REGIONAL PRIORITY PROJECT PRIORITIZATION PROCESS

PROJECT INFORMATION FORM

DOWNLOAD & SAVE THIS DOCUMENT TO YOUR COMPUTER, COMPLETE THE FORM, SAVE, AND EMAIL ATTACHMENT TO FKENNEY@ADDISONCOUNTYEDC.ORG. IF ADDITIONAL SPACE IS REQUIRED FOR ANY RESPONSE OR YOU WANT TO SUBMIT ADDITION DOCUMENTS, CLEARLY LABEL THE DOCUMENTS WITH THE PROJECT NAME & SEND ATTACHMENTS WITH THE FORM.

PROJECT NAME:

Middlebury Wastwater Treatment Facility Upgrade

TYPE OF PROJECT:

- [x] Infrastructure:
  - [ ] Water
  - [x] Wastewater
  - [ ] Broadband
  - [ ] Transportation
  - [ ] Public Facility
  - [ ] Other
- [ ] General Development:
  - [ ] Industrial
  - [ ] Commercial
  - [ ] Residential
  - [ ] Mixed
- [ ] Site/Facility Development for Specific Business
- [ ] Workforce Development
- [ ] Business Development
- [ ] Other:

PROJECT SPONSOR:

Organization Name	Town of Middlebury
Organization Mailing Address	77 Main Street, Middlebury, Vermont 05753
Organization Email	echerington@townofmiddlebury.org
Organization Phone	(802) 388-4045

Contact info for the person submitting project information:

Name	Emmalee Cherington
Title	DPW- Director of Planning
Mailing Address	77 Main Street, Middlebury, VT 05753
Email	echerington@townofmiddlebury.org
Phone	(802) 388-4045

PROJECT PRINCIPAL(S) (if different than above):

Person 1:

Name	
Title	
Organization	
Mailing Address	
Email	
Phone	

Person 2:

Name	
Title	
Organization	
Mailing Address	
Email	
Phone	

PROJECT DESCRIPTION - Provide a brief (2-3 sentence) description of the project. (500 character limit):

The purpose of this project is to upgrade the existing Wastewater Treatment Facility and Main Pump Station in an effort to alleviate obsolete equipment, minimize environmental impacts, and increase energy efficiency.

DETAILED PROJECT DESCRIPTION (5000 Characters):

The Middlebury WWTF was constructed in 2000, designed as a Sequencing Batch Reactor (SBR) process with ultraviolet (UV) disinfection on Industrial Park Road. WWTFs are required by their NPDES (National Pollution Discharge Elimination Survey) Permit to conduct an evaluation of the condition of the facility every twenty years. Middlebury WWTF is permitted under NPDES Permit No. 3-1210, effective November 25, 2008. The Middlebury WWTF discharges into Otter Creek and is subject to the Lake Champlain Total Daily Maximum Load (TMDL) for phosphorous. The WWTF operates under an annual flow limit of 2.2 MGD (million gallons per day) and a discharge limit of 4,018 lbs. Total Phosphorous.

The current treatment process at the WWTF utilizes sequential batch reactors (SBRs), ultra-violet (UV) disinfection and high-temperature lime stabilization for biosolids. A 2021 Preliminary Engineering Report (PER) engineered by Tata Howard, recommended that the facility add primary treatment, convert the SBRs to a four-stage anoxic/oxic biological process, replace the UV disinfection with chlorine disinfection and replace the lime pasteurization process for biosolids with an anaerobic digestion facility. In 2023, the Town contracted Wright Pierce to provide a Peer Review of the 2021 PER. The peer review will update the initial PER and include suggested upgrades to components of the plant related to age and corrosion, in addition to advances in technology and evolving land application requirements.

The current recommendation is for the Town to keep utilizing the SBRs and UV disinfection but move away from lime stabilization. The materials and transportation cost of lime, increased bulk of the biosolids, and the high final pH of the biosolids are all challenges to sustainable and beneficial reuse of biosolids stabilized in this manner. The current operation of solids management for the treatment facility involves the land application of septage (Class EQ). As regulations develop regarding PFAS, land application may be restricted. A sludge dryer would reduce the volume of solids generated from 80% to 25%, to allow for more efficient transport. The existing infrastructure would be reused for the dryer process, reducing construction costs.

One alternative that is being considered is the addition of Pyrolysis, which could be added later if Class EQ land application is restricted. Similar to adding a dryer, the pyrolysis system could be incorporated into the existing sludge handling building, reducing construction costs. The measures of adding a dryer and pyrolysis could also potentially open the treatment plant to act as a regional facility for other municipalities to bring their sludge to. This would help improve sludge handling for the region and potentially reduce the PFAS (forever chemicals) from being released into the environment.

As the largest energy consumer in the Town, the proposed facility will upgrade the treatment process to be more energy efficient. Wright Pierce has conducted a greenhouse gas emissions (GHGe) assessment to determine the best fit for the Town in meeting our reduction requirements. Many of the process improvements will reduce energy usage through technological improvements over the last twenty years. The Town is also considering geothermal heat exchange and the use of solar to offset energy usage.

In addition to the WWTF, the engineer will be reviewing the operations at the Main Pump Station to recommend improvements. The primary concerns are: the influent screening, influent force main, the standby emergency generator, and providing flood prevention.

In the influent screen building, the engineer is recommending that the operation switch to utilizing a fine, perforated plate screen as opposed to the current cylindrical drum. Architectural improvements recommended include installation of new doors, windows, roof, electrical conduit, and equipment controls. The influent force main experiences a significant amount of corrosion related to hydrogen sulfide (H_2S) build-up within the line. The engineer has recommended a combination of chemical injection to prevent the release of H_2S and epoxy coating of downstream structures to help reduce the corrosion. The main pump station was flooded during the August 2023 storm event, causing extensive financial and environmental damages. The three pumps located in the dry-well were all submerged in stormwater, resulting in failure. The engineer is considering the alternatives of flood-proof entryways and raising the existing generator to protect it from potential damage.

PROJECT LOCATION (3000 characters):

Provide the physical location of the project and/or the area to be served by the project

The WWTF renovations will be located on the site of the existing wastewater treatment facility, located at 243 Industrial Avenue, Middlebury, VT. The WWTF serves the users of the Sewer Utility in addition to the larger population that frequent restaurants, churches, theaters, and stores in Town in addition to those associated with Middlebury College. Additionally, the WWTF currently serves as a regional receiver for septage. One consideration in the design is to build the WWTF as a regional receiver that would utilize the drying process (and potentially pyrolysis) to create Class EQ material for other municipalities.

In addition to improvements at the WWTF, the Main Pump Station located at 206 Lucius Shaw Lane will be upgraded, serving the same population.

PROJECT PURPOSE AND BENEFITS (3000 Characters):

Describe the purpose and benefits to the region of the project. Describe if/how the project builds capacity within the region for improved economic development or community development, builds capacity in the region for improved economic and community development, and/or advances the goals and objectives of the region's Comprehensive Economic Development Strategy (CEDS) and/or regional plans, and addresses the most pressing needs of the region.

The Middlebury Wastewater Treatment Facility provides health, sanitation and security to the Town of Middlebury and surrounding area. The primary function of the facility is to remove pollutants and nutrients from the wastewater stream and return the treated effluent and biosolids to the environment. This function protects community health and the environment and allows residents and businesses to operate in a secure way without endangering the environment or human safety. The proposed project will upgrade the existing facility and provide for sustained and continuing operation into the future.

Offering wastewater treatment allows for economic growth in areas that onsite wastewater treatment would be cost-prohibitive or not feasible due to permitting requirements. The treatment facility is currently processing approximately 42% of its design flow capacity, allowing for future growth within the existing system. The level of testing required provides greater environmental protection than onsite treatment would provide- including daily testing of pH, temperature, flow volume and settleable solids. The constant monitoring allows the wastewater team to deal with any concerns that may have significant environmental consequences if not addressed.

An additional consideration of the WWTF upgrades is the reduction in energy usage and greenhouse gas emissions. The town is considering alternatives such as geothermal to offset some of the usage required. An alternative being considered is utilizing the energy created in the treatment process to help heat/cool other properties.

PROJECT TIMELINE, MILESTONES, AND STATUS (3000 Characters):
Describe the project timeline, the current status, and impediments to proceeding. Include factors such as site control, engineering and design, financing/funding identification and commitment, and permitting. Clearly identify where the project is within the project timeline and what work remains.

- 2019- The Town hired the engineering firm, Tata & Howard to complete a Preliminary Engineering Report (PER) that outlined the current condition of the plant and considered the next 20-year lifespan. The PER reviewed alternatives and presented recommendations for consideration. The next phase in development is Final Design.
- 2022- The Town issued a Request for Qualifications (RFQ) to select an Engineering firm to conduct a Peer Review of the PER and complete a PER Addendum based on the alternatives chosen. Wright-Pierce was contracted for the Peer Review and Adendum in fall 2023.
- 2023- The Town submitted this project to the state Clean Water State Revolving Fund (CWSRF) priority list for design and construction.
- 2024- Wright Pierce developed a Greenhouse Gas Emission comparison between different alternatives considered in addition to submitting a 60% Review for approval by the Town. A public presentation is tentatively scheduled for November 22, 2024.
- 2025- 100% Report Development January 8, 2025
- 2025- Final Stamped PER Addendum January 15, 2025
- 2025- Final Design- The Engineer will begin on final design after the Peer Review and PER Amendment are approved by the state. The design phase of the project will likely require 12-18 months given the complexity and permitting requirements. The Town will also work with the lead engineer to apply for additional funding through

PROJECT PRINCIPAL EXPERIENCE/PARTNERSHIPS (3000 Characters):
Describe project principals' experience managing federal or state grants, and/or successfully developed similar business models, their ability to complete the project, and describe any partnerships that will help ensure success.

The WWTF project will be managed by the Department of Public Works (DPW) Director of Planning. The Director is responsible for managing all Capital Improvement Projects (CIP) for the town including water, wastewater, stormwater, and highway improvements. The work is generally funded through a variety of revenue sources in addition to the annual CIP budget. For example, funding sources have included: Clean Water and Drinking Water State Revolving Loan funds (CWSRF/DWSRF), Vermont Agency of Transportation Environmental Mitigation Grants, Clean Water Block grants, Transportation Alternatives grants, Northern Borders Regional Commission grants. The Director works closely with the Project Engineer to oversee the proposed construction.

Additionally, the DPW Director of Planning will work closely with the Engineering team and the wastewater department to be sure the design and construction is built per plan.

PROJECT SUPPORT AND REGIONAL NEED (4000 Characters):

Describe how the project is consistent with identified local and regional goals, advances regional needs identified in the region's CEDS and/or regional plans or is supported by reports or public forums. Describe the community support for the project and any community engagement that has occurred. Include reference and link to region's CEDS, the municipal and/or regional plan, and reports, or forums identified. Also describe how the project leverages regional human, social, financial, cultural, and/or physical capital, and supports, compliments, or enhances existing efforts.

The WWTF is outdated and not as energy efficient as the treatment facility proposed. To allow growth in both the residential and commercial sectors of Town, it is imperative that the wastewater treatment facility receive updates. There are no alternative wastewater systems for the stakeholders involved. Given the environmental and health related concerns of wastewater treatment, the need reaches beyond the immediate users of the system.

Offering wastewater treatment allows for economic growth in areas that onsite wastewater treatment would be cost-prohibitive or not feasible due to permitting requirements. The treatment facility is currently processing approximately 42% of its design flow capacity, allowing for future growth within the existing system. The level of testing required provides greater environmental protection than onsite treatment would provide- including daily testing of pH, temperature, flow volume and settleable solids. The constant monitoring allows the wastewater team to deal with any concerns that may have significant environmental consequences if not addressed.

It is imperative that the Town of Middlebury address the current housing shortage to better serve the workforce. Developers must be guaranteed water and sewer to be willing to invest in the creation of affordable housing. Therefore, the wastewater treatment facility upgrade is crucial for the vitality of the hiring and retention marketplace for Middlebury and Addison County employers.

PROJECT COST, IDENTIFIED AND COMMITED FUNDS/FINANCING, AND FUNDING GAP:

Provide the total project cost and complete the simple sources and uses chart.

Total Project Cost: $ 50,000

Sources:

Source	Amount
Pollution Control Grant	$ 2,500,000
Total Sources:	$ 2,500,000

Uses:

Use	Amount
Construction	$ 37,835,000
Contingencies (5%)	$ 3,784,000
Technical Services	$ 6,426,000
Direct Town Costs	$ 1,325,000
Total Uses:	$ 49,370,000

Funding Gap: **$ 46,870,000**

Note: Uses must exceed sources or there is no funding gap

Budget Narrative (3000 Characters):

Describe the amount of funds/financing that have been identified and include a clear status of the funds (Received, committed, applied for, identified, etc.) including the dates of receipt, commitment, application, expected distribution, etc. Clearly identify any funding gap. Also, identify the type of resource (cash, grant, loan, sponsor in-kind, third party in-kind, etc.) and describe which resources can serve as a match, noting that, for example, some grant sources do not allow matching federal funding with other federal funds. Clearly identify any funding gap and identify the state or federal resources that you expect might help fill the gap.

There is currently a $46,870,000 funding gap for this project.

The preliminary estimate of the Total Project Cost includes contractors overhead & profit, sub-contractor mark-ups by Contractor, unit price items, mobilzations/ demobilization, general conditions/ fees, design contingency, and a 7% inflation to the mid-point of construction. This model assumes the mid-point of construction is December 2026. Technical Services are estimated based on a VT DEC curve.

The project is pursuing funding through the state CWSRF. The Town submitted for the CWSRF priority list in January 2024 and will again in 2025. The Preliminary Engineering Report and contracting a design Engineer for Final Design will increase the Town's scoring in the award process. Additionally, if support is demonstrated through the Regional Priority list, it will also increase the Town's award chances.

The town will also pursue funding through USDA- Rural Utilities Service Water and Environmental Programs (WEP). The Town will apply for a Polution Control Grant which allows for 5-15% forgiveness (5% is most common). Additionally, if the plant becomes a regional treatment facility for solids handling, the Town would potentially qualify for a Northern Borders Regional Commission grant up to $3,000,000. There is also the potential savings through Energy Efficiency and Congressional spending.

JOB CREATION (4000 Characters):

Provide an estimate of the number of permanent and temporary jobs to be retained and/or created by the project, including the period of time over which new jobs will be created.

The Wastewater department consists of five year-round, full-time employees, supported by the Director of Operations, Director of Planning, the Department of Public Works Office Administrator, and nine individuals from the Highway Department. The Town provides full benefits and a pension to all full-time staff members. The proposed wastewater facility will support the projected growth in the Town of Middlebury both on a commercial and residential level.

The proposed project relates to engineering and construction, thus the only jobs that will directly created will be the positions associated with the implementation of the design.

However, it is imperative that the Town of Middlebury address the current housing shortage to better serve the workforce. Developers must be guaranteed water and sewer to be willing to invest in the creation of affordable housing. Therefore, the wastewater treatment facility upgrade is crucial for the vitality of the hiring and retention marketplace for Middlebury and Addison County employers.

CLEAR FORM

PRINT FORM