

4.1 SITE ASSESSMENT

The Charlotte Central School contracted with Dore and Whittier Architects, Inc. to perform a comprehensive review of the school facilities and make recommendations with regard to structure and system improvements. Donald L. Hamlin Consulting Engineers has provided civil engineering and permit compliance assistance to the Charlotte Central School for over 20 years and so was retained directly by the school for the civil/site portion of the review due to their in depth knowledge of the site and systems outside of the school building. The following is a summary of their recommendations related to grounds and systems outside of the building envelope.

Water System – The school is currently served by a drilled well located near the westerly and southern limits of the recreation fields. The water service runs from the well north toward the Quonset hut and then easterly along the northern edge of the recreation fields before bearing north again and entering the building. In 2001, the system was upgraded to eliminate the pressure tanks that were located in the Quonset hut and to locate new pressure tanks inside an alcove of the boiler room. Prior to this change the school had experienced the presence of bacteria during routine testing. This contamination occurred over a very limited window of time, and based upon the system configuration, it was felt that the pressure tanks in the Quonset hut may have been a source for the contamination. Since those tanks have been taken off line and bladder style pressure tanks installed within the building, there have been no further failing water tests. The well has historically produced sufficient water in both quality and quantity for all of the school's needs. This currently includes irrigation of a portion of the recreation fields, as well as serving many community members who come to the school to fill water containers to serve their personal consumption needs. No improvements to the existing water system are needed at this time.

Stormwater and Groundwater Collection System – As a part of the total reconstruction and expansion of the recreation fields in 1987, a comprehensive system of storm drain and underdrain piping was installed to serve the new recreation field configuration. This drainage system both bisects the recreation fields and also runs around the perimeter of the fields. A portion of the system also runs along the south face of the easterly portion of the school building. The system includes drainage inlets and perforated underdrain piping bedded in crushed stone. All of the collected storm and groundwater is discharged in a single outlet located at the southwest corner of the recreation fields. The easterly parking area drains into this collection system and the westerly parking lot sheet flows toward the Quonset hut and wetland area. The existing system is fully functional and requires no repairs at this time. One addition to the system that Head Custodian Dennis Labonte has suggested is the extension of the surface drain and underdrain system to the extreme southwest corner of the recreation fields. There are many natural springs upslope of this corner of the field causing this the corner of the recreation field to be wet. This would be a relatively straight forward addition to the system as there is a nearby drainage structure that could serve as the connection point to the main system.

Sewer System - The existing sewer system consists of three septic tanks flowing within a gravity piping system to a common pump station located south of the southwest corner of the school building at the northern edge of the recreation fields. This pump station transfers effluent into one of two disposal fields that are alternated annually. The fields are part of an innovative disposal

system that was permitted by the State in 1987. After approximately five years of monitoring, the system was transferred into the State's Indirect Discharge Permit program, which requires that system flows be tracked on a daily basis and flow records sent to the State on a monthly basis. The permit also requires that there be an annual inspection of the system and a report submitted to the school and the State reflecting the findings of the inspection and recommended maintenance or repairs. Currently the permit limits the total flow to the field to 6,000 gallons per day of effluent. Should the actual flow reach a three month average that is 80% of this value, or should the waste strength exceed 80% of the limits described in the permit, the school must commence the search for a new leach field location. As mentioned previously, the water meter and pump timer meters are read daily to check the flow and twice a year samples are taken to determine the waste strength of the effluent. Neither 80% threshold, for either the waste quantity or strength, has been triggered to date. It our understanding the school population is predicted to decrease in the immediate future. Aside from normal maintenance such as pumping the septic tanks, pump replacement, and cleaning the system piping, the system has worked very well since its installation. Minor pressure piping modifications were recommended as a part of this year's annual inspection and report and these repairs have been scheduled to be completed prior to the start of the 2007-2008 school year. Although not improving function of the system itself, one modification that would make operation of the system easier for the custodial staff would be to relocate the pump control panel. Currently the pump control panel is located in room adjacent to the kitchen that is used to store dry and canned foods. The pump control panel is located in the corner of the room and often has pallets of food placed in front of it. See photo below:

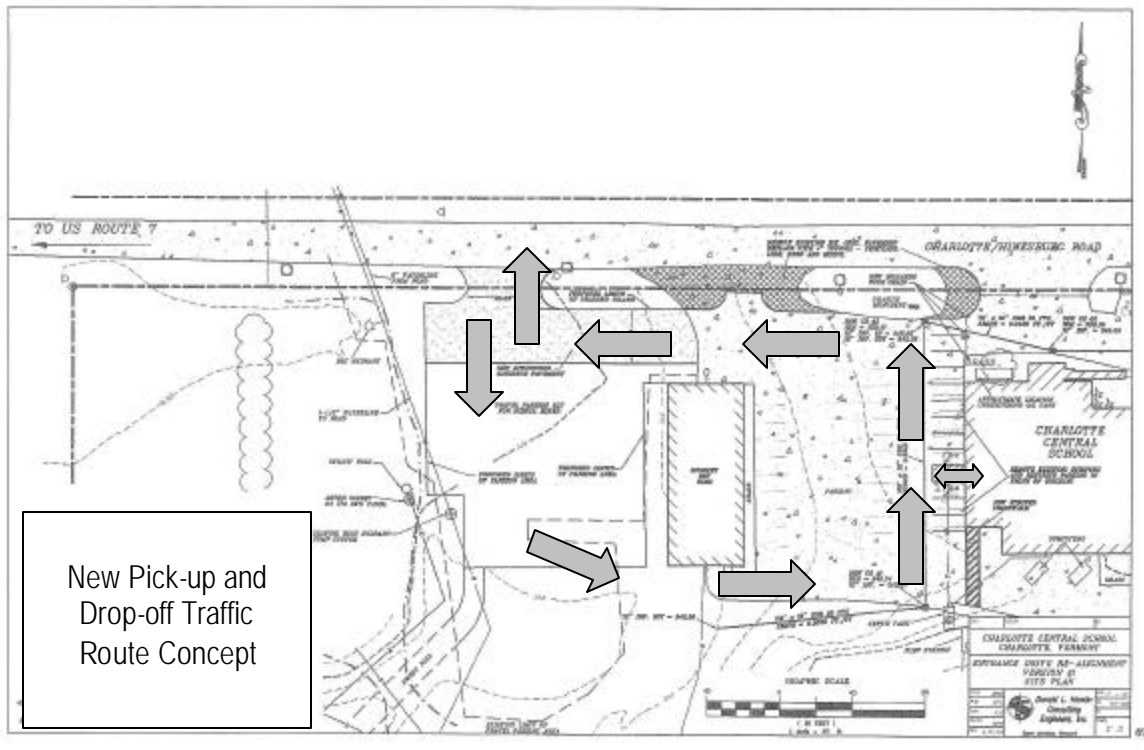


This of course makes required daily access to the pump control panel very inconvenient. Compounding the daily access problem, the pump station alarm is a visual alarm that lights should there be a problem with the pump station and there is no audible component to the alarm. With food stored in front of the panel, the visual alarm is often not visible. Beyond these practical matters is the health concern of service people who are working on the sewer pump station needing access to the control panel to turn off or test the pumps having to walk through the food storage area. We would recommend , and Head Custodian Labonte concurs, that the pump control

panel should be relocated out of the food storage area and to a more accessible location, perhaps within the custodian's office and it should be fitted with an audible alarm.

Recreation Fields - As mentioned previously, the recreation fields were completely rebuilt and enlarged in 1987. The play structures located immediately south of the school building have been continually improved over many years. The most recent modification to the recreation fields was the construction of the soccer field on the east side of the school parcel in 1999. With the exception of the soccer field built in 1999, the remainder of the recreation fields were never surfaced with topsoil. In 1987 topsoil was an alternate item in the recreation field contract, but insufficient funds were available to have this work done. The concept at that time was for the contractor to bring the fields to as close as possible to final grade considering the nature of the native material, and to temporarily seed the surface and that topsoil would be added in the near future. To date, this topsoil has not been added. Adding topsoil and rolling the field surfaces would significantly improve the recreation field surfaces.

Parking and Site Circulation – During each of the past several building additions, modifications to the drive and parking areas have been made. The most recent of these changes were made as a part of the 1996 building additions and included closing an existing curb cut and modifying the site circulation to separate auto traffic from bus traffic during the beginning and end of the school day. The Charlotte Central School presents a particularly difficult challenge for site drives and traffic circulation due to steep slopes on the public roadway which hamper site distances at the drives and also the limited distance between the front of the school and the public street. Based upon conversations with Head Custodian Labonte, it appears that there is adequate parking to serve the school staff and daily visitors to the school. One deficiency that has been identified is related to the site traffic that results from parents either picking up or dropping off students. These vehicles must circulate through both parking aisles of the west parking area in order to reach the school's western access door. This creates conflicts with those wishing to park and also requires students to pass between other parked vehicles. One potential solution to reduce these conflicts would be to re-route the pick-up and drop-off traffic by creating a one way lane that would start at the most westerly curb cut, go south along the west side of the Quonset hut, then south of the quonset hut reaching the southern edge of the western parking lot joining the existing parking lot aisles that would lead to the westerly school entrance door. If four or more parking spaces were eliminated from immediately adjacent to the entrance door, a curbed island and walk could be constructed to join the drop off location with the door. This island would provide a safe haven area for students who have been dropped off or are waiting to be picked up. This would have the added benefit of making those students more visible to parking lot traffic. Further study is required to determine if the one way lane configuration can be constructed to meet the required turning movement radii for passenger vehicles and to insure that this lane will not conflict with the bus parking area use. See schematic plan below:



Summary – Generally, the site infrastructure outside the school structure is functioning adequately with no significant deficiencies. The water, sewer, and stormwater systems serving the school are functioning properly. Relocation of the pump control panel would make operating the system easier for the school staff and would improve conditions in the food storage area where the pump control panel is currently located. An extension to the existing stormwater and groundwater collection system would help to dry out an area in the southwest corner of the recreation field. Placing topsoil over the 1987 recreation fields would provide a much improved playing surface. With the addition of a new paved travel lane and the installation of a curbed island near the western entrance of the school, traffic circulation for student pick-up and drop-off could be improved. Further study will be required to determine if adequate clearance is available to provide adequate turning radii and travel route geometry.