4/16/2025

Mr. Jamie Sisson
Town Supervisor
Town of Jerusalem
3816 Italy Hill Road
Branchport, NY 14804

Re: Water System Meter Upgrade, AMI Asset Management Program, Town of Jerusalem, Yates County, New York

Dear Supervisor Sisson:

The Town of Jerusalem / Keuka Park Water District has faced challenges with both aging water meters and the infrastructure originally designed to capture readings. The impacts of such resulted in inaccurate or missing readings and a burden on operations and billing staff.

In an effort to design a meter system specific to the geography of your water district, with accuracy in readings and reliability in data collection in mind, an initial propagation study was performed by Aclara. Aclara is the industry leader in AMI (Advanced Meter Infrastructure) Networks in the US. The outcome of said propagation study is summarized below.

## PROPAGATION STUDY

To provide a robust network, Aclara's Propagation Study Team has determined that the AMI Network for full deployment will consist of 11 data collector units (DCUs) that will cover **100.00%** of Keuka Park's water meters.

In addition to the full deployment propagation study, Aclara certifies the following:

- Single Redundancy at **100.00%** of MTUs that will be heard by one (1) DCU
- Double redundancy at **91.30%** of MTUs that will be heard by at least two (2) DCUs
- Triple redundancy at **43.80%** of MTUs that will be heard by at least three (3) DCUs

The locations for the DCUs are based on the information that is portrayed in the Propagation Study Map on the next page.

## PROPAGATION STUDY CONTINUED

## Full Deployment Propagation Study

### Extended Pit Endpoints

| Predicted Coverage | |
|---|---|
| **Predicted Redundancy** | **Overall Coverage (%)** |
| Single | **100.00%** |
| Double | **91.30%** |
| Triple | **43.80%** |

| DCU Count | |
|---|---|
| **DCU Site Type** | **DCU Count** |
| Customer Sites | Two (2) |
| Aclara Proposed | Nine (9) |
| **Total DCUs** | **Eleven (11)** |

| DCU Quantity & Install Type | | |
|---|---|---|
| **DCU Site Type** | **DCU Count** | **Antenna Height (ft)** |
| Electric Pole | N/A | N/A |
| Non-Transmission Pole | N/A | N/A |
| Roof Mount | N/A | N/A |
| Tank / Tower | Two (2) | 20-30 |
| Lattice Tower | N/A | N/A |
| Aclara Proposed Pole | Nine (9) | 30 |
| **Total DCUs** | **Eleven (11)** | **Varied** |

| Customer Data | | | |
|---|---|---|---|
| **Type** | **Provided Count** | **Modeled Count** | **Customer Data Used (%)** |
| Meters | 1,260 | 1,248 | 100% |
| Customer Assets (Non-Poles) | Three (3) | Two (2) | 100% |
| Customer Poles | N/A | N/A | 100% |

| Environmental Factors | |
|---|---|
| Solar Panels Required | Two (2) |
| Solar Panel Tilt | 59.3 |
| Area Wind Rating > 120MPH | No |
| Antenna Type | EM Wave |

| Coverage Territory | |
|---|---|
| **Metric** | **Value** |
| Total Area (SqMi) | 13 |
| Average MTU per SqMi | 96 |
| Average MTU per DCU | 113 |
| Highest DCU Elevation | 930 |
| Lowest DCU Elevation | 726 |

## METER SELECTION

Once a network was selected, meter manufacturers were considered based upon two criteria which were deemed important for the water district – accuracy, to ensure equity for homeowners and the town, and reliability. The meters selected are Diehl Hydrus, are guaranteed to read accurately and reliably, and are supported 100% by the USG Water AMI Asset Management Program.

# HYDRUS

ULTRASONIC METER

### GENERAL TECHNICAL DATA

| | | HYDRUS |
|---|---|---|
| Potable water temperature | °F | 33 ... 122 |
| Ambient operating temperature | °F | -13 ... 131 |
| Ambient storage temperature | °F | -13 ... 158 (90° F max. for one hour) |
| Maximum operating pressure | psi | 300 |
| Power supply | | Two 3.6 VDC lithium batteries |
| Battery lifetime | | Up to 20 years |
| Encoder interface | | 9 digit programmable resolution industry standard encoder protocol, ASCII output for compatibility with most AMR/AMI systems, Diehl extended protocol is available |
| Data storage | | Alarms and consumption values (42 days of hourly data storage) |
| Protection class | | IP68 |

### TECHNICAL DATA DISPLAY

| | HYDRUS |
|---|---|
| Display indication | LCD, 9-digit, additional symbols/display counter/unit |
| Units | Flow and volume (gpm, gal, $ft^3$, $m^3$) |
| Values displayed | Display test - total volume - firmware version / checksum - current flow - errors / alarms (Additional values based on configuration) |
| Alarms | Hardware flow - leak detection - backflow - air in pipe - low battery - undersized meter - no consumption - high temperature - freezing risk |

### APPROVAL

| | HYDRUS |
|---|---|
| NSF | Complies with NSF/ANSI Standard 61, Annex F/G |
| AWWA | Meets or exceeds applicable sections of the AWWA/ANSI C715 Standards |
| FCC | Complies with FCC part 15 B |

### MATERIAL

| | HYDRUS |
|---|---|
| Measuring pipe | Lead-free copper alloy (stainless steel 1½" & 2") |
| Register housing | Engineered polymer |
| Transducers | Composite |
| Reflectors | Stainless steel |

## ASSET MANAGEMENT PROGRAM

With an AMI network and meter selected, it was determined that further benefit could be provided to the town by putting the meter program on an asset management program. The program itself provides all of the licensing needed to receive and transmit data, communicate with the meters on the network, full billing system integration, a guaranteed 98.5% meter read rate, and full warranties on all equipment while on the program.

The USG Water Solutions AMI Asset Management Program will bring accuracy and reliability to the Town while increasing operational efficiency.

## FINANCIAL

Up front project costs are broken out below by milestones, to ensure the Town makes payments aligned with work performed.

| Project Milestone | Milestone Payment | | |
|---|---|---|---|
| Milestone | % | Amount | Total |
| 30 days after Contract signature | 30% | $349,455.60 | $349,455.60 |
| Collectors installation | 30% | $349,455.60 | $698,911.20 |
| Meter/transmitter Procurement | 15% | $174,727.80 | $873,639.00 |
| Meter/Transmitter installation 50% completed | 10% | $116,485.20 | $990,124.20 |
| Final Completion | 15% | $174,727.80 | $1,164,852.00 |
| Total | | $1,164,852.00 | |

Nine months after the system is operational, and reading at the guaranteed 98.5%+, the town will begin annual payments for the asset management program, covering the licensure and fees, daily monitoring of the system, and all work necessary to maintain accurate and reliable operation.

The annual fee is $39,900, and increases at an inflationary rate to be mutually agreed upon as part of the contract negotiations.

## CONCLUSION

I hope you find this information helpful. If you have any questions or need additional information, please feel free to contact me at (585) 695-19722, or via email at mike.carpenter@usgwater.com.

Sincerely,

Michael Carpenter, Water Systems Consultant