



# CIVIL ENGINEERING ASSOCIATES, INC.

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December 8<sup>th</sup>, 2023

Nathaniel Bareham, Town Administrator  
Town of Charlotte  
PO Box 119  
Charlotte, Vermont 05445

**Re: Charlotte Village Partners, LLC – 251 Ferry Road  
Sewer Feasibility Analysis and Engineers Report**

Dear Nathaniel:

In accordance with the requirements set forth in the Town of Charlotte Sewer Allocation Ordinance and application process, please let this serve as the Sewer Feasibility Analysis and Engineer's Report regarding the conditions that exist at the 251 Ferry Road property in West Charlotte village.

1. The proposed project is located at 251 Ferry Road and has an existing 4-bedroom home and two garages on an existing 24.16-acre parcel with 490 GPD of sewer design flow.
2. The existing home has been abandoned for several years and has historically utilized a conventional in-ground wastewater system located on the southeast side of the house in a wetland buffer area with two septic tanks discharging from the home to the disposal field.
  - The grandfathered wastewater disposal capacity of the system is for 4-bedrooms or 490 gallons per day (GPD).
  - The wastewater disposal system is estimated to be at least 50 years old and unknown condition or design.
  - The wastewater system is located in the well protection zone of the subject property.
  - The wastewater system is located in the well protection zone of the neighboring 213 Ferry Road Property.
  - The wastewater system is located in the well protection zone of the neighboring 279 Ferry Road Property.
3. The existing property is encumbered by multiple wastewater and potable water supply easements relating to neighboring properties.
  - 213 Ferry Road: This property is located to the east and has an existing wastewater permit WW-138-1604-1 that authorizes a 2-bedroom home best-fit replacement system on the subject property via easement. The proposed best-fit system is located partially in Class 2 wetlands and the remaining in wetland buffer zone.

Recently the 213 Ferry Road property had received preliminary sewer allocation for connection to the municipal system. As a result, it is anticipated the best-fit wastewater system located in wetland and wetland buffer will not be constructed.

It is important to note as part of the discussions with the wetlands program, 213 Ferry Road would be required to voluntarily revoke the wetland permit previously issued for the best fit replacement system. The wastewater easement could also be released once the 213 Ferry Road municipal connection is completed. However, it should be noted this this easement area does not contain fully complying soils for a new wastewater disposal system.

- 161 Ferry Road “Post Office Property”: This property is located to the east of the 251 Ferry Road and has an existing wastewater permit WW-4-0419-1 for the existing Post Office. The septic tank, pump station, and drilled well for the building is located on the 251 Ferry Road property along with a force main from the Post office that heads in the south-westerly direction from the waste tanks to the Town/Burn’s Property and continues along Ferry Road to the Mack Property further south with a disposal field adjacent to the Barber Hill Cemetery.

This wastewater permit appears to have been subsequently amended under WW-4-0419-2 for additional flow to the Mack Property however this system does not appear to have been constructed and past development agreements allowing access to the Mack property from the 251 Ferry Road Property has expired.

4. The proposed wastewater design flows for 251 Ferry Road is anticipated to be 225 GPD.
  - This use includes an Office use with 15 Employees.
  - See Attached Application for breakdown of flows.
  - Preservation of the on-site wastewater disposal system is not viable as part of the development plan for the project. This is due to the fact that the proposed parking lot and access to parking lot cannot be constructed over the top of the existing septic tank or disposal system. Relocating the parking to a location that complies with the minimum 10’ setback and provides adequate parking or prevents class 2 wetland impacts is not possible. The state has indicated it will not issue wetland impact permits for impacts that can be avoided or minimized.
5. State rules allow the search for a replacement wastewater area to be limited to no more than 500 feet from the building.
  - There are no soils within 500 feet that meet the minimum siting standards for a compliant wastewater disposal system.
6. Under a previous sewer application for the property, wastewater exploration and wetland reviews were conducted:

- Test pitting was performed on March 25<sup>th</sup>, 2020. This work was overseen by the Town's technical consultant at the time, Mr. Brian Tremback, from Lamoreaux & Dickenson.
- The majority of the property is mapped as a Class II wetland, the test pitting soil investigation efforts were focused along the west property line at a rise in the land form at the south end of the property.
- A map of the explored areas has been provided that shows where test pits were conducted, wetlands are located, and other limitations for the property created by adjacent water supply's or wastewater easements. Three primary areas were explored:
  - Area #1: The southwest corner of the property was evaluated and based on test pits #1 and #2 this area has very limited potential totaling in a best-case scenario of 120 GPD with a long mound system nearly 330 LF in length and 2.5 feet of mound sand below the disposal field. A system of this size is likely cost prohibitive and located in an area that the State of Vermont and previous consultants have determined as wetlands.
  - Area #2: This area is located in the eastern-central portion of the property and when excavated was observed to consist of shale 6-10" below grade. As a result, this area is unsuitable for waste disposal.
  - Area #3: The central-western portion of the property was explored in depth and is approximate 1,100 LF from the main home. Based on the soil information obtained and topographic data available, it appears this area may be suitable for a 560 GPD mound system.

A system in this area would require further soil evaluations such as a hydrogeologic study due to the varying slopes and dependent upon the results of a topographic survey for final placement of the mound. Additional hand auger explorations will be required to document complying soils 25' downhill of the toe of the system, as the existing plan does not demonstrate compliance with this standard.

However, review of wetlands in the vicinity to determine compliance with wetland and wetland buffers would also be necessary as it is highly likely wetlands or wetland buffers are present in the area. If wetland and wetland buffer impacts would be necessary for construction of the mound system the wetland program has previously indicated it will not grant a wetland permit for new wastewater systems in wetland.

- Soil Investigation Conclusions:
  - The review of the existing property soils did not identify any suitable soils within 500 feet of the existing building suitable as a replacement area for the existing wastewater disposal system.
  - At approximately 1,100 LF from the existing building, 560 GPD of wastewater design flow may be available with additional soil data

and the issuance of a wetland permit. However, the wetlands program has previously indicated a wetland permit will not be issued for new wastewater system impacts to wetlands and buffers.

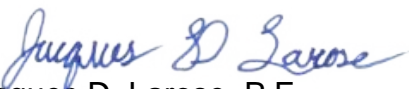
- The property is significantly encumbered and surrounded by Class II wetlands and wetland buffers.

7. The Sewer Allocation Ordinance requires that the applicant utilize all existing wastewater disposal capacity before seeking permission from the Town for additional disposal capacity through a connection to the municipal system.
  - In this particular case no fully, compliant soils are available for a replacement system or new disposal within the 500-foot limitation of the existing home.

### Summary

- The existing wastewater disposal system is an unknown grandfathered system with a capacity of 490 gallons per day and cannot be retained as part of the development plan.
- The design flow for the proposed office building is 225 GPD.
- There are no suitable soils within reasonable distance on the property to replace the existing system or host the 225 gallons per day of disposal capacity required for the building.
- Area #3 has the potential for 560 GPD, however due to the existing wetlands the State of Vermont would not issue a wetlands permit to construct a new wastewater disposal system within a wetland or wetland buffer zone.
- As there is no potential to retain the existing system, replace the existing system, or to provide a new system not located in Class 2 wetlands and buffer area, we would like to request allocation for the full 225 GPD of design flow.

This completes our summary of the conditions as they exist at the 251 Ferry Road property. If you should have any questions, please feel free to contact me at 864-2323 x306.



Jacques D. Larose, P.E.  
Project Engineer

#### Attachments:

- 1 - Application for Wastewater Application Revised 12-8-23
- 2 - C1.0 Overall Site Plan
- 3 - C2.0 Proposed Conditions Plan Revised 12-8-23
- 4 - 213/251 Ferry Road 2020 Wetland Delineation
- 5 - 213 Ferry Road WW-138-1604-1 Site Plan w/Wetland Delineation
- 6 - 161 Ferry Road WW-4-0419-1 Post Office Site Plan

CC: Mike Dunbar, CVP LLC

CEA File 22206.00 (all digital distribution)