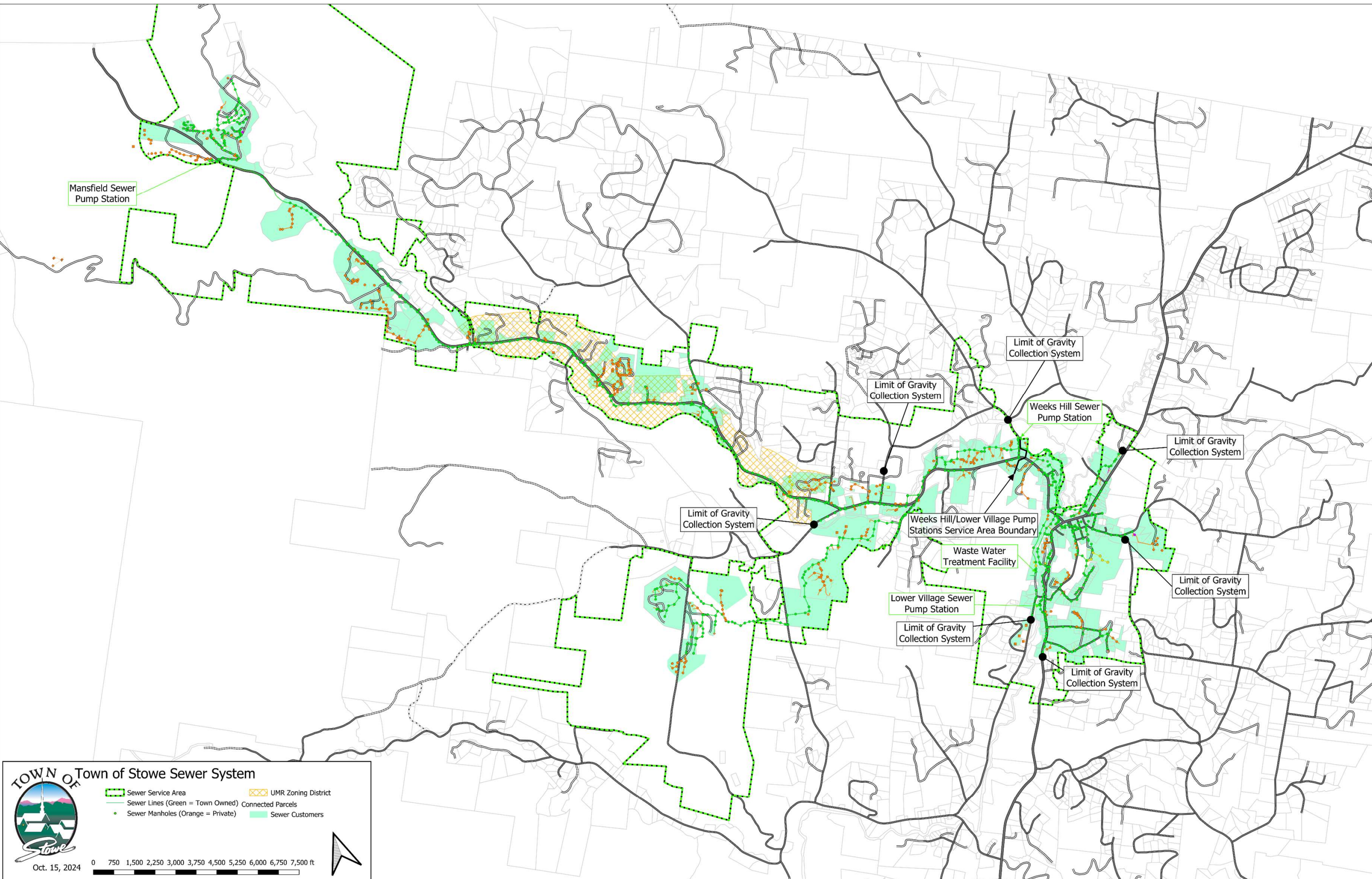




# Stowe Water & Sewer Systems & Capacities

October 16, 2024



**TOWN OF Stowe** Town of Stowe Sewer System

--- Sewer Service Area       UMR Zoning District  
--- Sewer Lines (Green = Town Owned)       Connected Parcels  
• Sewer Manholes (Orange = Private)       Sewer Customers

Oct. 15, 2024

0 750 1,500 2,250 3,000 3,750 4,500 5,250 6,000 6,750 7,500 ft

VERMONT WASTEWATER PERMIT PROGRAM

Permittee: Town of Stowe - Permit # 3-1232

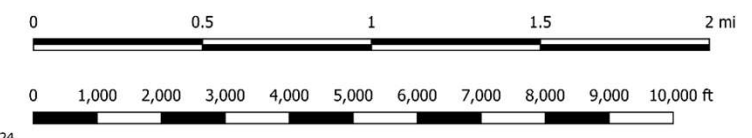
Month: Jul-24

PERMIT MONITORING INFORMATION  
FOUR BASIN SBR FACILITY

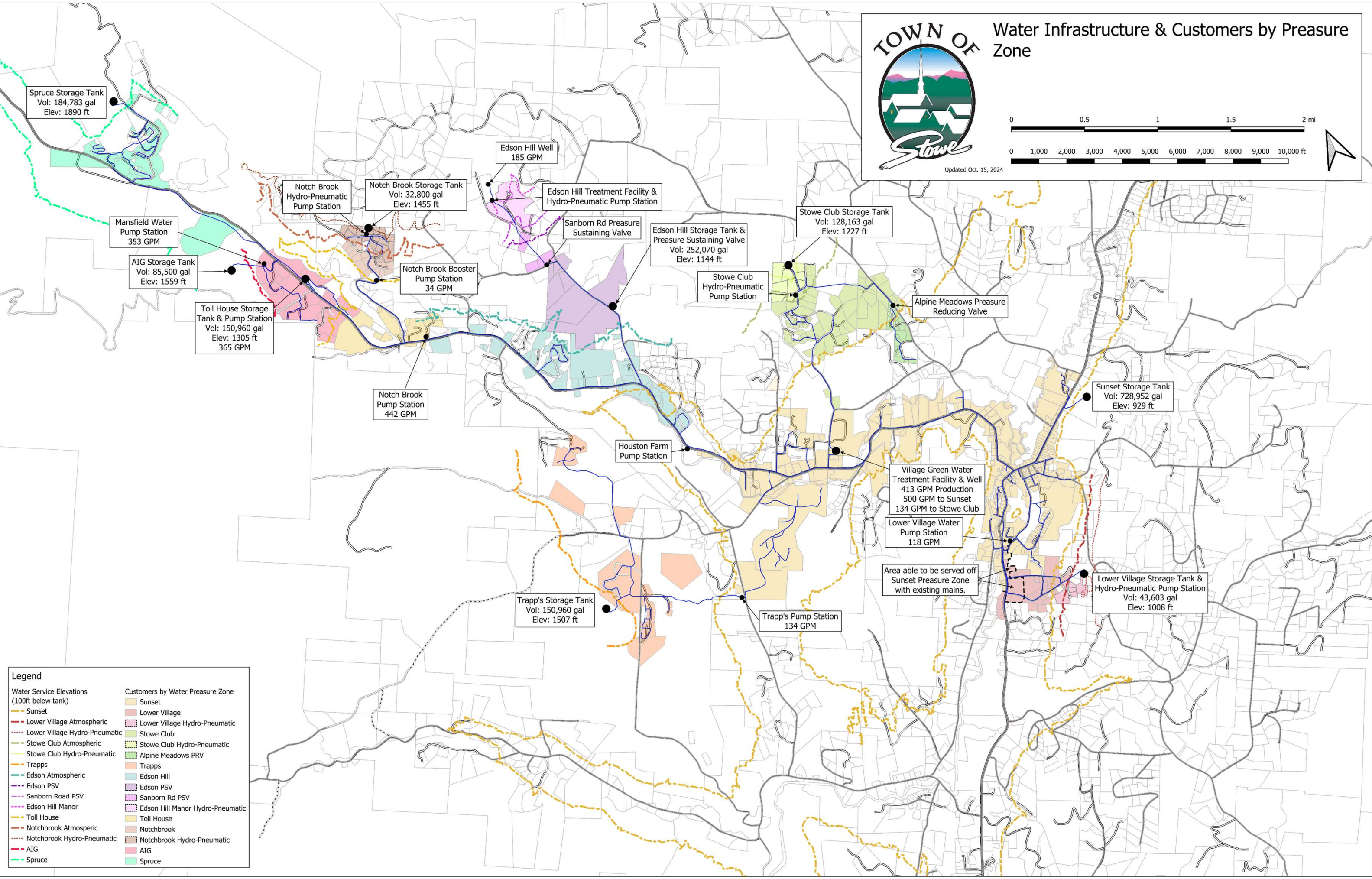
| DATE              | INFLUENT |      | EFFLUENT |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       | Effluent Primary Flow Device Is A 90 Degree V-notch Weir |                   |      |           |              |                  |   |       |   |               |                  |                 |  |
|-------------------|----------|------|----------|-------|---|-------|------|-------|-------|------------------|------|---------------|------|----------------|-------|-------|-------|--------------|-------|--|-------------------|------|-----------|--------------|------------------|---|-------|---|---------------|------------------|-----------------|--|
|                   | BOD      | TSS  | BOD      |       | TSS   |       | TKN  |       | UOD   | Total Phosphorus |      | Total Ammonia |      | Total Nitrogen |       | NOx   |       | Total Copper |       | E-Coli   | Settleable Solids | pH   | Turbidity | UV Intensity | Total Daily Flow | Effluent Flow Checks  |       |   |               |                  |                 |  |
|                   | mg/L     | mg/L | mg/L     | lbs   | mg/L  | lbs   | mg/L | lbs   | lbs   | mg/L             | lbs  | mg/L          | lbs  | mg/L           | lbs   | mg/L  | lbs   | mg/L         | lbs   | #/100 ml   | ml/L              | su   | ntu       | %            | mgd              | Date  | Head  | Actual  | Chart         | (Actual - Chart) | x 100 = % error |  |
|                   | 1        | 2    | 3        | 4     | 5   | 6     | 7    | 8     | 9     | 10               | 11   | 12            | 13   | 14             | 15    | 16    | 17    | 18           | 19    | 20   | 21                | 22   | 23        | 24           | 25               | 26  | 27    | 28  | 29            | Actual           | 28              |  |
| 1                 |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.05 | 0.15      | 100          | 0.400            | 7/3/2024  | 0.563 | 0.384   | 0.379         | 1.4              | % error         |  |
| 2                 |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.14 | 0.12      | 100          | 0.415            | 7/10/2024   | 0.708 | 0.682   | 0.662         | 2.9              | % error         |  |
| 3                 | 190      | 222  | 1.30     | 3.77  | 1.00  | 2.90  | 0.60 | 1.74  | 13.4  | 0.18             | 0.52 | 0.10          | 0.29 | 3.80           | 11.03 | 3.20  | 9.29  | 0.003        | 0.007 | 1  | 0.0               | 7.15 | 0.12      | 100          | 0.348            | 7/17/2024   | 0.396 | 0.159   | 0.164         | -2.8             | % error         |  |
| 4                 |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.04 | 0.14      | 100          | 0.426            | 7/24/2024   | 0.458 | 0.229   | 0.237         | -3.3             | % error         |  |
| 5                 |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.01 | 0.14      | 100          | 0.378            |   |       |   |               | % error          |                 |  |
| 6                 |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 6.96 | 0.16      | 100          | 0.491            | Factory Calibration Date:   |       |   | By:           |                  |                 |  |
| 7                 |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 6.94 | 0.16      | 100          | 0.397            | Comments And Explanations Of Any Violations:  |       |   |               |                  |                 |  |
| 8                 |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.07 | 0.17      | 100          | 0.313            | (Reference all attachments here)  |       |   |               |                  |                 |  |
| 9                 |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.06 | 0.13      | 100          | 0.335            |   |       |   |               |                  |                 |  |
| 10                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.06 | 0.13      | 100          | 0.421            |   |       |   |               |                  |                 |  |
| 11                | 130      | 180  | 1.30     | 8.68  | 1.00  | 6.68  | 0.80 | 5.34  | 36.8  | 0.24             | 1.60 | 0.22          | 1.47 | 3.90           | 26.05 | 3.10  | 20.71 | 0.003        | 0.019 | 1  | 0.0               | 7.11 | 0.23      | 100          | 0.801            |   |       |   |               |                  |                 |  |
| 12                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.04 | 0.13      | 100          | 0.542            |   |       |   |               |                  |                 |  |
| 13                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 6.90 | 0.11      | 100          | 0.558            |   |       |   |               |                  |                 |  |
| 14                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.01 | 0.12      | 100          | 0.427            |   |       |   |               |                  |                 |  |
| 15                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.02 | 0.12      | 100          | 0.462            |   |       |   |               |                  |                 |  |
| 16                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.05 | 0.12      | 100          | 0.395            |   |       |   |               |                  |                 |  |
| 17                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.02 | 0.12      | 100          | 0.452            |   |       |   |               |                  |                 |  |
| 18                | 220      | 172  | 1.20     | 4.41  | 1.00  | 3.68  | 0.70 | 2.57  | 18.1  | 0.17             | 0.63 | 0.10          | 0.37 | 3.70           | 13.61 | 3.00  | 11.03 | 0.002        | 0.008 | 1  | 0.0               | 7.01 | 0.13      | 100          | 0.441            |   |       |   |               |                  |                 |  |
| 19                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.03 | 0.12      | 100          | 0.398            |   |       |   |               |                  |                 |  |
| 20                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.02 | 0.13      | 100          | 0.419            |   |       |   |               |                  |                 |  |
| 21                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.00 | 0.12      | 100          | 0.350            |   |       |   |               |                  |                 |  |
| 22                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.09 | 0.15      | 100          | 0.350            |   |       |   |               |                  |                 |  |
| 23                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.14 | 0.16      | 100          | 0.369            | Prepared By:  |       |   | Bryan Longe   |                  |                 |  |
| 24                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.13 | 0.14      | 100          | 0.370            |   |       |   |               |                  |                 |  |
| 25                | 210      | 206  | 5.30     | 16.13 | 1.00  | 3.04  | 0.70 | 2.13  | 32.8  | 0.24             | 0.73 | 0.50          | 1.52 | 4.10           | 12.48 | 3.40  | 10.35 | 0.003        | 0.009 | 1  | 0.0               | 7.05 | 0.16      | 100          | 0.365            |   |       |   |               |                  |                 |  |
| 26                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.01 | 0.17      | 100          | 0.383            | I certify under penalty of law that I have personally examined and am familiar with the information submitted herein. Based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. |       |   |               |                  |                 |  |
| 27                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.04 | 0.13      | 100          | 0.378            |   |       |   |               |                  |                 |  |
| 28                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.04 | 0.14      | 100          | 0.370            |   |       |   |               |                  |                 |  |
| 29                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.18 | 0.12      | 100          | 0.369            |   |       |   |               |                  |                 |  |
| 30                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.04 | 0.14      | 100          | 0.333            |   |       |   |               |                  |                 |  |
| 31                |          |      |          |       |   |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  | 0.0               | 7.02 | 0.13      | 100          |                  |   |       |   |               |                  |                 |  |
| Total             | 750      | 780  | 9.10     | 33.00 | 4.00  | 16.30 | 2.80 | 11.79 | 101.1 | 0.83             | 3.48 | 0.92          | 3.65 | 15.50          | 63.17 | 12.70 | 51.38 | 0.010        | 0.042 | 4  |                   |      | 4.30      | 3100         | 12.456           | Approved By:  |       |   | Harry Shepard |                  |                 |  |
| Ave.              | 188      | 195  | 2.28     | 8.25  | 1.00  | 4.08  | 0.70 | 2.95  | 25.3  | 0.21             | 0.87 | 0.23          | 0.91 | 3.88           | 15.79 | 3.18  | 12.85 | 0.003        | 0.011 | 1  |                   |      | 0.14      | 100          | 0.415            |   |       |   |               |                  |                 |  |
| Max.              | 220      | 222  | 5.30     | 16.13 | 1.00  | 6.68  | 0.80 | 5.34  | 36.8  | 0.24             | 1.60 | 0.50          | 1.52 | 4.10           | 26.05 | 3.40  | 20.71 | 0.003        | 0.019 | 1  |                   | 7.18 | 0.23      | 100          | 0.801            |   |       |   |               |                  |                 |  |
| Min.              | 130      | 172  | 1.20     | 3.77  | 1.00  | 2.90  | 0.60 | 1.74  | 13.4  | 0.17             | 0.52 | 0.10          | 0.29 | 3.70           | 11.03 | 3.00  | 9.29  | 0.002        | 0.007 | 1  |                   | 6.90 | 0.11      | 100          | 0.313            |   |       |   |               |                  |                 |  |
| Average % Removal | 98.8%    |      | 99.5%    |       | UOD lbs = (Effluent BOD lbs x 1.43) + (Effluent TKN lbs x 4.57) |       |      |       |       |                  |      |               |      |                |       |       |       |              |       |  |                   |      |           |              |                  |   |       | One Copy To The State With original Signature, Permittee To Keep One Copy On File |               |                  |                 |  |



# Water Infrastructure & Customers by Pressure Zone



Updated Oct. 15, 2024



| Legend   |   |
|--|---|
| <b>Water Service Elevations (100ft below tank)</b> | <b>Customers by Water Pressure Zone</b> |
| — Sunset   | ■ Sunset                                |
| — Lower Village Atmospheric                        | ■ Lower Village                         |
| — Lower Village Hydro-Pneumatic                    | ■ Lower Village Hydro-Pneumatic         |
| — Stowe Club Atmospheric                           | ■ Stowe Club                            |
| — Stowe Club Hydro-Pneumatic                       | ■ Stowe Club Hydro-Pneumatic            |
| — Trapps   | ■ Alpine Meadows PRV                    |
| — Edson Atmospheric                                | ■ Trapps                                |
| — Edson PSV  | ■ Edson Hill                            |
| — Sanborn Road PSV                                 | ■ Edson PSV                             |
| — Edson Hill Manor                                 | ■ Sanborn Rd PSV                        |
| — Toll House                                       | ■ Edson Hill Manor Hydro-Pneumatic      |
| — Notchbrook Atmospheric                           | ■ Toll House                            |
| — Notchbrook Hydro-Pneumatic                       | ■ Notchbrook                            |
| — AIG  | ■ Notchbrook Hydro-Pneumatic            |
| — Spruce   | ■ AIG                                   |
|  | ■ Spruce                                |

Spruce Storage Tank  
Vol: 184,783 gal  
Elev: 1890 ft

Mansfield Water Pump Station  
353 GPM

AIG Storage Tank  
Vol: 85,500 gal  
Elev: 1559 ft

Toll House Storage Tank & Pump Station  
Vol: 150,960 gal  
Elev: 1305 ft  
365 GPM

Notch Brook Hydro-Pneumatic Pump Station

Notch Brook Storage Tank  
Vol: 32,800 gal  
Elev: 1455 ft

Notch Brook Booster Pump Station  
34 GPM

Notch Brook Pump Station  
442 GPM

Edson Hill Well  
185 GPM

Edson Hill Treatment Facility & Hydro-Pneumatic Pump Station

Sanborn Rd Pressure Sustaining Valve

Edson Hill Storage Tank & Pressure Sustaining Valve  
Vol: 252,070 gal  
Elev: 1144 ft

Stowe Club Hydro-Pneumatic Pump Station

Stowe Club Storage Tank  
Vol: 128,163 gal  
Elev: 1227 ft

Alpine Meadows Pressure Reducing Valve

Sunset Storage Tank  
Vol: 728,952 gal  
Elev: 929 ft

Houston Farm Pump Station

Village Green Water Treatment Facility & Well  
413 GPM Production  
500 GPM to Sunset  
134 GPM to Stowe Club

Lower Village Water Pump Station  
118 GPM

Area able to be served off Sunset Pressure Zone with existing mains.

Lower Village Storage Tank & Hydro-Pneumatic Pump Station  
Vol: 43,603 gal  
Elev: 1008 ft

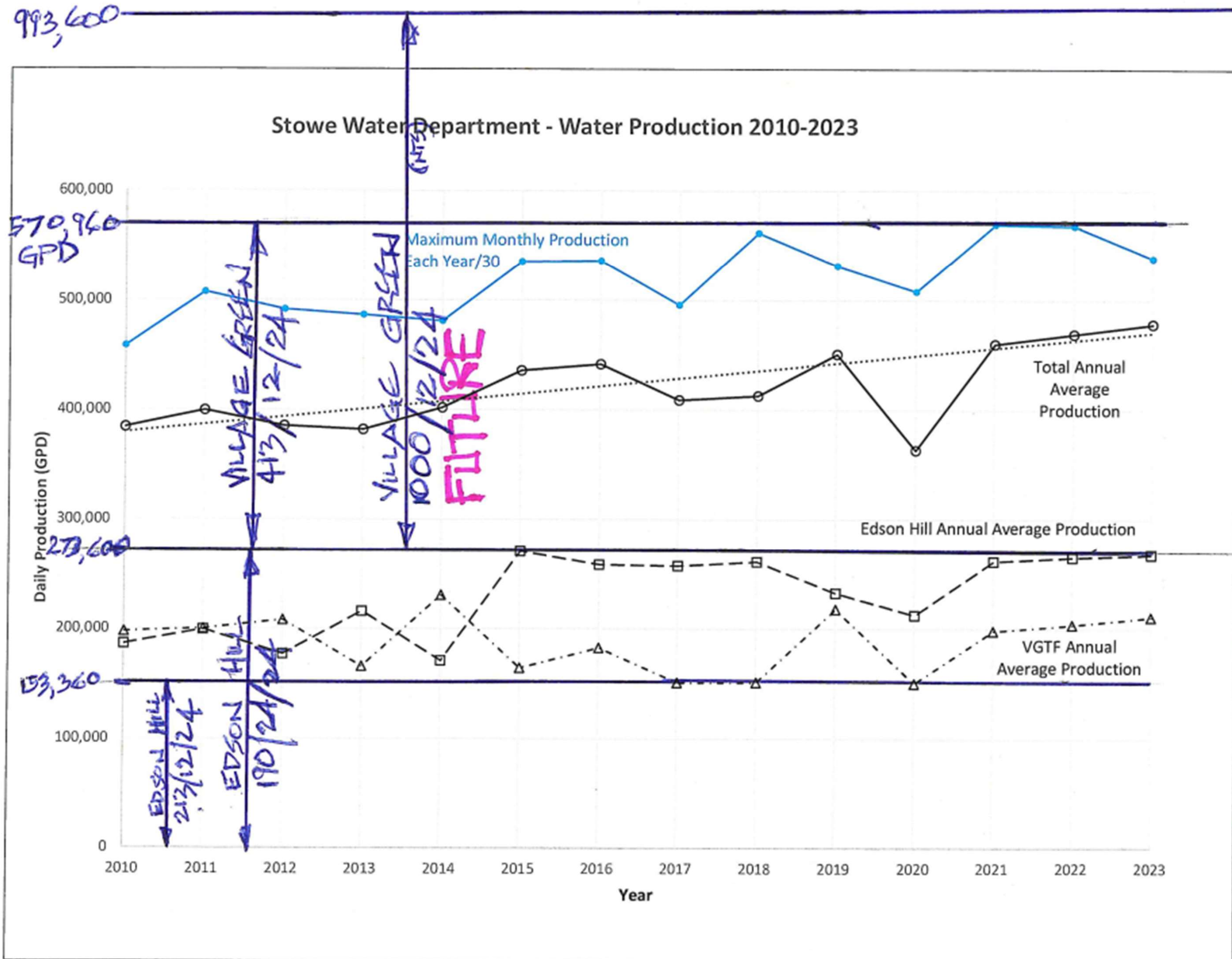
Trapp's Storage Tank  
Vol: 150,960 gal  
Elev: 1507 ft

Trapp's Pump Station  
134 GPM

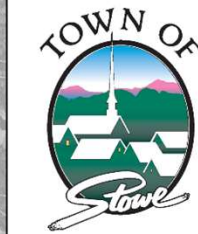
# Town of Stowe Water System Source Protection Areas



# Stowe Water Demand Trends & Permit Capacities

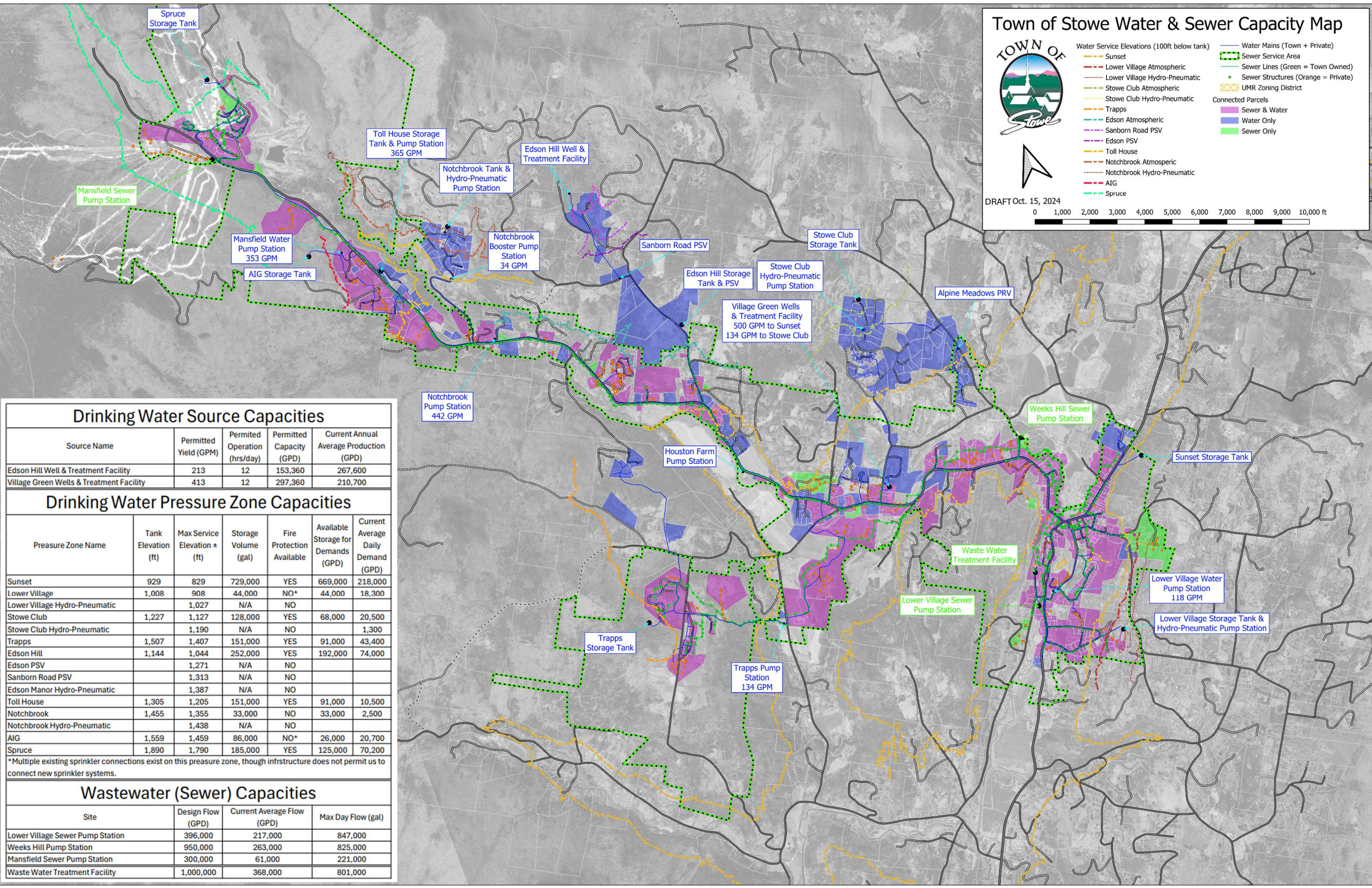
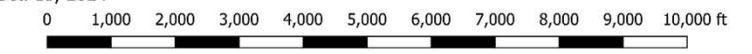


# Town of Stowe Water & Sewer Capacity Map



- Water Service Elevations (100ft below tank)**
  - Sunset
  - Lower Village Atmospheric
  - Lower Village Hydro-Pneumatic
  - Stowe Club Atmospheric
  - Stowe Club Hydro-Pneumatic
  - Trapps
  - Edson Atmospheric
  - Sanborn Road PSV
  - Edson PSV
  - Toll House
  - Notchbrook Atmospheric
  - Notchbrook Hydro-Pneumatic
  - AIG
  - Spruce
- Water Mains (Town + Private)**
- Sewer Service Area**
- Sewer Lines (Green = Town Owned)**
- Sewer Structures (Orange = Private)**
- UMR Zoning District**
- Connected Parcels**
  - Sewer & Water
  - Water Only
  - Sewer Only

DRAFT Oct. 15, 2024



## Drinking Water Source Capacities

| Source Name                              | Permitted Yield (GPM) | Permitted Operation (hrs/day) | Permitted Capacity (GPD) | Current Annual Average Production (GPD) |
|--|-----------------------|-------------------------------|--------------------------|---|
| Edson Hill Well & Treatment Facility     | 213                   | 12                            | 153,360                  | 267,600                                 |
| Village Green Wells & Treatment Facility | 413                   | 12                            | 297,360                  | 210,700                                 |

## Drinking Water Pressure Zone Capacities

| Pressure Zone Name            | Tank Elevation (ft) | Max Service Elevation ± (ft) | Storage Volume (gal) | Fire Protection Available | Available Storage for Demands (GPD) | Current Average Daily Demand (GPD) |
|-------------------------------|---------------------|------------------------------|----------------------|---------------------------|-------------------------------------|------------------------------------|
| Sunset                        | 929                 | 829                          | 729,000              | YES                       | 669,000                             | 218,000                            |
| Lower Village                 | 1,008               | 908                          | 44,000               | NO*                       | 44,000                              | 18,300                             |
| Lower Village Hydro-Pneumatic |                     | 1,027                        | N/A                  | NO                        |                                     |                                    |
| Stowe Club                    | 1,227               | 1,127                        | 128,000              | YES                       | 68,000                              | 20,500                             |
| Stowe Club Hydro-Pneumatic    |                     | 1,190                        | N/A                  | NO                        |                                     | 1,300                              |
| Trapps                        | 1,507               | 1,407                        | 151,000              | YES                       | 91,000                              | 43,400                             |
| Edson Hill                    | 1,144               | 1,044                        | 252,000              | YES                       | 192,000                             | 74,000                             |
| Edson PSV                     |                     | 1,271                        | N/A                  | NO                        |                                     |                                    |
| Sanborn Road PSV              |                     | 1,313                        | N/A                  | NO                        |                                     |                                    |
| Edson Manor Hydro-Pneumatic   |                     | 1,387                        | N/A                  | NO                        |                                     |                                    |
| Toll House                    | 1,305               | 1,205                        | 151,000              | YES                       | 91,000                              | 10,500                             |
| Notchbrook                    | 1,455               | 1,355                        | 33,000               | NO                        | 33,000                              | 2,500                              |
| Notchbrook Hydro-Pneumatic    |                     | 1,438                        | N/A                  | NO                        |                                     |                                    |
| AIG                           | 1,559               | 1,459                        | 86,000               | NO*                       | 26,000                              | 20,700                             |
| Spruce                        | 1,890               | 1,790                        | 185,000              | YES                       | 125,000                             | 70,200                             |

\*Multiple existing sprinkler connections exist on this pressure zone, though infrastructure does not permit us to connect new sprinkler systems.

## Wastewater (Sewer) Capacities

| Site                             | Design Flow (GPD) | Current Average Flow (GPD) | Max Day Flow (gal) |
|----------------------------------|-------------------|----------------------------|--------------------|
| Lower Village Sewer Pump Station | 396,000           | 217,000                    | 847,000            |
| Weeks Hill Pump Station          | 950,000           | 263,000                    | 825,000            |
| Mansfield Sewer Pump Station     | 300,000           | 61,000                     | 221,000            |
| Waste Water Treatment Facility   | 1,000,000         | 368,000                    | 801,000            |

# Questions & Discussion

