



Report from the Eidelweiss Water Committee

Asset Management Program Status
Remaining 2022 Projects
2023 Grant Programs Summary
2023 Project Plans

Presented to the
Board of Commissioners

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1- Overview:

In 2021 the Village District of Eidelweiss applied for and was awarded an Asset Management grant from New Hampshire Department of Environmental Services.

NHDES' mission is to establish a centralized location to provide information, technical assistance and funding opportunities to assist communities with the development of sustainable asset management programs.

Asset Management is about delivering a specified level of service to customers and regulators at an optimal life cycle cost and an acceptable level of risk with a strategy that ensures long-term sustainability of public assets.

The Asset Management Plan and implementation of the asset management program can help reduce operating risks and address infrastructure challenges as the infrastructure continues to age and deteriorate.

Asset management enables the community to examine the need for each asset as well as the performance of the assets. The ultimate goal of using asset management is to create a shift from "reactive" management to "proactive" management, thereby increasing the impact of community water infrastructure investments.

2- Selecting an Asset Management Plan vendor

NHDES awarded the VDOE with a \$20,000 matching grant to help fund the creation of Asset Management Plan (AMP). With the VDOE providing the additional \$20,000.

Louis Adorno of NHDES attended a kickoff meeting for the Asset Management program at the VDOE. He suggested that the Village utilize an engineering company with asset management experience to facilitate the program.

The VDOE water committee conducted a vendor search to select a number of engineering companies that would be given a "request for quote" for the project.

A statement of work was created and several engineering companies were contacted to provide quotes and demonstrate their ability to conduct the project. Three companies submitted quotes. The water committee reviewed these quotes, checked references, investigated their related work experience, and made an evaluation that was submitted to the VDOE Commissioners for recommending Horizon Engineering.

In recommending Horizon, the committee felt their proposal met the requirements of the RFP. Additional strong points for selection of Horizon were:

- They had a local office
- A large experience base in New Hampshire with local water systems
- Many successful Asset Management Plans created for NH communities
- The equipment and software to conduct GPS, GIS and Mapping
- Access to Thorne Surveys detailed maps of Eidelweiss
- A highly experienced engineering staff experienced with Auto-cad / Water-cad

- Tools to update the GPS locations of the infrastructure
- Ability to build the maps and model of the water system.
- Understanding of GIS requirements, structure and data needs
- Experience writing grants for water systems
- Great references from past clients

3- Creating the Asset Management Plan

Horizon Engineering was selected to create the Asset Management plan.

The VDOE and the Water Committee were able to assist Horizon by providing the following:

- *Documents from previous asset management work*
- *Old Master Plan*
- *Well performance / consumption reports*
- *Equipment records / work orders / repair records*
- *Maps and Data from Debois & King / Fluet Engineering*
- *All known water system information, (infrastructure and financial)*
- *Kick-off meeting*
- *Water station walk-throughs with the system operator*
- *Phone and email support as required*
- *Support at monthly status meetings*
- *Review of newly created documentation*
- *System updates to add to mapping and modeling database*
- *Review of final AMP report for submittal*

As part of the Asset Management Program work Horizon Engineering performed tasks including:

- *Asset Inventory*
- *Asset Assessments for failure risk*
- *Performed failure mode analyses*
- *Evaluation of pump houses (infrastructure / SCADA)*
- *Review of storage requirements and system tanks*
- *Accurate GPS locations taken for 50 isolation shutoff valves*
- *150 curb stops were marked for new GPS data*
- *Accurate GPS locations taken for 80 of 480 curb stops*
- *Accurate GPS location and elevations of pump houses*
- *Included all new GPS locations in new maps and hydro model*
- *New maps based on all old and new location data in AutoCad*
- *Provided updated maps for the water system operator*
- *Created database that will enable a GIS system to be built*
- *Financial review (yearly spending and future estimates)*
- *Created Capitol improvement plan / funding strategy*

- *Conducted Level of Service meeting with the community*
- *Submitted all status reports and deliverables to NHDES*

4- Accomplishments

In undertaking this effort of the Asset Management Plan project, the Village District of Eidelweiss has made significant accomplishments. In collecting and documenting the water system assets in such a way that risk areas can be addressed and maintenance efforts focused. Preparing a plan that will help determine financial needs for the future.

Many existing errors in the water system maps were corrected, information from projects that affected the maps were uncovered and added, new maps were created, a new Hydro model created using water cad.

All the work identified in section 3 above made it possible to have the VDOE Asset Management Plan approved by New Hampshire Department of Environmental Services Drinking Water Division.

The efforts of the Village District Commissioners, the Water Committee, and Horizon Engineering, and the support of NHDES should be applauded.

5- Asset Management Plan Review

The VDOE asset management Plan (AMP) was submitted to NHDES for review and approval. **It was approved!**

With the approval of the VDOE Asset Management Plan (AMP); The VDOE is now in a position to apply for the next round of DES funding and non-matching grants.

The VDOE is now reviewing the AMP to determine tasks and projects in the water system that can be recommended for inclusion in the 2023 and future budget and warrant articles.

6- Upcoming Grant Opportunities

NHDES has a number of grants for 2023 that will be non-matching and the funds come from the American Rescue Plan Act of 2021. The State of New Hampshire has recently approved over \$8 million dollars in funding for drinking water and waste water improvements.

In 2022 the State provided grants of up to \$100,000 to community water systems for asset management. Since the VDOE did not have an approved asset management plan in place and was still in process in creating a plan with the 2021 grant, we were not eligible to apply.

Nearby communities who were awarded non-matching grants for 2022 were :

- *North Conway Water Precinct - \$100,000*
- *Lower Bartlett Water Precinct - \$100,000*
- *Woodsville - \$65,000*
- *Lancaster - \$80,000*
- *Gorham - \$71,000*
- *Rochester - \$100,000*

For 2023, there are a number of NHDES grants that the VDOE should plan to write grant requests for. Most are non-matching and will significantly help the VDOE improve the water system infrastructure and continue asset management projects.

The NHDE Water System sustainability grant programs of interest to the VDOE include:

- *Asset Management Grant (up to \$100k non-matching) (Fall 2022)*
- *Leak Detection (DES provides contractor) (summer 2022)*
- *Water System Energy Audit (up to \$20k non-matching) (Fall 2022)*
- *Energy Audit Findings Implementation (up to \$200K matching funds) (Fall 2022)*
- *Strategic Planning Grants (up to \$50k non-matching funds) (Fall 2022)*
- *Tank Inspection Grant (non-matching) (Fall 2022)*
- *Construction Projects (loans & grants) (Fall 2022)*

The water committee is coordinating with NHDES to determine timelines for submittal and requirements to apply for these grants.

7- Continuation of Asset Management Activities

Plan regular meetings with the Commissioners
 Write the Grant requests for submittal to NHDES
 Continue work for updating and refining the Asset Management Plan
 Obtain Pressure recording devices needed for model calibration (Ian)
 Horizon to provide system zone locations for taking the pressure readings
 Calibration of model (Ian and Horizon engineering)
 Continue GPS of remaining curb stop locations
 Curb stop cover pilot project
 Map updates
 Review of the SCADA system
 Obtain large composite map
 List of homes by zone
 Disaster recovery plan for SCADA system
 Prepare for GIS

8- Identified Projects:

The VDOE water committee recommends that we meet regularly with the water system operator, water engineer, and SCADA engineer. A walkthrough of the water system at

each station to review status and look at possible enhancements, improvements, and maintenance items.

The results of the meetings and station reviews will result in a report which can be used to help guide us through a more detailed project list. The projects, even small ones, can be discussed with the Commissioners, estimates created, priorities set, and an action plan proposed. This work will enable work orders to be created, and approved by the Commissioners, that match the financial capabilities of the Village District of Eidelweiss.

An important part of water system management and Asset Management is documentation. Which is why documentation is included within this project list. Now that we have a great baseline of water system maps, we can build onto these maps more detail, locations, and verified piping as we go forward. The tank project needs as-built information for our records. The water system needs an operations / maintenance manual to guide water operators and engineers in the future.

Chocorua Station: This station is on the priority list for 2023, it is not clear to the water committee why it is not a lower priority. Therefore we do not recommend any projects for 2023 at this station.

Water system main piping: The asset management plan has identified approximately 12 sections of piping that are a high priority for replacing. This work could be scheduled over the next 5 or more years.

Middle Interlaken and Interlaken roads are top priority candidates for replacement projects in 2023. This is due to a history of water pipe leaks on these roads. The current 2 inch piping would be replaced with 4 inch pipe. The new 4 inch lines would connect to the Big Loop 8 inch main.

Based on past history and recent quotes of local contractors, an estimate of \$50 to \$75 a foot could be used as a preliminary estimate. At that cost per foot, each of these two roads would be estimated at \$45K to \$65K. That would require a warrant article for the 2023 annual meeting.

Should NHDES construction grants be awarded to VDOE, additional pipe replacement projects could be undertaken. These grants could enhance the scheduling of the pipe replacement projects without adding to debt.

Other Stations:

The following list by water system station is a start in preparing a more detailed report for each station and aide in Asset Management Planning:

Muddy Beach Station: This station has been newly upgraded. Remaining work would include a system review and of a high priority would be a small project to provide a vapor barrier on the floor and pour a concrete floor.

Summit Station: Ongoing station walkthrough / review is recommended

Reinach Station / Tank: Ongoing station walkthrough / review is recommended

Jungfrau Station: Ongoing station walkthrough / review is recommended

Oak Station: Ongoing station walkthrough / review is recommended

Well / Water Treatment Station: Ongoing station walkthrough / review is recommended

SCADA System: Ongoing station review is recommended & document SCADA operation

Distribution / Pressure Zones: Ongoing and additional work to be determined. The new Upper Lakeview pressure zone is being quoted and may be completed this fall. Capitol reserves have been allocated for the pressure zone work.

Documentation:

- 1- The tank project was completed but additional documentation is needed
- 2- Horizons has provided data files that support the AutoCAD mapping and Water Cad Hydrostatic modeling. The VDOE needs to review this documentation, store it for future use and check that it is complete. (including shape files, CAD files, water cad baseline data, maps)
- 3- Make yearly additions to the maps and model
- 4- Create an operations manual
- 5- Utilize the work order system
- 6- Prepare for implementing geographic information system (GIS)

9- Summary

Well, the Asset Management Plan, or Project as some might call it, was submitted to New Hampshire Dept of Environmental Services on schedule.

It was approved !!!! We will now be in a strong position to win some ongoing grant funds, many of which are non-matching.

The water committee members / volunteers have given many hours to this project, and provided their diverse expertise and experience.

Asset Management is an ongoing activity, in that light, the VDOE water committee is looking forward to continuing to support AMP efforts, working closely with the Commissioners, and helping to make our community water system better.

We would like to thank the Commissioners, NHDES, our water operator, the VDOE office staff, Dubois and King Engineers, and Horizon Engineering for all your support!