



City of Flint Water Improvements

| DATE | IMPROVEMENT | EFFECT | COST |
|------|--|--|-----------------------|
| Nov. | Increased flushing efforts (as weather permits) | Reduced time of water in the system | N/A |
| Nov. | Adjusted operational softening to no less than 80% | Reduce chlorine demand | N/A |
| Dec. | Started hydraulic modeling of distribution system | Helps to identify locations of bad valves | \$80,000 |
| Dec. | Started evaluation of different polymers | Removal of organic carbon | N/A |
| Dec. | Started SCADA upgrades inside of Water Plant | Improvement of internal software controls | \$424,000 Budgeted |
| Jan. | Hired vendor to upgrade efficiency of the ozone system | Better oxidation and disinfecting | \$7,200 |
| Jan. | Started jar testing | Assists in dosage amounts and polymer aids | N/A |
| Feb. | Hired consultant Veolia for process review | Professional recommendations | \$40,000 |
| Feb. | Leasing a TTHM analyzer | Increased internal testing ability | \$8,000 |
| Feb. | Adjustments to reservoir level to match demand | Reduce time of water in system | N/A |
| Mar. | Implement process controls | Professionalism / efficiency | ~\$300,000 |
| Mar. | Utilize Granulated Activated Carbon Filtering | Large reduction in TOC | \$1,500,000 |
| Mar. | Increase ferric chloride / reduce ozone feed rate / reduce lime dosage | Reduction in hardness | ~\$600,000 |
| Mar. | Build hydraulic model | Assists in identifying locations of bad valves | Budgeted |
| Mar. | Communication program | Community awareness | ~\$80,000 |