069 | 1.11         | 1,239 | 11.75 | 13,165 |
| 2026 | 8.09            | 9,066 | 2.74         | 3,069 | 1.06         | 1,189 | 11.90 | 13,324 |
| 2027 | 8.09            | 9,066 | 2.74         | 3,069 | 1.06         | 1,189 | 11.90 | 13,324 |
| 2028 | 8.09            | 9,066 | 2.74         | 3,069 | 1.06         | 1,189 | 11.90 | 13,324 |
| 2029 | 8.09            | 9,066 | 2.74         | 3,069 | 1.06         | 1,189 | 11.90 | 13,324 |
| 2030 | 8.09            | 9,066 | 2.74         | 3,069 | 1.06         | 1,189 | 11.90 | 13,324 |
| 2031 | 8.09            | 9,066 | 2.74         | 3,069 | 1.06         | 1,189 | 11.90 | 13,324 |
| 2032 | 8.09            | 9,066 | 2.74         | 3,069 | 1.06         | 1,189 | 11.90 | 13,324 |
| 2033 | 8.09            | 9,066 | 2.74         | 3,069 | 1.06         | 1,189 | 11.90 | 13,324 |
| 2034 | 8.09            | 9,066 | 2.74         | 3,069 | 1.06         | 1,189 | 11.90 | 13,324 |
| 2035 | 8.09            | 9,066 | 2.74         | 3,069 | 1.06         | 1,189 | 11.90 | 13,324 |
| 2036 | 8.09            | 9,066 | 2.74         | 3,069 | 1.06         | 1,189 | 11.90 | 13,324 |
| 2037 | 8.09            | 9,066 | 2.74         | 3,069 | 1.06         | 1,189 | 11.90 | 13,324 |
| 2038 | 8.09            | 9,066 | 2.74         | 3,069 | 1.06         | 1,189 | 11.90 | 13,324 |
| 2039 | 8.09            | 9,066 | 2.74         | 3,069 | 1.06         | 1,189 | 11.90 | 13,324 |
| 2040 | 8.09            | 9,066 | 2.74         | 3,069 | 1.06         | 1,189 | 11.90 | 13,324 |

^  
|  
ACTUAL  
PROJECTED  
|  
V

## Per Capita Consumption (LIV)



# California Water Service Company - Livermore District

## Water Supply and Demand Analysis and Projections

Worksheet 15

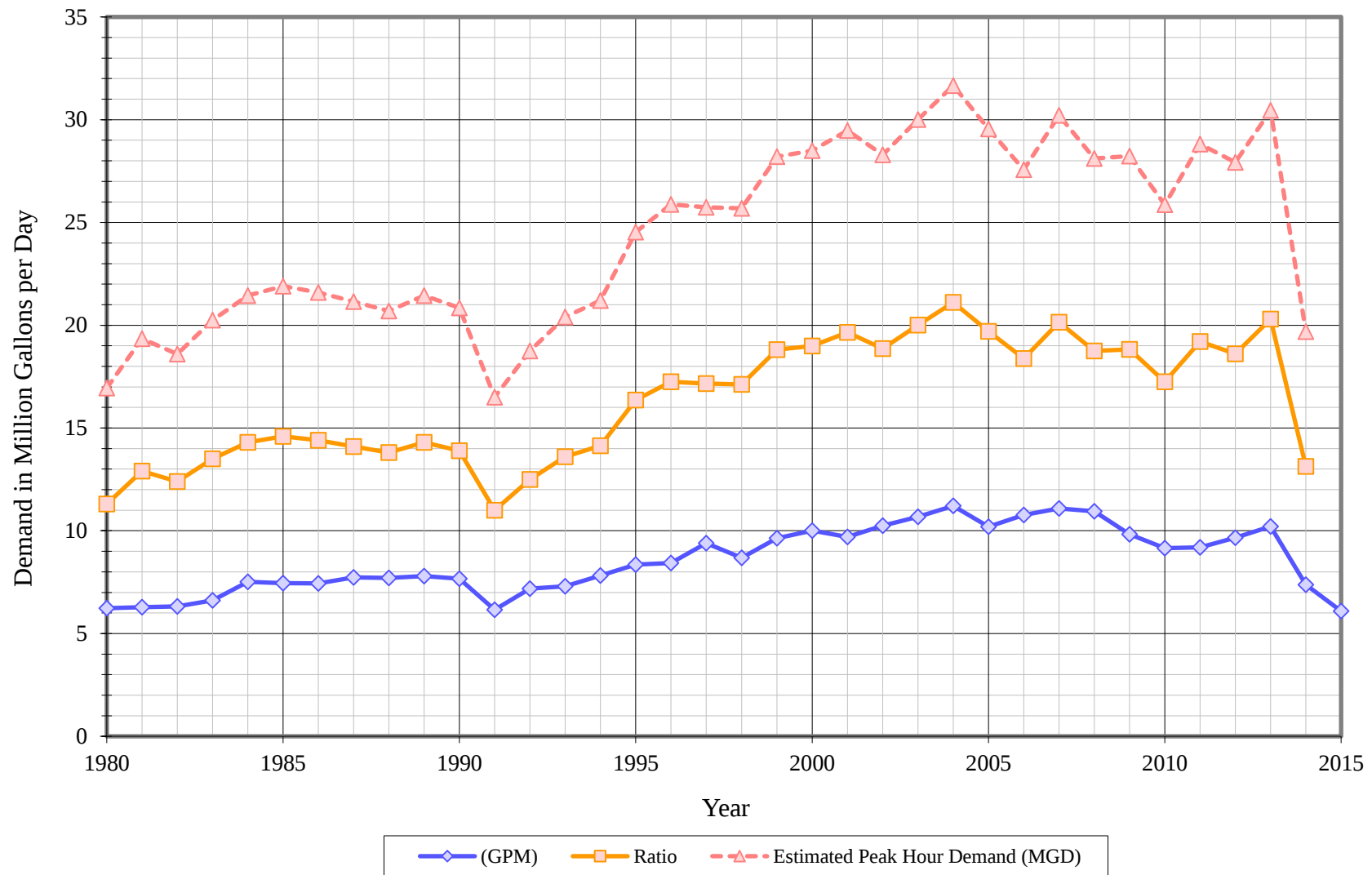
### Per Capita Water Demand Calculation

| Year | POP    | Historical   |                    |                  |                    | Projected    |                    |                    |                    |
|------|--------|--------------|--------------------|------------------|--------------------|--------------|--------------------|--------------------|--------------------|
|      |        | Gross Demand |                    | Residential Only |                    | Avg Demand   |                    | Avg Demand w/ Cons |                    |
|      |        | Usage (AFY)  | Per Capita (GPCPD) | Usage (AFY)      | Per Capita (GPCPD) | Demand (AFY) | Per Capita (GPCPD) | Demand (AFY)       | Per Capita (GPCPD) |
| 1995 | 46,865 | 9,351        | 178                | 6,757            | 129                |              |                    |                    |                    |
| 1996 | 47,713 | 9,444        | 177                | 7,322            | 137                |              |                    |                    |                    |
| 1997 | 48,785 | 10,525       | 193                | 8,020            | 147                |              |                    |                    |                    |
| 1998 | 49,688 | 9,721        | 175                | 7,270            | 131                |              |                    |                    |                    |
| 1999 | 50,349 | 10,791       | 191                | 8,068            | 143                |              |                    |                    |                    |
| 2000 | 50,622 | 11,207       | 198                | 8,360            | 147                |              |                    |                    |                    |
| 2001 | 51,214 | 10,861       | 189                | 8,625            | 150                |              |                    |                    |                    |
| 2002 | 52,060 | 11,474       | 197                | 8,911            | 153                |              |                    |                    |                    |
| 2003 | 52,307 | 11,967       | 204                | 8,698            | 148                |              |                    |                    |                    |
| 2004 | 53,693 | 12,556       | 209                | 9,186            | 153                |              |                    |                    |                    |
| 2005 | 54,475 | 11,416       | 187                | 8,895            | 146                |              |                    |                    |                    |
| 2006 | 54,883 | 12,055       | 196                | 9,027            | 147                |              |                    |                    |                    |
| 2007 | 55,110 | 12,417       | 201                | 9,383            | 152                |              |                    |                    |                    |
| 2008 | 54,971 | 12,260       | 199                | 9,002            | 146                |              |                    |                    |                    |
| 2009 | 54,954 | 11,014       | 179                | 8,158            | 133                |              |                    |                    |                    |
| 2010 | 55,285 | 10,260       | 166                | 7,563            | 122                |              |                    |                    |                    |
| 2011 | 55,807 | 10,297       | 165                | 7,512            | 120                |              |                    |                    |                    |
| 2012 | 55,800 | 10,819       | 173                | 8,086            | 129                |              |                    |                    |                    |
| 2013 | 56,055 | 11,434       | 182                | 8,326            | 133                |              |                    |                    |                    |
| 2014 | 56,726 | 8,268        | 130                | 6,119            | 96                 |              |                    |                    |                    |
| 2015 | 58,095 | 6,824        | 105                | 5,207            | 80                 |              |                    |                    |                    |
| 2016 | 58,846 |              |                    |                  |                    | 11,974       | 182                | 11,469             | 174                |
| 2017 | 59,631 |              |                    |                  |                    | 12,087       | 181                | 11,355             | 170                |
| 2018 | 60,453 |              |                    |                  |                    | 12,205       | 180                | 11,241             | 166                |
| 2019 | 61,313 |              |                    |                  |                    | 12,327       | 179                | 11,126             | 162                |
| 2020 | 62,212 |              |                    |                  |                    | 12,453       | 179                | 11,010             | 158                |
| 2025 | 67,382 |              |                    |                  |                    | 13,165       | 174                | 11,925             | 158                |
| 2030 | 68,566 |              |                    |                  |                    | 13,324       | 173                | 12,135             | 158                |
| 2035 | 68,566 |              |                    |                  |                    | 13,324       | 173                | 12,135             | 158                |
| 2040 | 68,566 |              |                    |                  |                    | 13,324       | 173                | 12,135             | 158                |

#### SBx7-7 Targets

|      |     |
|------|-----|
| 2015 | 178 |
| 2020 | 158 |

## Average Day, Maximum Day, Peak Demand



**California Water Service Company - Livermore District**  
**Water Supply and Demand Analysis and Projections**  
**Historical and Projected Average Day, Maximum Day, and Peak Demand**

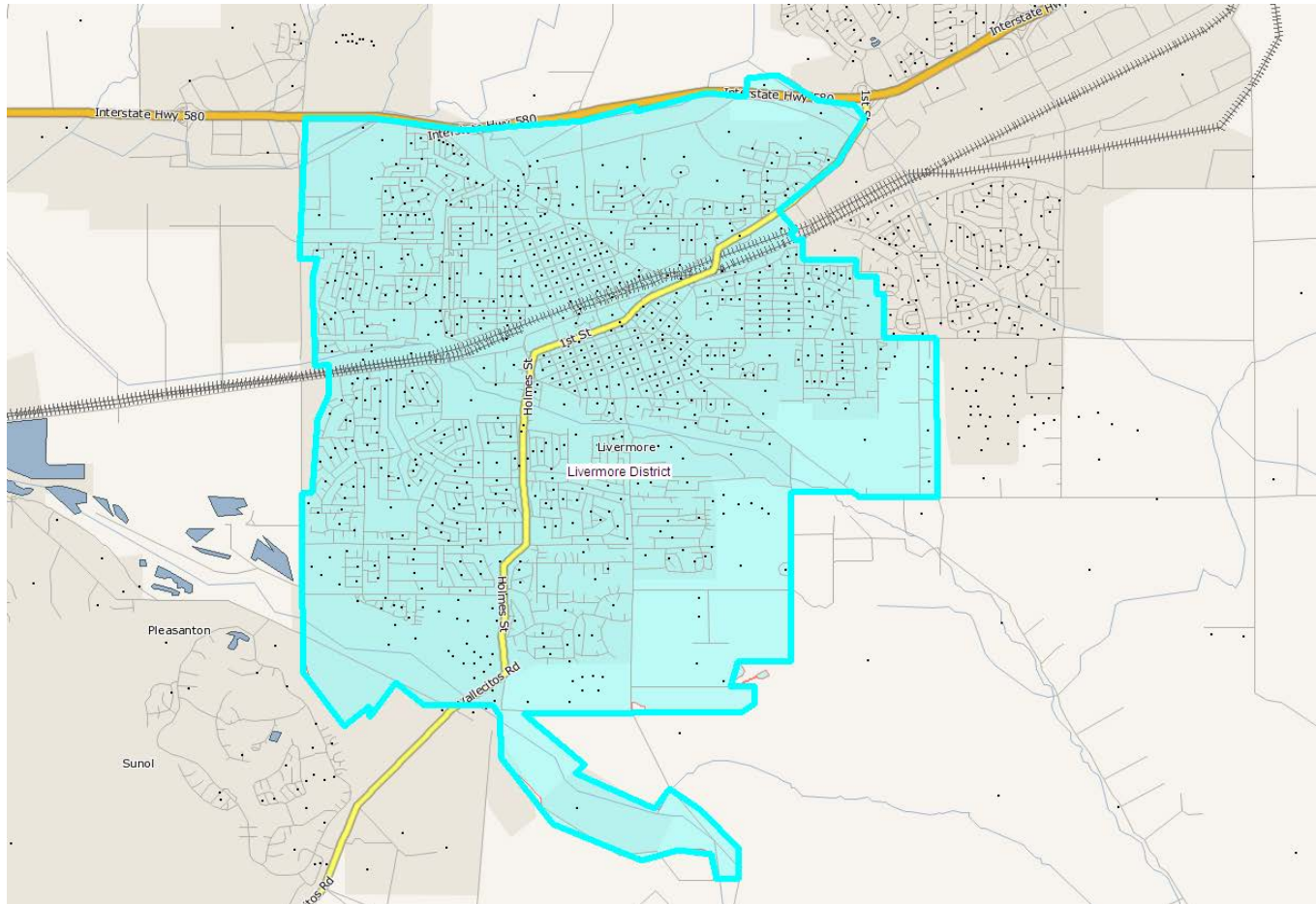
Worksheet 11

| Year                        | Historical Demand (AFY) | Annual Demand (MGY) | Average Day Demand (MGD) | Per Service (GPD) | Maximum Day Demand (MGD) | Per Service (GPD) | MDD ADD Ratio | Estimated Peak Hour Demand (MGD) | (GPM)  | PHD MDD Ratio | PHD ADD Ratio | Measured Peak Hour Demand (MGD) | (GPM) | PHD MDD Ratio |
|-----------------------------|-------------------------|---------------------|--------------------------|-------------------|--------------------------|-------------------|---------------|----------------------------------|--------|---------------|---------------|---------------------------------|-------|---------------|
| 1980                        | 6,977                   | 2,273               | 6.23                     | 492               | 11.30                    | 892               | 1.81          | 16.95                            | 11,771 | 1.50          | 2.72          |                                 |       |               |
| 1981                        | 7,034                   | 2,292               | 6.28                     | 494               | 12.90                    | 1,014             | 2.05          | 19.35                            | 13,438 | 1.50          | 3.08          |                                 |       |               |
| 1982                        | 7,078                   | 2,306               | 6.32                     | 495               | 12.40                    | 972               | 1.96          | 18.60                            | 12,917 | 1.50          | 2.94          |                                 |       |               |
| 1983                        | 7,413                   | 2,416               | 6.62                     | 513               | 13.50                    | 1,047             | 2.04          | 20.25                            | 14,063 | 1.50          | 3.06          |                                 |       |               |
| 1984                        | 8,422                   | 2,744               | 7.52                     | 575               | 14.30                    | 1,093             | 1.90          | 21.45                            | 14,896 | 1.50          | 2.85          |                                 |       |               |
| 1985                        | 8,350                   | 2,721               | 7.45                     | 566               | 14.60                    | 1,108             | 1.96          | 21.90                            | 15,208 | 1.50          | 2.94          |                                 |       |               |
| 1986                        | 8,340                   | 2,717               | 7.45                     | 559               | 14.40                    | 1,082             | 1.93          | 21.60                            | 15,000 | 1.50          | 2.90          |                                 |       |               |
| 1987                        | 8,667                   | 2,824               | 7.74                     | 575               | 14.10                    | 1,049             | 1.82          | 21.15                            | 14,688 | 1.50          | 2.73          |                                 |       |               |
| 1988                        | 8,633                   | 2,813               | 7.71                     | 569               | 13.80                    | 1,020             | 1.79          | 20.70                            | 14,375 | 1.50          | 2.69          |                                 |       |               |
| 1989                        | 8,725                   | 2,843               | 7.79                     | 567               | 14.30                    | 1,042             | 1.84          | 21.45                            | 14,896 | 1.50          | 2.75          |                                 |       |               |
| 1990                        | 8,587                   | 2,798               | 7.67                     | 551               | 13.90                    | 999               | 1.81          | 20.85                            | 14,479 | 1.50          | 2.72          |                                 |       |               |
| 1991                        | 6,899                   | 2,248               | 6.16                     | 437               | 11.00                    | 780               | 1.79          | 16.50                            | 11,458 | 1.50          | 2.68          |                                 |       |               |
| 1992                        | 8,045                   | 2,622               | 7.18                     | 504               | 12.50                    | 877               | 1.74          | 18.75                            | 13,021 | 1.50          | 2.61          |                                 |       |               |
| 1993                        | 8,175                   | 2,664               | 7.30                     | 506               | 13.60                    | 943               | 1.86          | 20.40                            | 14,167 | 1.50          | 2.80          |                                 |       |               |
| 1994                        | 8,753                   | 2,852               | 7.81                     | 534               | 14.14                    | 966               | 1.81          | 21.20                            | 14,725 | 1.50          | 2.71          |                                 |       |               |
| 1995                        | 9,351                   | 3,047               | 8.35                     | 562               | 16.36                    | 1,102             | 1.96          | 24.54                            | 17,041 | 1.50          | 2.94          |                                 |       |               |
| 1996                        | 9,444                   | 3,077               | 8.43                     | 556               | 17.25                    | 1,137             | 2.05          | 25.88                            | 17,970 | 1.50          | 3.07          |                                 |       |               |
| 1997                        | 10,525                  | 3,430               | 9.40                     | 603               | 17.16                    | 1,102             | 1.83          | 25.74                            | 17,873 | 1.50          | 2.74          |                                 |       |               |
| 1998                        | 9,721                   | 3,168               | 8.68                     | 545               | 17.12                    | 1,075             | 1.97          | 25.69                            | 17,838 | 1.50          | 2.96          |                                 |       |               |
| 1999                        | 10,791                  | 3,516               | 9.63                     | 595               | 18.81                    | 1,161             | 1.95          | 28.21                            | 19,591 | 1.50          | 2.93          |                                 |       |               |
| 2000                        | 11,207                  | 3,652               | 10.00                    | 611               | 19.00                    | 1,161             | 1.90          | 28.50                            | 19,789 | 1.50          | 2.85          |                                 |       |               |
| 2001                        | 10,861                  | 3,539               | 9.70                     | 584               | 19.65                    | 1,184             | 2.03          | 29.47                            | 20,467 | 1.50          | 3.04          |                                 |       |               |
| 2002                        | 11,474                  | 3,739               | 10.24                    | 607               | 18.87                    | 1,119             | 1.84          | 28.30                            | 19,652 | 1.50          | 2.76          |                                 |       |               |
| 2003                        | 11,967                  | 3,899               | 10.68                    | 631               | 20.00                    | 1,182             | 1.87          | 30.01                            | 20,838 | 1.50          | 2.81          |                                 |       |               |
| 2004                        | 12,556                  | 4,091               | 11.21                    | 644               | 21.11                    | 1,213             | 1.88          | 31.67                            | 21,990 | 1.50          | 2.82          |                                 |       |               |
| 2005                        | 11,416                  | 3,720               | 10.19                    | 577               | 19.71                    | 1,116             | 1.93          | 29.56                            | 20,526 | 1.50          | 2.90          |                                 |       |               |
| 2006                        | 12,055                  | 3,928               | 10.76                    | 606               | 18.38                    | 1,034             | 1.71          | 27.57                            | 19,146 | 1.50          | 2.56          |                                 |       |               |
| 2007                        | 12,417                  | 4,046               | 11.08                    | 622               | 20.15                    | 1,131             | 1.82          | 30.22                            | 20,985 | 1.50          | 2.73          |                                 |       |               |
| 2008                        | 12,260                  | 3,995               | 10.95                    | 615               | 18.75                    | 1,053             | 1.71          | 28.12                            | 19,526 | 1.50          | 2.57          |                                 |       |               |
| 2009                        | 11,014                  | 3,589               | 9.83                     | 553               | 18.82                    | 1,058             | 1.91          | 28.23                            | 19,604 | 1.50          | 2.87          |                                 |       |               |
| 2010                        | 10,260                  | 3,343               | 9.16                     | 513               | 17.25                    | 965               | 1.88          | 25.87                            | 17,964 | 1.50          | 2.82          |                                 |       |               |
| 2011                        | 10,297                  | 3,355               | 9.19                     | 512               | 19.21                    | 1,070             | 2.09          | 28.82                            | 20,010 | 1.50          | 3.13          |                                 |       |               |
| 2012                        | 10,819                  | 3,526               | 9.66                     | 537               | 18.62                    | 1,035             | 1.93          | 27.92                            | 19,392 | 1.50          | 2.89          |                                 |       |               |
| 2013                        | 11,434                  | 3,726               | 10.21                    | 567               | 20.30                    | 1,127             | 1.99          | 30.45                            | 21,147 | 1.50          | 2.98          |                                 |       |               |
| 2014                        | 8,268                   | 2,694               | 7.38                     | 409               | 13.13                    | 728               | 1.78          | 19.69                            | 13,675 | 1.50          | 2.67          |                                 |       |               |
| 2015                        | 6,824                   | 2,224               | 6.09                     | 336               |                          |                   |               |                                  |        |               |               |                                 |       |               |
| 10 year Average (2001-2010) |                         |                     | 10.38                    | 595               | 19.27                    | 1,105             | 1.86          | 28.90                            | 19,445 | 1.50          | 2.71          |                                 |       |               |
| 5 year Average (2006-2010)  |                         |                     | 10.36                    | 582               | 18.67                    | 1,048             | 1.81          | 28.00                            | 20,070 | 1.50          | 2.79          |                                 |       |               |

# California Water Service Company - Livermore District

## Water Supply and Demand Analysis and Projections

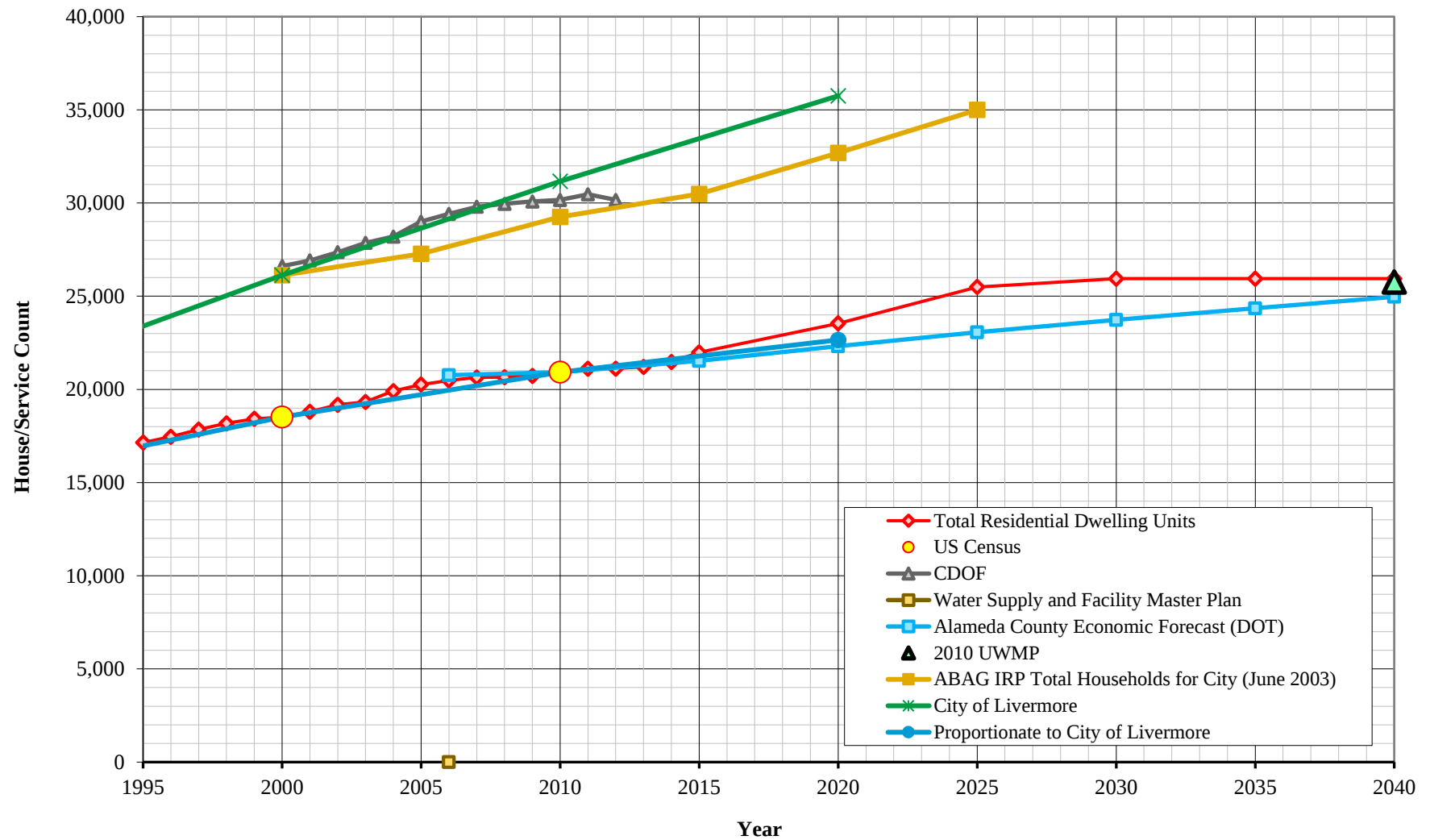
### Marplot Summary



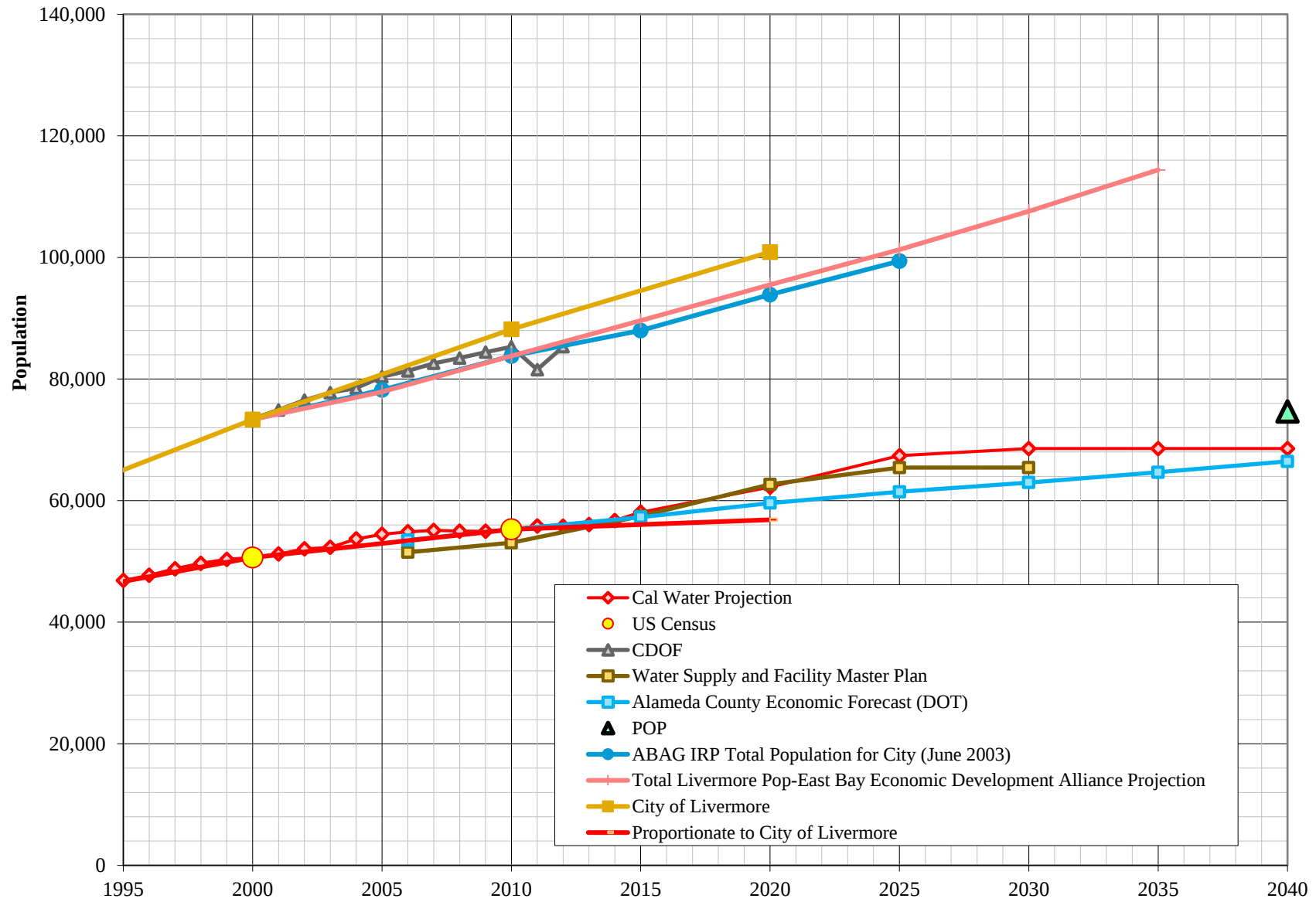
| System    | US Census 2000 Summary |            |                    |         | US Census 2010 Summary |            |                    |         | 2000-2010 Change             |                      |                |
|-----------|------------------------|------------|--------------------|---------|------------------------|------------|--------------------|---------|------------------------------|----------------------|----------------|
|           | Census Blocks          | Population | Housing Units (HU) | Density | Census Blocks          | Population | Housing Units (HU) | Density | Percentage Population Change | Percentage HU Change | Density Change |
| Livermore | 575                    | 50,622     | 18,518             | 2.73    | 709                    | 55,285     | 20,917             | 2.64    | 9.2%                         | 13.0%                | -3.3%          |
|           |                        |            |                    |         |                        |            |                    |         |                              |                      |                |
|           | 575                    | 50,622     | 18,518             | 2.73    | 709                    | 55,285     | 20,917             | 2.64    | 9.2%                         | 13.0%                | -3.3%          |

MARPLOT disclaimer: The population and housing number given above are only rough estimates. They are based on the US Census Blocks. Although Census Blocks are polygons, MARPLOT uses the centroid, or center point, rather than the entire polygon. If a Census Block centroid is within any of the MARPLOT selected objects, the population and housing numbers for that block are tallied, even if only part of the block is within the selected object. It is possible for a block not be counted if its centroid is not within selected objects, even though part of the block is within the selected objects.

# Housing Projections



# Population Projections



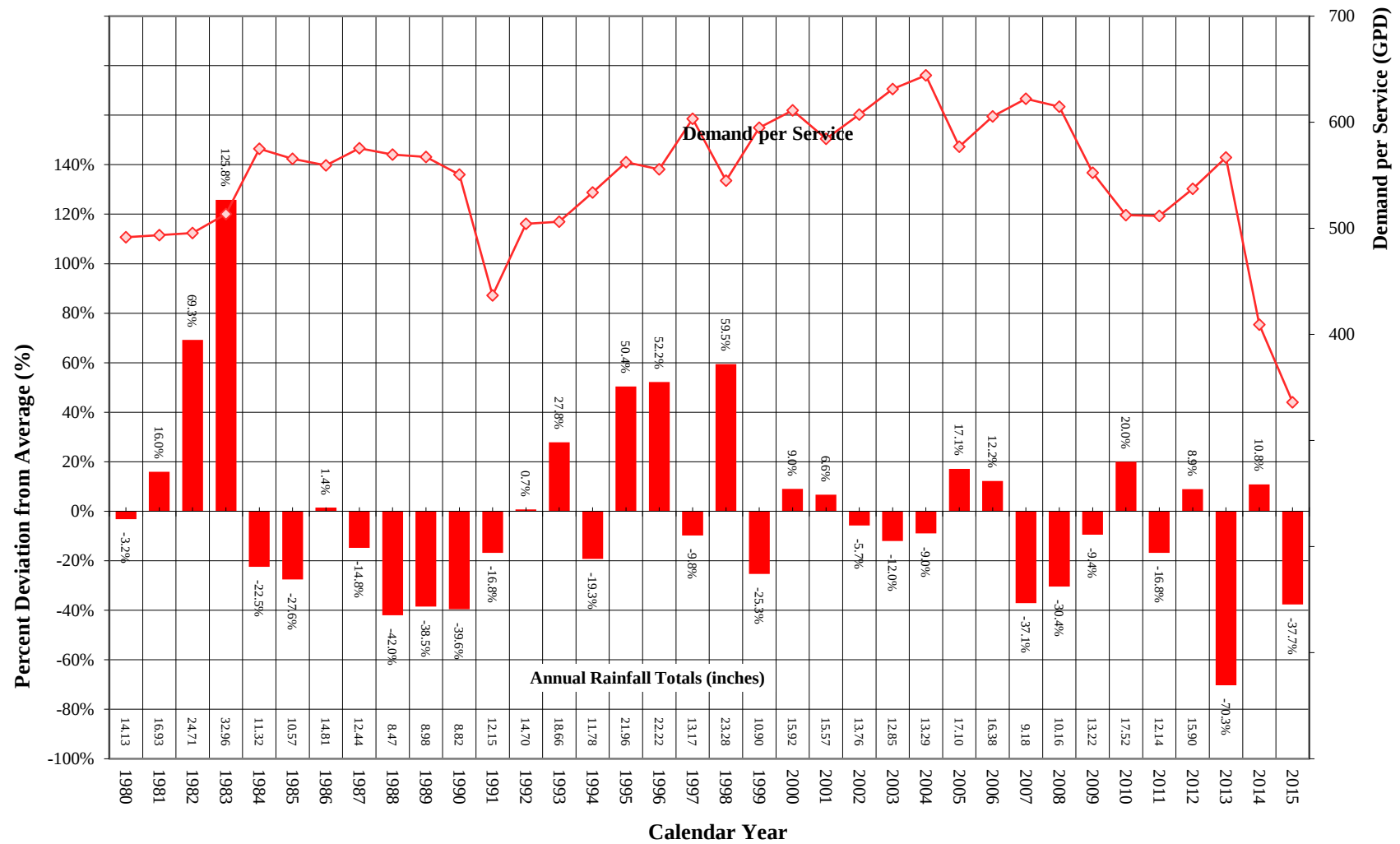
**California Water Service Company - Livermore District**  
**Water Supply and Demand Analysis and Projections**  
**Population Estimate**

| Year | US Census  |               | Persons per<br>Housing Unit | Single Family | Multi Family Residential |             |         | Flat Rate     |
|------|------------|---------------|-----------------------------|---------------|--------------------------|-------------|---------|---------------|
|      | Population | Housing Units |                             | Residential   |                          | Residential | Unit    | Residential   |
|      |            |               |                             | Services (DU) | Services                 | Units (DU)  | Density | Services (DU) |
| 2000 | 50,622     | 18,518        | 2.734                       | 15,300        | 75                       | 3,218       | 42.9    | 0             |
| 2010 | 55,285     | 20,917        | 2.643                       | 16,521        | 77                       | 4,396       | 56.8    | 0             |
|      | 9.2%       | 13.0%         | -3.3%                       | 8.0%          | 3.1%                     | 36.6%       | 32.5%   | 0.0%          |

| Year | Single Family<br>Residential<br>Services (DU) | Multi Family Residential |                           |                 | Flat Rate<br>Residential<br>Services (DU) | Total<br>Residential<br>Dwelling Units | Persons per<br>Housing Unit | Estimated<br>District<br>Population |                                         |
|------|-----------------------------------------------|--------------------------|---------------------------|-----------------|-------------------------------------------|----------------------------------------|-----------------------------|-------------------------------------|-----------------------------------------|
|      |                                               | Services                 | Residential<br>Units (DU) | Unit<br>Density |                                           |                                        |                             |                                     |                                         |
| 1995 | 13,919                                        | 75                       | 3,225                     | 42.9            | 0                                         | 17,144                                 | 2.734                       | 46,865                              | ^<br> <br>ACTUAL<br>PROJECTED<br> <br>v |
| 1996 | 14,236                                        | 75                       | 3,218                     | 42.9            | 0                                         | 17,454                                 | 2.734                       | 47,713                              |                                         |
| 1997 | 14,628                                        | 75                       | 3,218                     | 42.9            | 0                                         | 17,846                                 | 2.734                       | 48,785                              |                                         |
| 1998 | 14,958                                        | 75                       | 3,218                     | 42.9            | 0                                         | 18,176                                 | 2.734                       | 49,688                              |                                         |
| 1999 | 15,200                                        | 75                       | 3,218                     | 42.9            | 0                                         | 18,418                                 | 2.734                       | 50,349                              |                                         |
| 2000 | 15,300                                        | 75                       | 3,218                     | 42.9            | 0                                         | 18,518                                 | 2.734                       | 50,622                              |                                         |
| 2001 | 15,461                                        | 75                       | 3,336                     | 44.5            | 0                                         | 18,797                                 | 2.725                       | 51,214                              |                                         |
| 2002 | 15,718                                        | 75                       | 3,453                     | 46.0            | 0                                         | 19,171                                 | 2.716                       | 52,060                              |                                         |
| 2003 | 15,755                                        | 75                       | 3,571                     | 47.8            | 0                                         | 19,327                                 | 2.706                       | 52,307                              |                                         |
| 2004 | 16,216                                        | 75                       | 3,689                     | 49.2            | 0                                         | 19,905                                 | 2.697                       | 53,693                              |                                         |
| 2005 | 16,457                                        | 75                       | 3,807                     | 50.8            | 0                                         | 20,263                                 | 2.688                       | 54,475                              |                                         |
| 2006 | 16,560                                        | 75                       | 3,925                     | 52.3            | 0                                         | 20,484                                 | 2.679                       | 54,883                              |                                         |
| 2007 | 16,596                                        | 75                       | 4,042                     | 53.9            | 0                                         | 20,639                                 | 2.670                       | 55,110                              |                                         |
| 2008 | 16,496                                        | 76                       | 4,160                     | 55.1            | 0                                         | 20,656                                 | 2.661                       | 54,971                              |                                         |
| 2009 | 16,443                                        | 76                       | 4,278                     | 56.4            | 0                                         | 20,721                                 | 2.652                       | 54,954                              |                                         |
| 2010 | 16,521                                        | 77                       | 4,396                     | 56.8            | 0                                         | 20,917                                 | 2.643                       | 55,285                              |                                         |
| 2011 | 16,601                                        | 83                       | 4,514                     | 54.4            | 0                                         | 21,114                                 | 2.643                       | 55,807                              |                                         |
| 2012 | 16,621                                        | 83                       | 4,491                     | 54.4            | 0                                         | 21,112                                 | 2.643                       | 55,800                              |                                         |
| 2013 | 16,654                                        | 84                       | 4,554                     | 54.4            | 0                                         | 21,208                                 | 2.643                       | 56,055                              |                                         |
| 2014 | 16,695                                        | 88                       | 4,767                     | 54.4            | 0                                         | 21,462                                 | 2.643                       | 56,726                              |                                         |
| 2015 | 16,773                                        | 96                       | 5,207                     | 54.4            | 0                                         | 21,980                                 | 2.643                       | 58,095                              |                                         |
| 2020 | 16,892                                        | 122                      | 6,645                     | 54.4            | 0                                         | 23,538                                 | 2.643                       | 62,212                              | ^<br> <br>ACTUAL<br>PROJECTED<br> <br>v |
| 2025 | 17,012                                        | 156                      | 8,481                     | 54.4            | 0                                         | 25,494                                 | 2.643                       | 67,382                              |                                         |
| 2030 | 17,036                                        | 164                      | 8,906                     | 54.4            | 0                                         | 25,942                                 | 2.643                       | 68,566                              |                                         |
| 2035 | 17,036                                        | 164                      | 8,906                     | 54.4            | 0                                         | 25,942                                 | 2.643                       | 68,566                              |                                         |
| 2040 | 17,036                                        | 164                      | 8,906                     | 54.4            | 0                                         | 25,942                                 | 2.643                       | 68,566                              |                                         |

Notes: linear extrapolation used to estimated MFR-DU from 2000. Estimate extend until 2011 due to reclassification, afterwards a constant MFR Unit Density is used.

# Comparison of Annual Rainfall to Historical Average



**California Water Service Company - Livermore District**  
**Water Supply and Demand Analysis and Projections**

**Temperature & Rainfall History**

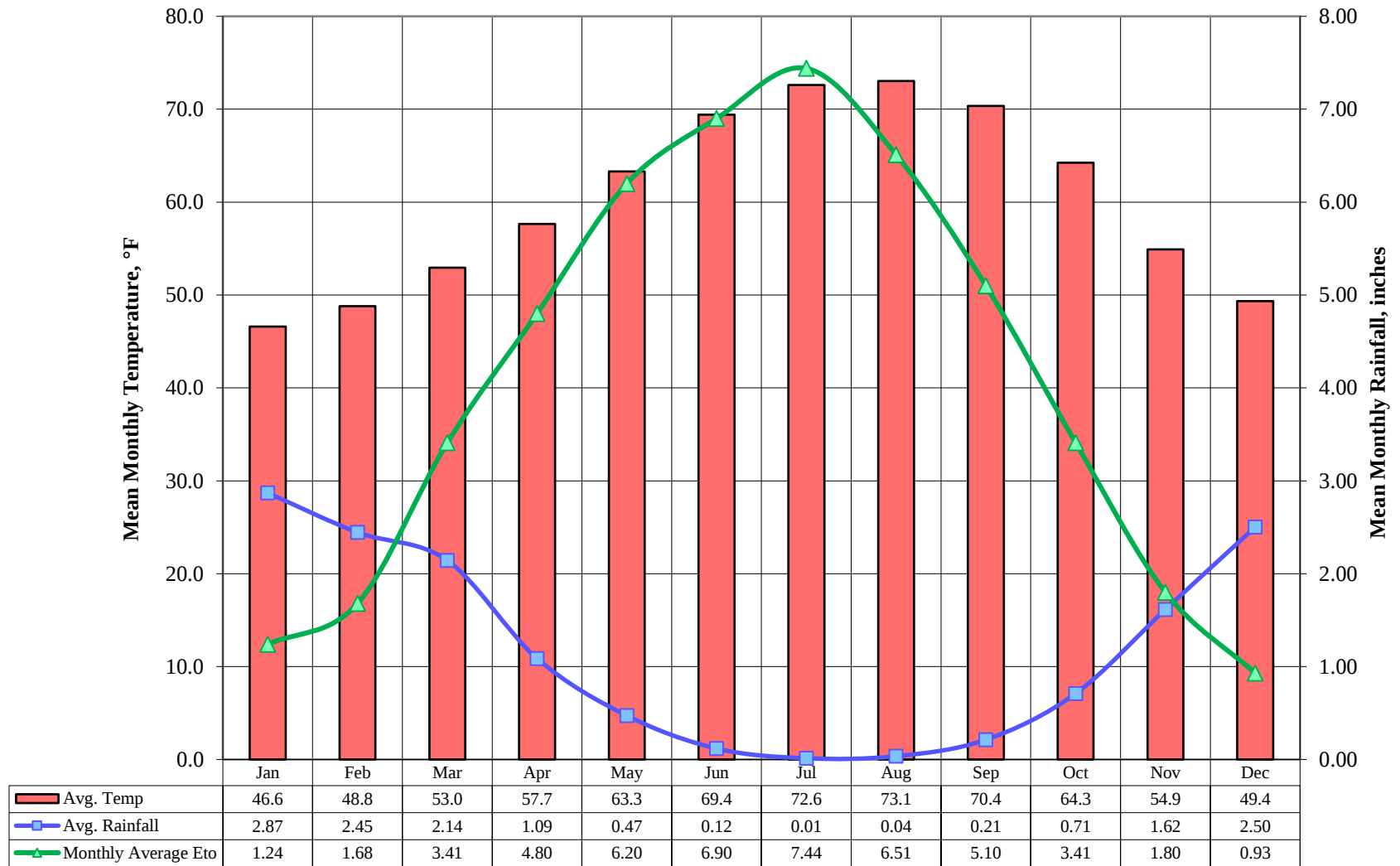
| Year | Precipitation |                   | Temperature |           |           | Demand per Service (gpd) | Percent of Average Demand |
|------|---------------|-------------------|-------------|-----------|-----------|--------------------------|---------------------------|
|      | Annual (in)   | Percent Variation | Tmax (°F)   | Tmin (°F) | Mean (°F) |                          |                           |
| 1980 | 14.13         | -3.2%             | 89.40       | 37.90     | 63.7      | 492                      | -10.3%                    |
| 1981 | 16.93         | 16.0%             | 93.00       | 39.70     | 66.4      | 494                      | -9.9%                     |
| 1982 | 24.71         | 69.3%             | 86.10       | 34.10     | 60.1      | 495                      | -9.6%                     |
| 1983 | 32.96         | 125.8%            | 88.80       | 36.50     | 62.7      | 513                      | -6.3%                     |
| 1984 | 11.32         | -22.5%            | 93.30       | 37.10     | 65.2      | 575                      | 4.9%                      |
| 1985 | 10.57         | -27.6%            | 91.60       | 34.50     | 63.1      | 566                      | 3.2%                      |
| 1986 | 14.81         | 1.4%              | 89.10       | 35.20     | 62.2      | 559                      | 2.1%                      |
| 1987 | 12.44         | -14.8%            | 85.90       | 34.80     | 60.4      | 575                      | 5.0%                      |
| 1988 | 8.47          | -42.0%            | 92.90       | 38.00     | 65.5      | 569                      | 3.9%                      |
| 1989 | 8.98          | -38.5%            | 88.50       | 35.10     | 61.8      | 567                      | 3.6%                      |
| 1990 | 8.82          | -39.6%            | 88.70       | 31.80     | 60.3      | 551                      | 0.5%                      |
| 1991 | 12.15         | -16.8%            | 89.20       | 36.70     | 63.0      | 437                      | -20.3%                    |
| 1992 | 14.70         | 0.7%              | 90.20       | 35.90     | 63.1      | 504                      | -8.0%                     |
| 1993 | 18.66         | 27.8%             | 87.50       | 37.70     | 62.6      | 506                      | -7.6%                     |
| 1994 | 11.78         | -19.3%            | 88.90       | 37.40     | 63.2      | 534                      | -2.6%                     |
| 1995 | 21.96         | 50.4%             | 88.80       | 44.20     | 66.5      | 562                      | 2.6%                      |
| 1996 | 22.22         | 52.2%             | 91.90       | 42.20     | 67.1      | 556                      | 1.4%                      |
| 1997 | 13.17         | -9.8%             | 87.20       | 39.20     | 63.2      | 603                      | 10.1%                     |
| 1998 | 23.28         | 59.5%             | 90.80       | 35.20     | 63.0      | 545                      | -0.5%                     |
| 1999 | 10.90         | -25.3%            | 85.20       | 37.80     | 61.5      | 595                      | 8.6%                      |
| 2000 | 15.92         | 9.0%              | 87.20       | 39.30     | 63.3      | 611                      | 11.6%                     |
| 2001 | 15.57         | 6.6%              | 86.20       | 35.60     | 60.9      | 584                      | 6.7%                      |
| 2002 | 13.76         | -5.7%             | 88.00       | 37.20     | 62.6      | 607                      | 10.8%                     |
| 2003 | 12.85         | -12.0%            | 91.50       | 39.20     | 65.4      | 631                      | 15.2%                     |
| 2004 | 13.29         | -9.0%             | 86.90       | 39.80     | 63.4      | 644                      | 17.6%                     |
| 2005 | 17.10         | 17.1%             | 91.10       | 38.80     | 65.0      | 577                      | 5.3%                      |
| 2006 | 16.38         | 12.2%             | 92.80       | 38.20     | 65.5      | 606                      | 10.5%                     |
| 2007 | 9.18          | -37.1%            | 87.30       | 34.40     | 60.9      | 622                      | 13.6%                     |
| 2008 | 10.16         | -30.4%            | 89.00       | 36.90     | 63.0      | 615                      | 12.2%                     |
| 2009 | 13.22         | -9.4%             | 88.90       | 37.90     | 63.4      | 553                      | 0.8%                      |
| 2010 | 17.52         | 20.0%             | 85.40       | 41.50     | 63.5      | 513                      | -6.4%                     |
| 2011 | 12.14         | -16.8%            | 88.90       | 36.40     | 62.7      | 512                      | -6.6%                     |
| 2012 | 15.90         | 8.9%              | 90.10       | 38.40     | 64.3      | 537                      | -1.9%                     |
| 2013 | 4.34          | -70.3%            | 89.10       | 34.40     | 61.8      | 567                      | 3.4%                      |
| 2014 | 16.18         | 10.8%             | 89.30       | 41.40     | 65.4      | 409                      | -25.3%                    |
| 2015 | 9.10          | -37.7%            | 88.20       | 37.40     | 62.8      | 336                      | -38.6%                    |
| 2016 |               |                   |             |           |           |                          |                           |
| 2017 |               |                   |             |           |           |                          |                           |
| 2018 |               |                   |             |           |           |                          |                           |
| 2019 |               |                   |             |           |           |                          |                           |
| 2020 |               |                   |             |           |           |                          |                           |

| Precipitation (1895 - present) |       |       |      |      |      | Monthly Average Eto |
|--------------------------------|-------|-------|------|------|------|---------------------|
|                                | Mean  | High  | Year | Low  | Year |                     |
|                                | in.   | in.   | -    | in.  | -    |                     |
| Jan                            | 2.87  | 11.72 | 1911 | 0.00 | 2015 | 1.24                |
| Feb                            | 2.45  | 8.17  | 1998 | 0.00 | 1900 | 1.68                |
| Mar                            | 2.14  | 6.98  | 1983 | 0.00 | 1934 | 3.41                |
| Apr                            | 1.09  | 4.99  | 1967 | 0.00 | 1909 | 4.80                |
| May                            | 0.47  | 2.59  | 1915 | 0.00 | 1909 | 6.20                |
| Jun                            | 0.12  | 1.38  | 2011 | 0.00 | 1905 | 6.90                |
| Jul                            | 0.01  | 0.54  | 1980 | 0.00 | 1959 | 7.44                |
| Aug                            | 0.04  | 0.89  | 1976 | 0.00 | 1958 | 6.51                |
| Sep                            | 0.21  | 4.91  | 1918 | 0.00 | 1899 | 5.10                |
| Oct                            | 0.71  | 3.82  | 1962 | 0.00 | 1903 | 3.41                |
| Nov                            | 1.62  | 5.99  | 1983 | 0.00 | 1929 | 1.80                |
| Dec                            | 2.50  | 9.39  | 1955 | 0.06 | 1989 | 0.93                |
| Annual                         | 14.22 | 32.96 | 1983 | 4.34 | 2013 | 49.42               |

| Temperature (1895 - present) |      |      |      |
|------------------------------|------|------|------|
|                              | Tmax | Tmin | Mean |
|                              | °F   | °F   | °F   |
| Jan                          | 65.6 | 27.6 | 46.6 |
| Feb                          | 67.2 | 30.4 | 48.8 |
| Mar                          | 73.1 | 32.8 | 53.0 |
| Apr                          | 77.5 | 37.8 | 57.7 |
| May                          | 84.9 | 41.7 | 63.3 |
| Jun                          | 93.0 | 45.8 | 69.4 |
| Jul                          | 95.0 | 50.2 | 72.6 |
| Aug                          | 96.5 | 49.6 | 73.1 |
| Sep                          | 92.7 | 48.0 | 70.4 |
| Oct                          | 85.7 | 42.8 | 64.3 |
| Nov                          | 74.3 | 35.5 | 54.9 |
| Dec                          | 67.5 | 31.2 | 49.4 |
| Annual                       | 96.5 | 27.6 | 62.1 |

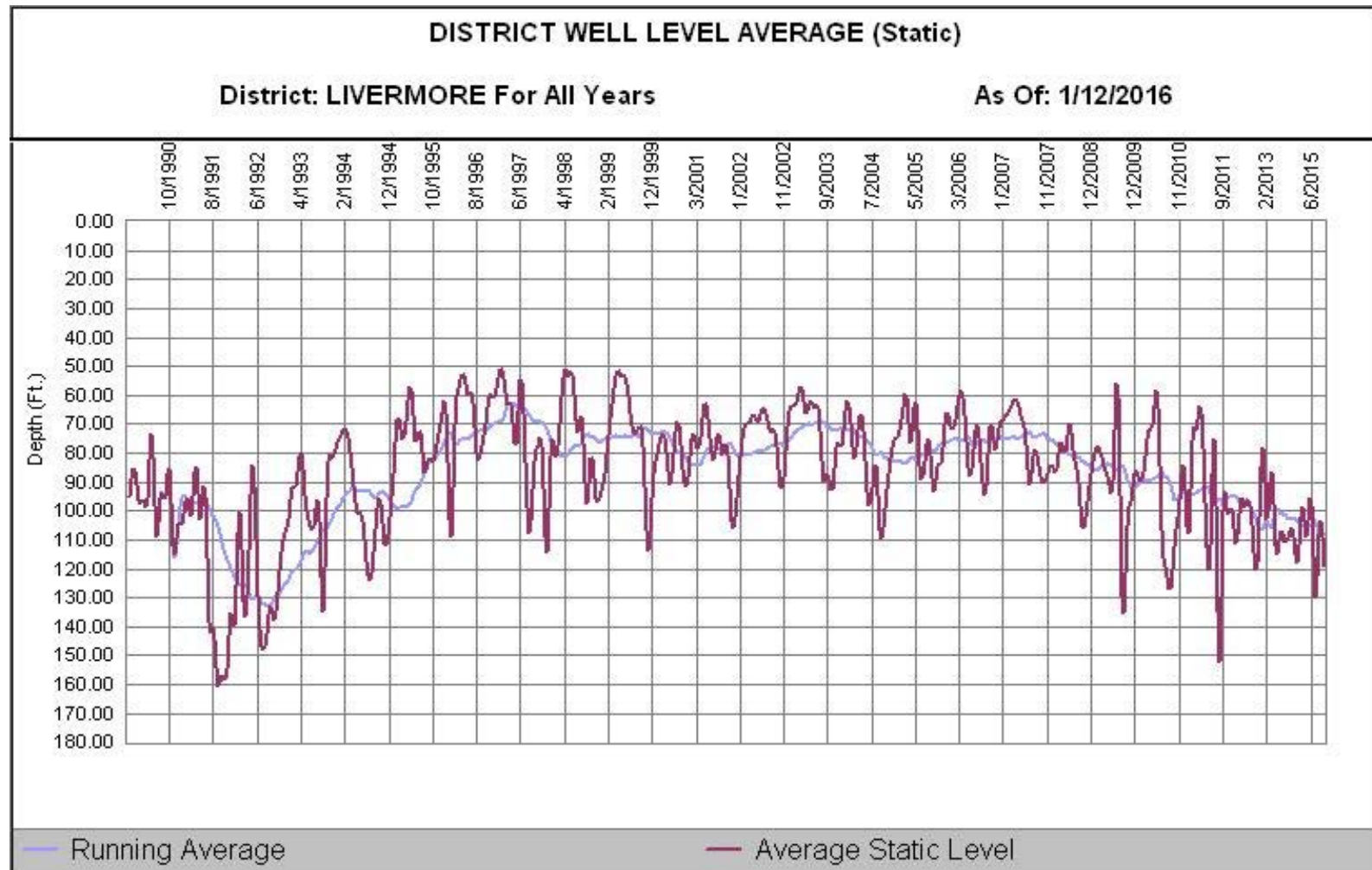
- 1) Eto values based on California Irrigation Management Information System (CIMIS), <http://www.cimis.water.ca.gov/cimis/welcome.jsp>, EvapoTranspiration (Eto) Zones Map, Zone 8  
2) PPT, Tmax, Tmin obtained from PRISM where, PPT is total monthly rainfall, Tmax is average of maximum temperatures for given month, and Tmin is average of minimum temperatures for given month  
3) Percent variation based on average of 1980 to present values

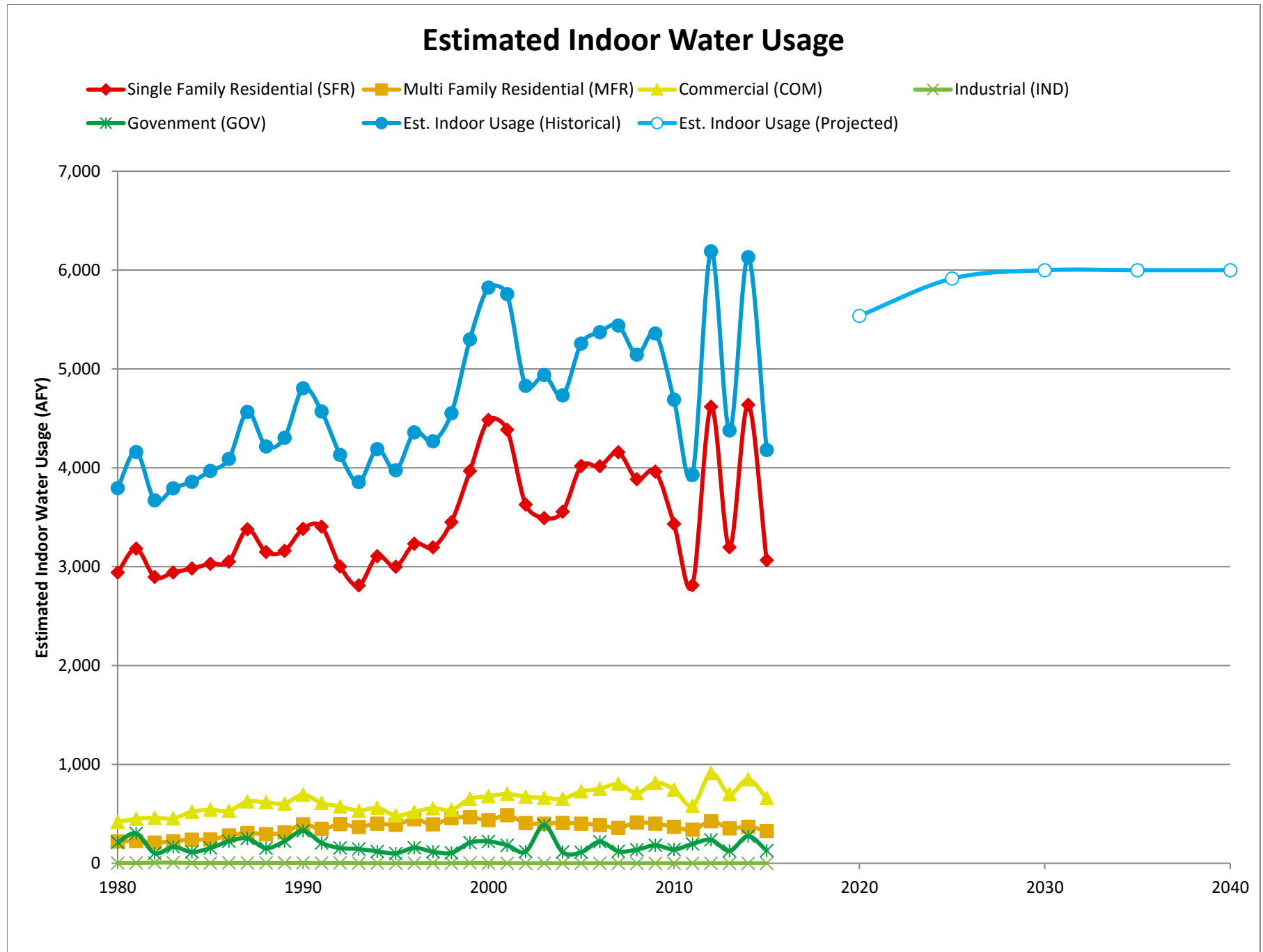
## Average Monthly Temperature, Rainfall, and Monthly Eto



**California Water Service Company - Livermore District**  
**Water Supply and Demand Analysis and Projections**  
**Groundwater Facilities**

Worksheet 14





# California Water Service Company - Livermore District

## Water Supply and Demand Analysis and Projections

### Estimated Indoor/Outdoor Water Usage

| Year | Single Family Residential (SFR) |                                                          |          |                              |                        |          |     | Multi Family Residential (MFR) |                                                  |          |     | Commercial (COM) |                                                  |          |     |
|------|---------------------------------|----------------------------------------------------------|----------|------------------------------|------------------------|----------|-----|--------------------------------|--------------------------------------------------|----------|-----|------------------|--------------------------------------------------|----------|-----|
|      | SFR Jan Usage                   | Metered SFR Indoor Use (Annualized 90% of January Total) |          | Indoor Flat Rate Usage (AFY) | Total SFR Indoor Usage |          |     | MFR Jan Usage                  | MFR Indoor Use (Annualized 90% of January Total) |          |     | COM Jan Usage    | COM Indoor Use (Annualized 90% of January Total) |          |     |
|      | JAN (CCF)                       | AFY                                                      | GPD/Serv |                              | AFY                    | GPD/Serv | %   | (CCF)                          | AFY                                              | GPD/Serv | %   | (CCF)            | AFY                                              | GPD/Serv | %   |
| 1980 | 118,681                         | 2,943                                                    | 0.247    | 0                            | 2,943                  | 221      | 55% | 8,899                          | 221                                              | 4,377    | 78% | 16,863           | 418                                              | 623      | 70% |
| 1981 | 128,336                         | 3,182                                                    | 0.267    | 0                            | 3,182                  | 238      | 57% | 9,072                          | 225                                              | 4,462    | 77% | 18,120           | 449                                              | 659      | 69% |
| 1982 | 116,790                         | 2,896                                                    | 0.242    | 0                            | 2,896                  | 216      | 56% | 8,401                          | 208                                              | 4,132    | 73% | 18,529           | 459                                              | 674      | 70% |
| 1983 | 118,659                         | 2,942                                                    | 0.243    | 0                            | 2,942                  | 217      | 57% | 9,018                          | 224                                              | 4,436    | 71% | 18,318           | 454                                              | 660      | 65% |
| 1984 | 120,244                         | 2,981                                                    | 0.243    | 0                            | 2,981                  | 217      | 51% | 9,663                          | 240                                              | 4,762    | 74% | 21,005           | 521                                              | 740      | 63% |
| 1985 | 122,181                         | 3,029                                                    | 0.245    | 0                            | 3,029                  | 219      | 53% | 9,706                          | 241                                              | 4,662    | 67% | 21,852           | 542                                              | 742      | 61% |
| 1986 | 123,104                         | 3,052                                                    | 0.245    | 0                            | 3,052                  | 219      | 52% | 11,327                         | 281                                              | 5,372    | 66% | 21,413           | 531                                              | 719      | 58% |
| 1987 | 136,222                         | 3,377                                                    | 0.269    | 0                            | 3,377                  | 240      | 56% | 12,388                         | 307                                              | 5,982    | 74% | 25,206           | 625                                              | 818      | 61% |
| 1988 | 127,027                         | 3,149                                                    | 0.248    | 0                            | 3,149                  | 222      | 54% | 11,901                         | 295                                              | 5,854    | 70% | 24,860           | 616                                              | 809      | 60% |
| 1989 | 127,472                         | 3,160                                                    | 0.246    | 0                            | 3,160                  | 219      | 56% | 12,604                         | 312                                              | 5,792    | 74% | 24,369           | 604                                              | 793      | 57% |
| 1990 | 136,488                         | 3,384                                                    | 0.260    | 0                            | 3,384                  | 232      | 56% | 15,912                         | 395                                              | 4,926    | 78% | 27,979           | 694                                              | 923      | 68% |
| 1991 | 137,321                         | 3,405                                                    | 0.258    | 0                            | 3,405                  | 230      | 69% | 14,053                         | 348                                              | 4,147    | 72% | 24,590           | 610                                              | 795      | 67% |
| 1992 | 121,139                         | 3,003                                                    | 0.225    | 0                            | 3,003                  | 201      | 54% | 15,938                         | 395                                              | 4,683    | 73% | 23,168           | 574                                              | 746      | 58% |
| 1993 | 113,355                         | 2,810                                                    | 0.208    | 0                            | 2,810                  | 186      | 49% | 14,764                         | 366                                              | 4,314    | 68% | 21,466           | 532                                              | 684      | 54% |
| 1994 | 125,302                         | 3,107                                                    | 0.227    | 0                            | 3,107                  | 202      | 52% | 16,192                         | 401                                              | 4,768    | 72% | 22,611           | 561                                              | 708      | 57% |
| 1995 | 121,010                         | 3,000                                                    | 0.216    | 0                            | 3,000                  | 192      | 49% | 15,723                         | 390                                              | 4,630    | 67% | 19,510           | 484                                              | 613      | 49% |
| 1996 | 130,377                         | 3,232                                                    | 0.227    | 0                            | 3,232                  | 203      | 48% | 17,999                         | 446                                              | 5,312    | 73% | 20,986           | 520                                              | 652      | 49% |
| 1997 | 128,927                         | 3,197                                                    | 0.219    | 0                            | 3,197                  | 195      | 43% | 15,930                         | 395                                              | 4,701    | 64% | 22,465           | 557                                              | 689      | 49% |
| 1998 | 139,180                         | 3,451                                                    | 0.231    | 0                            | 3,451                  | 206      | 52% | 18,406                         | 456                                              | 5,432    | 76% | 21,755           | 539                                              | 657      | 53% |
| 1999 | 160,080                         | 3,969                                                    | 0.261    | 0                            | 3,969                  | 233      | 53% | 18,823                         | 467                                              | 5,555    | 75% | 26,296           | 652                                              | 774      | 61% |
| 2000 | 180,885                         | 4,485                                                    | 0.293    | 0                            | 4,485                  | 262      | 58% | 17,592                         | 436                                              | 5,192    | 69% | 27,348           | 678                                              | 752      | 60% |
| 2001 | 176,899                         | 4,386                                                    | 0.284    | 0                            | 4,386                  | 253      | 55% | 19,592                         | 486                                              | 5,782    | 81% | 28,294           | 702                                              | 743      | 61% |
| 2002 | 146,361                         | 3,629                                                    | 0.231    | 0                            | 3,629                  | 206      | 43% | 16,474                         | 408                                              | 4,862    | 73% | 27,182           | 674                                              | 700      | 55% |
| 2003 | 140,850                         | 3,492                                                    | 0.222    | 0                            | 3,492                  | 198      | 43% | 16,152                         | 400                                              | 4,788    | 68% | 26,686           | 662                                              | 673      | 54% |
| 2004 | 143,450                         | 3,557                                                    | 0.219    | 0                            | 3,557                  | 196      | 41% | 16,465                         | 408                                              | 4,859    | 68% | 26,344           | 653                                              | 649      | 51% |
| 2005 | 162,042                         | 4,018                                                    | 0.244    | 0                            | 4,018                  | 218      | 48% | 16,185                         | 401                                              | 4,777    | 74% | 29,343           | 728                                              | 702      | 56% |
| 2006 | 161,968                         | 4,016                                                    | 0.243    | 0                            | 4,016                  | 216      | 47% | 15,583                         | 386                                              | 4,599    | 72% | 30,331           | 752                                              | 721      | 55% |
| 2007 | 167,670                         | 4,157                                                    | 0.250    | 0                            | 4,157                  | 224      | 47% | 14,471                         | 359                                              | 4,271    | 66% | 32,387           | 803                                              | 765      | 56% |
| 2008 | 156,664                         | 3,884                                                    | 0.235    | 0                            | 3,884                  | 210      | 46% | 16,639                         | 413                                              | 4,878    | 72% | 28,592           | 709                                              | 634      | 47% |
| 2009 | 159,805                         | 3,962                                                    | 0.241    | 0                            | 3,962                  | 215      | 52% | 16,150                         | 400                                              | 4,714    | 71% | 32,828           | 814                                              | 710      | 55% |
| 2010 | 138,489                         | 3,434                                                    | 0.208    | 0                            | 3,434                  | 186      | 49% | 14,928                         | 370                                              | 4,273    | 66% | 30,096           | 746                                              | 652      | 54% |
| 2011 | 113,471                         | 2,813                                                    | 0.169    | 0                            | 2,813                  | 151      | 40% | 13,664                         | 339                                              | 3,644    | 61% | 23,420           | 581                                              | 504      | 42% |
| 2012 | 186,226                         | 4,617                                                    | 0.278    | 0                            | 4,617                  | 248      | 61% | 17,146                         | 425                                              | 4,596    | 76% | 36,751           | 911                                              | 795      | 61% |
| 2013 | 128,924                         | 3,196                                                    | 0.192    | 0                            | 3,196                  | 171      | 41% | 14,283                         | 354                                              | 3,775    | 65% | 28,265           | 701                                              | 614      | 47% |
| 2014 | 187,063                         | 4,638                                                    | 0.278    | 0                            | 4,638                  | 248      | 82% | 14,893                         | 369                                              | 3,760    | 83% | 34,270           | 850                                              | 749      | 71% |
| 2015 | 123,597                         | 3,064                                                    |          | 0                            | 3,064                  |          |     | 13,203                         | 327                                              |          |     | 26,643           | 661                                              |          |     |
| 2020 |                                 |                                                          |          |                              | 3,873                  | 205      |     |                                | 540                                              | 3,944    |     |                  | 916                                              | 666      |     |
| 2025 |                                 |                                                          |          |                              | 3,900                  | 205      |     |                                | 689                                              | 3,944    |     |                  | 1,113                                            | 666      |     |
| 2030 |                                 |                                                          |          |                              | 3,906                  | 205      |     |                                | 723                                              | 3,944    |     |                  | 1,158                                            | 666      |     |
| 2035 |                                 |                                                          |          |                              | 3,906                  | 205      |     |                                | 723                                              | 3,944    |     |                  | 1,158                                            | 666      |     |
| 2040 |                                 |                                                          |          |                              | 3,906                  | 205      |     |                                | 723                                              | 3,944    |     |                  | 1,158                                            | 666      |     |

Note: GPD/Service is estimated as the average of the last 5 years for given customer class.

# California Water Service Company - Livermore District

## Water Supply and Demand Analysis and Projections

### Estimated Indoor/Outdoor Water Usage

| Year | Industrial (IND) |                                                     |          |       | Govenment (GOV) |                                                     |          |     |
|------|------------------|-----------------------------------------------------|----------|-------|-----------------|-----------------------------------------------------|----------|-----|
|      | IND Jan Usage    | IND Indoor Use<br>(Annualized 90% of January Total) |          |       | GOV Jan Usage   | GOV Indoor Use<br>(Annualized 90% of January Total) |          |     |
|      | (CCF)            | AFY                                                 | GPD/Serv | %     | (CCF)           | AFY                                                 | GPD/Serv | %   |
| 1980 | 110              | 3                                                   | 276      | 47%   | 8,491           | 211                                                 | 1,616    | 27% |
| 1981 | 135              | 3                                                   | 355      | 64%   | 12,174          | 302                                                 | 2,316    | 36% |
| 1982 | 264              | 7                                                   | 730      | 106%  | 4,103           | 102                                                 | 775      | 14% |
| 1983 | 265              | 7                                                   | 733      | 108%  | 6,703           | 166                                                 | 1,269    | 22% |
| 1984 | 139              | 3                                                   | 166      | 29%   | 4,611           | 114                                                 | 875      | 12% |
| 1985 | 118              | 3                                                   | 326      | 60%   | 6,214           | 154                                                 | 1,162    | 17% |
| 1986 | 127              | 3                                                   | 351      | 58%   | 8,965           | 222                                                 | 1,632    | 23% |
| 1987 | 132              | 3                                                   | 381      | 59%   | 10,171          | 252                                                 | 1,843    | 29% |
| 1988 | 130              | 3                                                   | 480      | 60%   | 6,180           | 153                                                 | 1,163    | 17% |
| 1989 | 149              | 4                                                   | 550      | 53%   | 8,989           | 223                                                 | 1,592    | 27% |
| 1990 | 145              | 4                                                   | 642      | 60%   | 13,275          | 329                                                 | 2,302    | 36% |
| 1991 | 90               | 2                                                   | 398      | 57%   | 8,302           | 206                                                 | 1,452    | 32% |
| 1992 | 149              | 4                                                   | 733      | 41%   | 6,222           | 154                                                 | 1,078    | 20% |
| 1993 | 78               | 2                                                   | 575      | 25%   | 5,826           | 144                                                 | 993      | 18% |
| 1994 | 50               | 1                                                   | 369      | 26%   | 4,835           | 120                                                 | 816      | 16% |
| 1995 | 22               | 1                                                   | 162      | 13%   | 4,032           | 100                                                 | 674      | 12% |
| 1996 | 79               | 2                                                   | 583      | 27%   | 6,315           | 157                                                 | 1,052    | 19% |
| 1997 | 90               | 2                                                   | 664      | 48%   | 4,696           | 116                                                 | 779      | 13% |
| 1998 | 9                | 0                                                   | 66       | 5%    | 4,241           | 105                                                 | 673      | 15% |
| 1999 | 189              | 5                                                   | 1,394    | 93%   | 8,399           | 208                                                 | 1,306    | 25% |
| 2000 | 84               | 2                                                   | 620      | 78%   | 8,915           | 221                                                 | 1,211    | 24% |
| 2001 | 18               | 0                                                   | 171      | 130%  | 7,359           | 182                                                 | 915      | 20% |
| 2002 | 6                | 0                                                   | 94       | 53%   | 4,781           | 119                                                 | 599      | 12% |
| 2003 | 32               | 1                                                   | 708      | 247%  | 15,530          | 385                                                 | 1,959    | 42% |
| 2004 | 8                | 0                                                   | 177      | 102%  | 4,580           | 114                                                 | 577      | 12% |
| 2005 | 0                | 0                                                   | 0        | 0%    | 4,497           | 111                                                 | 571      | 14% |
| 2006 | 1                | 0                                                   | 22       | 6%    | 8,823           | 219                                                 | 1,084    | 25% |
| 2007 | 0                | 0                                                   | 0        | ##### | 4,891           | 121                                                 | 601      | 13% |
| 2008 | 0                | 0                                                   | 0        | 0%    | 5,573           | 138                                                 | 589      | 13% |
| 2009 | 0                | 0                                                   | 0        | 0%    | 7,335           | 182                                                 | 695      | 18% |
| 2010 | 0                | 0                                                   | 0        | 0%    | 5,654           | 140                                                 | 535      | 16% |
| 2011 | 0                | 0                                                   | 0        | 0%    | 7,901           | 196                                                 | 743      | 22% |
| 2012 | 0                | 0                                                   | 0        | 0%    | 9,559           | 237                                                 | 900      | 24% |
| 2013 | 0                | 0                                                   | 0        | 0%    | 5,089           | 126                                                 | 481      | 12% |
| 2014 | 0                | 0                                                   | 0        | 0%    | 11,071          | 274                                                 | 1,050    | 40% |
| 2015 | 0                | 0                                                   | 0        | 0%    | 5,211           | 129                                                 |          |     |
| 2020 |                  | 0                                                   | 0        |       |                 | 209                                                 | 794      |     |
| 2025 |                  | 0                                                   | 0        |       |                 | 212                                                 | 794      |     |
| 2030 |                  | 0                                                   | 0        |       |                 | 212                                                 | 794      |     |
| 2035 |                  | 0                                                   | 0        |       |                 | 212                                                 | 794      |     |
| 2040 |                  | 0                                                   | 0        |       |                 | 212                                                 | 794      |     |

| Estimated Indoor/Outdoor Usage |                    |                   |                    |
|--------------------------------|--------------------|-------------------|--------------------|
| Est. Indoor Usage              | Est. Outdoor Usage | Est. Indoor Usage | Est. Outdoor Usage |
| AFY                            | AFY                | %                 | %                  |
| 3,794                          | 3,182              | 54%               | 46%                |
| 4,161                          | 2,873              | 59%               | 41%                |
| 3,672                          | 3,406              | 52%               | 48%                |
| 3,792                          | 3,621              | 51%               | 49%                |
| 3,859                          | 4,563              | 46%               | 54%                |
| 3,969                          | 4,381              | 48%               | 52%                |
| 4,089                          | 4,250              | 49%               | 51%                |
| 4,565                          | 4,102              | 53%               | 47%                |
| 4,217                          | 4,416              | 49%               | 51%                |
| 4,304                          | 4,421              | 49%               | 51%                |
| 4,805                          | 3,782              | 56%               | 44%                |
| 4,571                          | 2,328              | 66%               | 34%                |
| 4,131                          | 3,914              | 51%               | 49%                |
| 3,855                          | 4,320              | 47%               | 53%                |
| 4,190                          | 4,563              | 48%               | 52%                |
| 3,974                          | 5,376              | 43%               | 57%                |
| 4,358                          | 5,086              | 46%               | 54%                |
| 4,267                          | 6,258              | 41%               | 59%                |
| 4,552                          | 5,169              | 47%               | 53%                |
| 5,301                          | 5,491              | 49%               | 51%                |
| 5,822                          | 5,385              | 52%               | 48%                |
| 5,756                          | 5,105              | 53%               | 47%                |
| 4,830                          | 6,644              | 42%               | 58%                |
| 4,940                          | 7,026              | 41%               | 59%                |
| 4,732                          | 7,824              | 38%               | 62%                |
| 5,258                          | 6,158              | 46%               | 54%                |
| 5,373                          | 6,683              | 45%               | 55%                |
| 5,440                          | 6,977              | 44%               | 56%                |
| 5,144                          | 7,116              | 42%               | 58%                |
| 5,358                          | 5,656              | 49%               | 51%                |
| 4,690                          | 5,570              | 46%               | 54%                |
| 3,929                          | 6,368              | 38%               | 62%                |
| 6,190                          | 4,629              | 57%               | 43%                |
| 4,378                          | 7,057              | 38%               | 62%                |
| 6,131                          | 2,137              | 74%               | 26%                |
| 4,182                          | 2,643              | 61%               | 39%                |
| 5,537                          | 6,916              | 44%               | 56%                |
| 5,914                          | 7,251              | 45%               | 55%                |
| 5,999                          | 7,325              | 45%               | 55%                |
| 5,999                          | 7,325              | 45%               | 55%                |
| 5,999                          | 7,325              | 45%               | 55%                |

# California Water Service Company - Livermore District

Worksheet 17

## Water Supply and Demand Analysis and Projections

### Comparison of Projected Demand and Conservation Savings Between SBx7-7 Compliance Targets and Actual Proposed Programs

| Year              | SBx7-7 Compliance Target (gpcd) | Anticipated GPCD with Proposed Programs* | Estimated Population | Unadjusted SBx7-7 Baseline Demand (AFY) | SBx7-7 Compliance Target Demand (AFY) | Anticipated Demand with Proposed Programs (AFY) | Compliance Target Savings Requirement (AFY) | Savings Due to Proposed Programs (AFY) |
|-------------------|---------------------------------|------------------------------------------|----------------------|-----------------------------------------|---------------------------------------|-------------------------------------------------|---------------------------------------------|----------------------------------------|
| 2005-2009 Average | 194                             | 194                                      | 54,359               | 11,832                                  | 11,832                                | 11,832                                          | 0                                           | 0                                      |
| 2010              | 194                             | 194                                      | 56,956               | 12,399                                  | 12,398                                | 12,398                                          | 1                                           | 1                                      |
| 2011              | 191                             | 194                                      | 57,644               | 12,548                                  | 12,337                                | 12,526                                          | 212                                         | 22                                     |
| 2012              | 188                             | 192                                      | 58,372               | 12,707                                  | 12,279                                | 12,554                                          | 428                                         | 153                                    |
| 2013              | 185                             | 190                                      | 59,144               | 12,875                                  | 12,225                                | 12,587                                          | 650                                         | 287                                    |
| 2014              | 181                             | 187                                      | 59,961               | 13,053                                  | 12,175                                | 12,560                                          | 878                                         | 493                                    |
| 2015              | 178                             | 185                                      | 60,827               | 13,241                                  | 12,128                                | 12,605                                          | 1,113                                       | 636                                    |
| 2016              | 174                             | 180                                      | 61,745               | 13,441                                  | 12,034                                | 12,422                                          | 1,407                                       | 1,019                                  |
| 2017              | 170                             | 174                                      | 62,717               | 13,653                                  | 11,943                                | 12,238                                          | 1,710                                       | 1,415                                  |
| 2018              | 166                             | 169                                      | 63,748               | 13,877                                  | 11,853                                | 12,053                                          | 2,023                                       | 1,824                                  |
| 2019              | 162                             | 163                                      | 64,840               | 14,115                                  | 11,766                                | 11,868                                          | 2,349                                       | 2,247                                  |
| 2020              | 158                             | 158                                      | 65,998               | 14,367                                  | 11,681                                | 11,681                                          | 2,686                                       | 2,686                                  |
| 2021              | 158                             | 158                                      | 67,226               | 14,634                                  | 11,898                                | 11,898                                          | 2,736                                       | 2,736                                  |
| 2022              | 158                             | 158                                      | 68,527               | 14,917                                  | 12,128                                | 12,128                                          | 2,789                                       | 2,789                                  |
| 2023              | 158                             | 158                                      | 69,906               | 15,218                                  | 12,372                                | 12,372                                          | 2,845                                       | 2,845                                  |
| 2024              | 158                             | 158                                      | 71,368               | 15,536                                  | 12,631                                | 12,631                                          | 2,905                                       | 2,905                                  |
| 2025              | 158                             | 158                                      | 72,918               | 15,873                                  | 12,905                                | 12,905                                          | 2,968                                       | 2,968                                  |
| 2026              | 158                             | 158                                      | 73,034               | 15,898                                  | 12,926                                | 12,926                                          | 2,973                                       | 2,973                                  |
| 2027              | 158                             | 158                                      | 73,150               | 15,924                                  | 12,946                                | 12,946                                          | 2,977                                       | 2,977                                  |
| 2028              | 158                             | 158                                      | 73,265               | 15,949                                  | 12,967                                | 12,967                                          | 2,982                                       | 2,982                                  |
| 2029              | 158                             | 158                                      | 73,381               | 15,974                                  | 12,987                                | 12,987                                          | 2,987                                       | 2,987                                  |
| 2030              | 158                             | 158                                      | 73,497               | 15,999                                  | 13,008                                | 13,008                                          | 2,992                                       | 2,992                                  |
| 2031              | 158                             | 158                                      | 73,612               | 16,024                                  | 13,028                                | 13,028                                          | 2,996                                       | 2,996                                  |
| 2032              | 158                             | 158                                      | 73,728               | 16,050                                  | 13,049                                | 13,049                                          | 3,001                                       | 3,001                                  |
| 2033              | 158                             | 158                                      | 73,844               | 16,075                                  | 13,069                                | 13,069                                          | 3,006                                       | 3,006                                  |
| 2034              | 158                             | 158                                      | 73,960               | 16,100                                  | 13,090                                | 13,090                                          | 3,010                                       | 3,010                                  |
| 2035              | 158                             | 158                                      | 74,075               | 16,125                                  | 13,110                                | 13,110                                          | 3,015                                       | 3,015                                  |
| 2036              | 158                             | 158                                      | 74,191               | 16,150                                  | 13,131                                | 13,131                                          | 3,020                                       | 3,020                                  |
| 2037              | 158                             | 158                                      | 74,307               | 16,176                                  | 13,151                                | 13,151                                          | 3,025                                       | 3,025                                  |
| 2038              | 158                             | 158                                      | 74,423               | 16,201                                  | 13,172                                | 13,172                                          | 3,029                                       | 3,029                                  |
| 2039              | 158                             | 158                                      | 74,538               | 16,226                                  | 13,192                                | 13,192                                          | 3,034                                       | 3,034                                  |
| 2040              | 158                             | 158                                      | 74,654               | 16,251                                  | 13,212                                | 13,212                                          | 3,039                                       | 3,039                                  |

\*Note: The district is not projected to achieve its district-specific 2015 SBx7-7 compliance target through the proposed 2011-2015 conservation program portfolio. The district will achieve compliance with its 2015 SBx7-7 compliance target through a regional alliance. For the purpose of this analysis it is assumed that there will be a linear reduction in GPCD from 2015-2020 to achieve the district-specific 2020 SBx7-7 compliance target. The district may

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