



Update: Local Water Demand Projections, Version 1



Metro Area Water Supply Technical Advisory Committee | June 18, 2024 | Greg Johnson

Recap on Purpose of Demand Projections

Support Regional and Subregional Planning

The Met Council water demand projections are intended to:

1. Provide guidance for communities as they develop content for the water supply plan section of their comprehensive plan.
2. Help Met Council planners and policy makers, state agencies, and community planners to plan for future growth and address regional issues. These projections can help us understand where future water demand might bump up against, or exceed existing capacity - or where there is plenty of capacity to support growth.
3. Provide subregional and regional water demand data for Met Council's groundwater modeling projects, surface water analyses, and other studies.
4. Compare wastewater discharge volumes from each community to wintertime water use.
5. Estimate projected water use for each of Met Council's wastewater treatment plant sewersheds.
6. Review impacts from employment water demands.

Local Water Demand Projections (1 of 2)

Total Metro Region Water Demand =
Projected Municipal Water Use +
Projected Private High Capacity Well Use

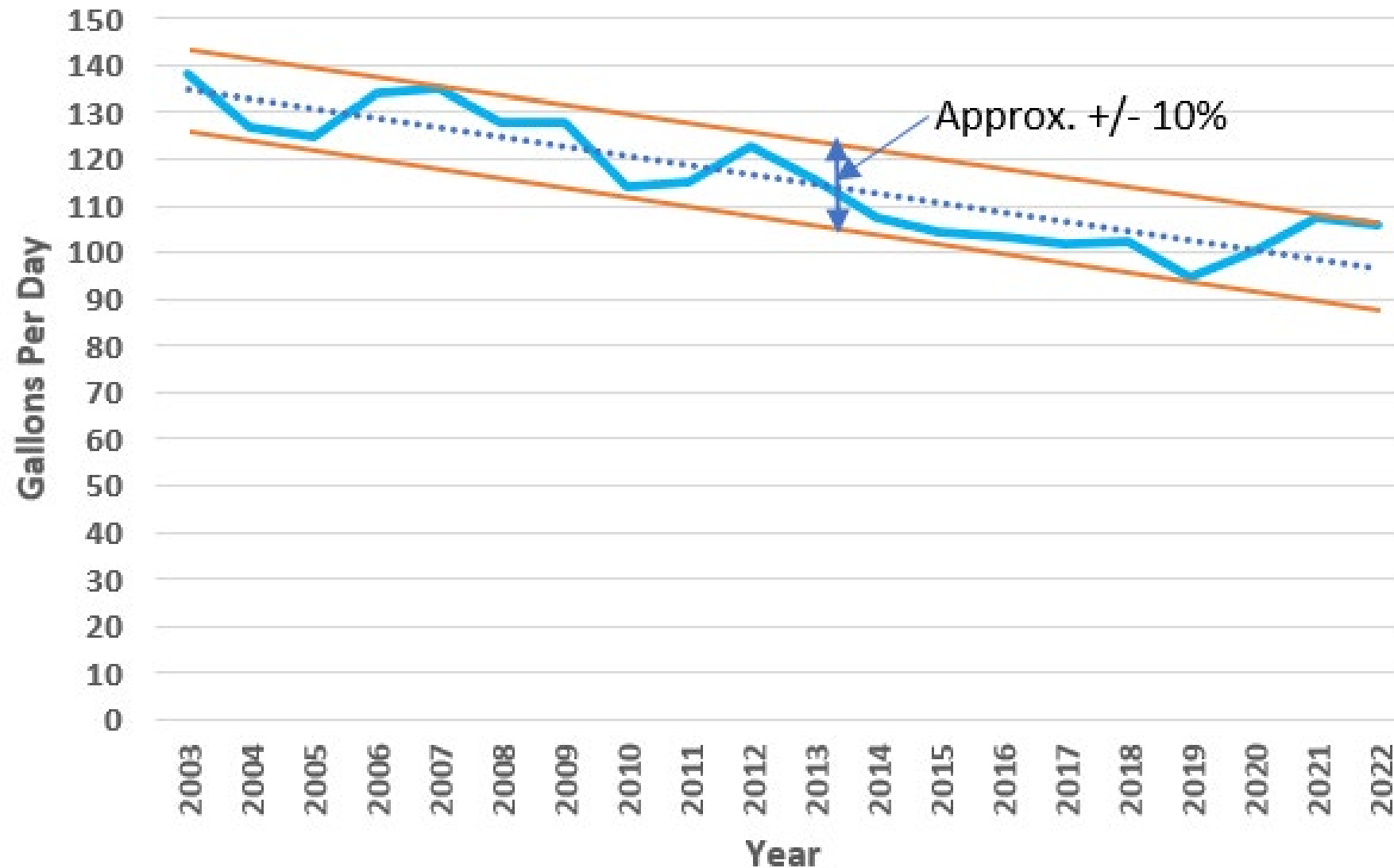
Local Water Demand Projections (2 of 2)

Use Met Council's population forecast for each community, the average per capita demand from 2013-2022 for each community, and a variable range to represent a range of possible future water use as follows:

**Projected Municipal Water Use = [Projected Water Service Population]
x [2013-2022 Average Total Per Capita Water Use] with a Variable Range**

Variable Range Analysis (2003-2022)

Municipal Total Gallons Per Capita Per Day 2003-2022



Variable Range Analysis

Examples of communities with historical water use (2013-2022) that exceeded a variable range greater than +/-10% include:

| | |
|-------------------------|----------|
| City of White Bear Lake | +/-14.2% |
| City of Lexington | +/-22.2% |
| City of New Germany | +/-17.1% |
| City of South St. Paul | +/-33.8% |

Potential reasons to use greater than +/-10% include changes in industry, drier and wetter years, and rapid and unforeseen residential growth.

Variable Range Analysis Recommendations

Recommendations:

1. Use a variable range of +/-10% when looking at the combined metro region water use as a whole.
2. Use a variable range of +/-20% when thinking about water use for individual communities to account for extreme weather patterns and rapid and unforeseen industrial, residential, and commercial growth for water system planning and adjusting water utility rates.

Local Water Demand Projections

Total Annual Water Demand (Year) =

**Projected Municipal Water Use = [Projected Water Service Population]
x [2013-2022 Average Total Per Capita Water Use]
with a Variable Range (+/-10 and +/-20%)**

+

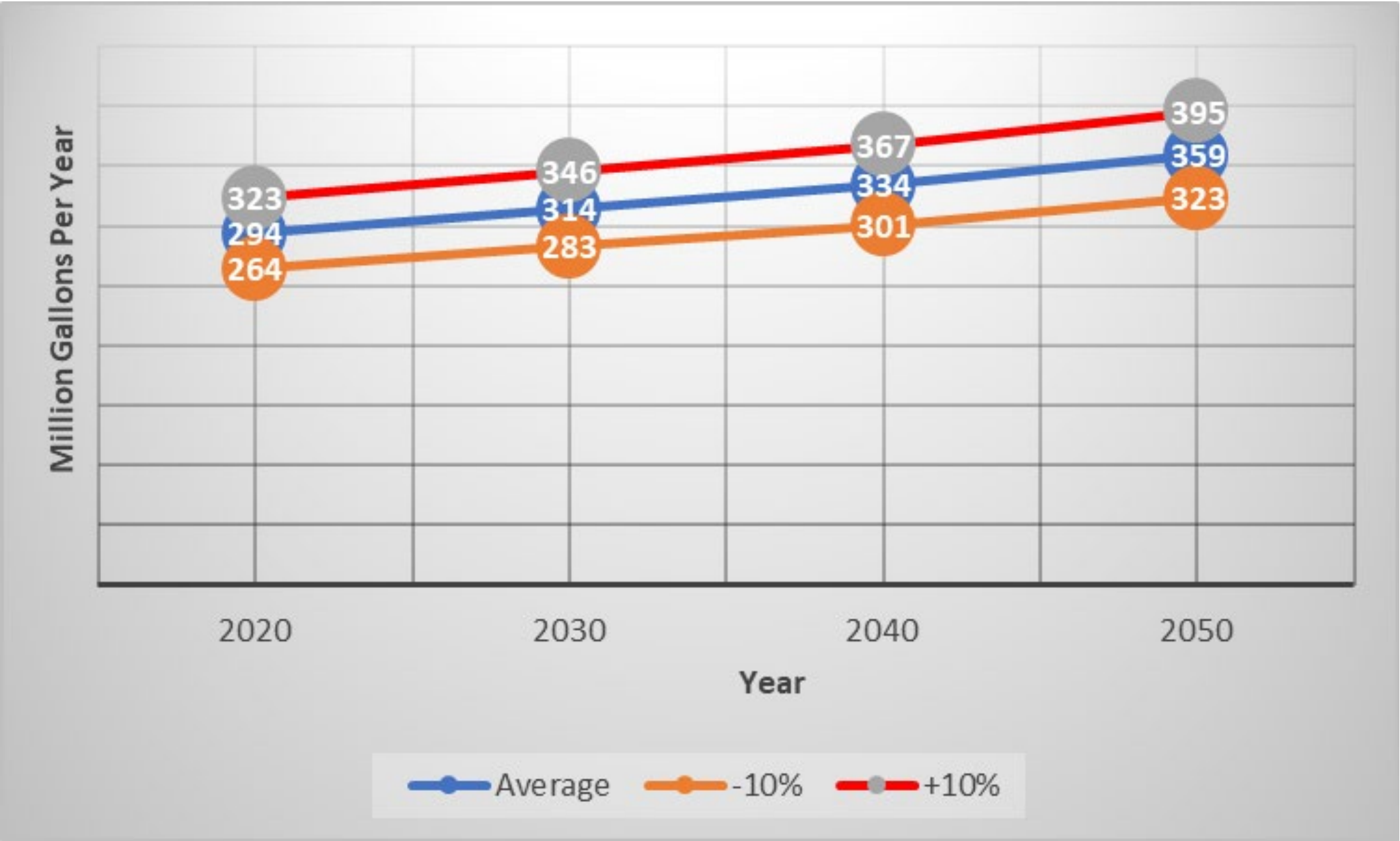
**Projected Private High Capacity Water Use = [2022 Total Water Use]
x [2013-2022 Average Annual Percent Increase Water Use] x Years
with a Variable Range (+/-10 and +/-20%)**

Municipal Water Demand Projections – Version 1 (1 of 2)

2030, 2040, and 2050 Municipal Water Demand Projections - Version 1

| | 2013-2022 Average Individual Community TGPCD | 2030 Projected Service Population | 2030 Projected Avg. Daily Water Use (Million Gallons/Day) | | | | 2040 Projected Service Population | 2040 Projected Avg. Daily Water Use (Million Gallons/Day) | | | | 2050 Projected Service Population | 2050 Projected Avg. Daily Water Use (Million Gallons/Day) | | | | | | |
|-----------------|--|--|---|-------|--------|-------|--|---|-------|-------|--------|--|---|--------|--------|-------|--------|-------|--------|
| | | | -10% | +10% | -20% | +20% | | -10% | +10% | -20% | +20% | | -10% | +10% | -20% | +20% | | | |
| Andover | 127.19 | 23,711 | 3.016 | 2.714 | 3.317 | 2.413 | 3.619 | 25,091 | 3.191 | 2.872 | 3.510 | 2.553 | 3.830 | 27,287 | 3.471 | 3.124 | 3.818 | 2.777 | 4.165 |
| Anoka | 123.50 | 21,732 | 2.684 | 2.416 | 2.952 | 2.147 | 3.221 | 22,146 | 2.735 | 2.462 | 3.009 | 2.188 | 3.282 | 23,422 | 2.893 | 2.603 | 3.182 | 2.314 | 3.471 |
| Apple Valley | 112.12 | 56,040 | 6.283 | 5.655 | 6.912 | 5.027 | 7.540 | 58,180 | 6.523 | 5.871 | 7.175 | 5.219 | 7.828 | 60,351 | 6.767 | 6.090 | 7.443 | 5.413 | 8.120 |
| Bayport | 114.64 | 2,559 | 0.293 | 0.264 | 0.323 | 0.235 | 0.352 | 2,795 | 0.320 | 0.288 | 0.352 | 0.256 | 0.385 | 3,000 | 0.344 | 0.310 | 0.378 | 0.275 | 0.413 |
| Belle Plaine | 91.59 | 8,630 | 0.790 | 0.711 | 0.869 | 0.632 | 0.948 | 10,139 | 0.929 | 0.836 | 1.021 | 0.743 | 1.114 | 14,127 | 1.294 | 1.164 | 1.423 | 1.035 | 1.553 |
| Bloomington | 103.69 | 72,247 | 7.491 | 6.742 | 8.240 | 5.993 | 8.990 | 76,420 | 7.924 | 7.132 | 8.716 | 6.339 | 9.509 | 86,358 | 8.955 | 8.059 | 9.850 | 7.164 | 10.745 |
| Brooklyn Center | 94.46 | 30,241 | 2.857 | 2.571 | 3.142 | 2.285 | 3.428 | 31,752 | 2.999 | 2.699 | 3.299 | 2.400 | 3.599 | 32,891 | 3.107 | 2.796 | 3.418 | 2.486 | 3.728 |
| Brooklyn Park | 103.91 | 84,112 | 8.740 | 7.866 | 9.614 | 6.992 | 10.488 | 87,458 | 9.088 | 8.179 | 9.997 | 7.270 | 10.905 | 91,295 | 9.486 | 8.538 | 10.435 | 7.589 | 11.384 |
| Burnsville | 141.30 | 66,605 | 9.411 | 8.470 | 10.353 | 7.529 | 11.294 | 70,310 | 9.935 | 8.941 | 10.928 | 7.948 | 11.922 | 75,200 | 10.626 | 9.563 | 11.688 | 8.501 | 12.751 |
| Carver | 86.82 | 5,951 | 0.517 | 0.465 | 0.568 | 0.413 | 0.620 | 7,236 | 0.628 | 0.565 | 0.691 | 0.503 | 0.754 | 11,065 | 0.961 | 0.865 | 1.057 | 0.769 | 1.153 |
| Centerville | 70.78 | 4,434 | 0.314 | 0.282 | 0.345 | 0.251 | 0.377 | 4,701 | 0.333 | 0.299 | 0.366 | 0.266 | 0.399 | 5,058 | 0.358 | 0.322 | 0.394 | 0.286 | 0.430 |
| Champlin | 98.34 | 24,451 | 2.405 | 2.164 | 2.645 | 1.924 | 2.885 | 25,021 | 2.461 | 2.215 | 2.707 | 1.968 | 2.953 | 24,894 | 2.448 | 2.203 | 2.693 | 1.958 | 2.938 |
| Chanhassen | 107.44 | 28,231 | 3.033 | 2.730 | 3.336 | 2.426 | 3.640 | 29,992 | 3.222 | 2.900 | 3.545 | 2.578 | 3.867 | 31,990 | 3.437 | 3.093 | 3.781 | 2.750 | 4.124 |
| Chaska | 112.47 | 28,544 | 3.210 | 2.889 | 3.531 | 2.568 | 3.852 | 31,034 | 3.490 | 3.141 | 3.839 | 2.792 | 4.188 | 35,938 | 4.042 | 3.638 | 4.446 | 3.233 | 4.850 |
| Circle Pines | 80.63 | 5,140 | 0.414 | 0.373 | 0.456 | 0.332 | 0.497 | 5,429 | 0.438 | 0.394 | 0.482 | 0.350 | 0.525 | 5,700 | 0.460 | 0.414 | 0.506 | 0.368 | 0.552 |
| Cologne | 77.51 | 2,231 | 0.173 | 0.156 | 0.190 | 0.138 | 0.208 | 2,702 | 0.209 | 0.189 | 0.230 | 0.168 | 0.251 | 3,432 | 0.266 | 0.239 | 0.293 | 0.213 | 0.319 |
| Columbus | 100.00 | 632 | 0.055 | 0.050 | 0.061 | 0.044 | 0.066 | 1,109 | 0.055 | 0.050 | 0.061 | 0.044 | 0.066 | 1,666 | 0.055 | 0.050 | 0.061 | 0.044 | 0.066 |
| Coon Rapids | 106.60 | 66,049 | 7.041 | 6.336 | 7.745 | 5.632 | 8.449 | 70,738 | 7.540 | 6.786 | 8.294 | 6.032 | 9.048 | 76,659 | 8.172 | 7.354 | 8.989 | 6.537 | 9.806 |
| Cottage Grove | 93.91 | 40,070 | 3.763 | 3.387 | 4.139 | 3.010 | 4.515 | 43,105 | 4.048 | 3.643 | 4.453 | 3.238 | 4.857 | 49,259 | 4.626 | 4.163 | 5.088 | 3.701 | 5.551 |
| Dayton | 61.15 | 7,485 | 0.458 | 0.412 | 0.503 | 0.366 | 0.549 | 9,094 | 0.556 | 0.500 | 0.612 | 0.445 | 0.667 | 12,253 | 0.749 | 0.674 | 0.824 | 0.599 | 0.899 |
| Eagan | 118.21 | 74,798 | 8.842 | 7.958 | 9.726 | 7.073 | 10.610 | 77,329 | 9.141 | 8.227 | 10.055 | 7.313 | 10.969 | 81,266 | 9.606 | 8.646 | 10.567 | 7.685 | 11.528 |
| Eden Prairie | 113.13 | 69,010 | 7.807 | 7.027 | 8.588 | 6.246 | 9.369 | 73,171 | 8.278 | 7.450 | 9.106 | 6.622 | 9.934 | 78,285 | 8.857 | 7.971 | 9.742 | 7.085 | 10.628 |
| Edina | 119.60 | 61,853 | 7.398 | 6.658 | 8.138 | 5.918 | 8.877 | 63,474 | 7.592 | 6.832 | 8.351 | 6.073 | 9.110 | 66,302 | 7.930 | 7.137 | 8.723 | 6.344 | 9.516 |
| Elko New Market | 63.09 | 5,843 | 0.369 | 0.332 | 0.406 | 0.295 | 0.442 | 8,658 | 0.546 | 0.492 | 0.601 | 0.437 | 0.656 | 11,481 | 0.724 | 0.652 | 0.797 | 0.580 | 0.869 |
| Empire Township | 99.28 | 2,691 | 0.267 | 0.240 | 0.294 | 0.214 | 0.321 | 3,271 | 0.325 | 0.292 | 0.357 | 0.260 | 0.390 | 3,860 | 0.383 | 0.345 | 0.422 | 0.307 | 0.460 |
| Excelsior | 122.88 | 2,075 | 0.255 | 0.229 | 0.280 | 0.204 | 0.306 | 2,315 | 0.284 | 0.256 | 0.313 | 0.228 | 0.341 | 2,656 | 0.326 | 0.294 | 0.359 | 0.261 | 0.392 |
| Farmington | 85.19 | 23,726 | 2.021 | 1.819 | 2.223 | 1.617 | 2.425 | 25,212 | 2.148 | 1.933 | 2.363 | 1.718 | 2.577 | 28,580 | 2.435 | 2.191 | 2.678 | 1.948 | 2.922 |
| Forest Lake | 111.09 | 14,497 | 1.611 | 1.449 | 1.772 | 1.288 | 1.933 | 16,792 | 1.865 | 1.679 | 2.052 | 1.492 | 2.239 | 20,266 | 2.251 | 2.026 | 2.477 | 1.801 | 2.702 |
| Fridley | 94.21 | 29,661 | 2.794 | 2.515 | 3.074 | 2.236 | 3.353 | 30,731 | 2.895 | 2.606 | 3.185 | 2.316 | 3.474 | 32,376 | 3.050 | 2.745 | 3.355 | 2.440 | 3.660 |
| Greenfield | 121.04 | 668 | 0.081 | 0.073 | 0.089 | 0.065 | 0.097 | 954 | 0.115 | 0.104 | 0.127 | 0.092 | 0.139 | 1,286 | 0.156 | 0.140 | 0.171 | 0.125 | 0.187 |
| Hamburg | 58.44 | 587 | 0.034 | 0.031 | 0.038 | 0.027 | 0.041 | 605 | 0.035 | 0.032 | 0.039 | 0.028 | 0.042 | 613 | 0.036 | 0.032 | 0.039 | 0.029 | 0.043 |
| Hampton | 66.06 | 706 | 0.047 | 0.042 | 0.051 | 0.037 | 0.056 | 745 | 0.049 | 0.044 | 0.054 | 0.039 | 0.059 | 783 | 0.052 | 0.047 | 0.057 | 0.041 | 0.062 |
| Hastings | 102.93 | 25,905 | 2.666 | 2.400 | 2.933 | 2.133 | 3.200 | 26,985 | 2.778 | 2.500 | 3.055 | 2.222 | 3.333 | 28,280 | 2.911 | 2.620 | 3.202 | 2.329 | 3.493 |
| Hopkins | 108.23 | 21,442 | 2.321 | 2.089 | 2.553 | 1.857 | 2.785 | 23,567 | 2.551 | 2.296 | 2.806 | 2.041 | 3.061 | 25,477 | 2.757 | 2.482 | 3.033 | 2.206 | 3.309 |

Municipal Water Demand Projections – Version 1 (2 of 2)



Next Steps



- Obtain private high-capacity water demand projections from consultant in July for each city and township in the metro region. This data will be added to the municipal water demand projections to provide the total water demand projections for every city and township in the Metro Region. These projections will also provide total water demand projections for the entire metro region for 2030, 2040, and 2050.
- Complete other water demand analyses (ex. compare to wastewater flows, analyze water demands by individual wastewater sewershed areas, analyze employment demand projections, etc.)