



Allied Engineering

Structural Mechanical Electrical Commissioning



WINDHAM PULIC WORKS Maintenance Facility

Schematic Design
Narrative

July 17, 2015

AEI Project No: 15-035

I SCOPE SUMMARY

The Town of Windham Public Works facility is located on Windham Center Road adjacent to the High School Complex as well as the Pleasant River. The facility was originally constructed in 1979 consisting of a 4 bay garage and administrative area. Subsequent additions included 2 bays constructed in 1980 for the School Departments use for bus maintenance as well as 2 bays in 1984 for joint usage by the Public Works & School Department as storage.

In 1999, Allied Engineering, along with Grant Hays Associates and Gorrill-Palmer Consulting Engineers, prepared a Feasibility Study for the potential expansion/redevelopment of the existing public works facility. Subsequent to the feasibility study, a new 14,000 s.f. sand/salt shed was constructed in 2000 in the northeast corner of the lot.

In addition to the maintenance/administrative building and salt shed, the following features exist on site:

- ◆ Stockpiles for sand
- ◆ Stockpiles for pipe
- ◆ Area used for processing of brush
- ◆ Fueling Facility
- ◆ Parking area for employees
- ◆ Parking area for public works vehicles
- ◆ Parking area for approximately 25 – 30 buses

Based on our understanding of the discussions we had with Tony Plante, the Town is looking to have our 1999 Feasibility Study updated to reflect the current needs of the Public Works and RSU Bus Maintenance Departments. The new study will consider the findings by the Town in their 2013 Facilities Property Assessment (by Oak Point Associates) and their Municipal Facilities Space Needs Study and Master Plan prepared in 2014 (by SMRT).

The Project Team consisting of Allied Engineering, inc, Gorrill-Palmer Consulting Engineers and Grant-Hays Associates undertook the following efforts:

Civil Engineering Scope:

A number of meetings with representatives of the Town and other Team Members were performed to obtain use requirements for the site, the purpose of which was to obtain the following:

- Updated facility needs
- Research and evaluate appropriate regulatory changes since 1999 that would affect the scope of the project.
- Review on-site changes made since the 1999 Study

Gorrill Palmer will coordinate with the project design team and prepare the following Schematic Design plans:

- Schematic Level Site Layout and Utility

➤ Schematic Level Grading, Drainage and Stormwater Treatment

The Schematic design plans incorporate updated building footprints provided by the project team. Schematic Plans evaluate the impacts of updated Local, State or Federal regulations. Specifically, noted updated stormwater treatment requirements.

These schematic plans have been prepared to an approximately 2% design level. Updated schematic plans are based upon comments and are accompanied by preliminary opinion of cost for the site related items.

Architectural Scope of Work:

The activities necessary to complete the requested work are as follows:

1. Reviewed all the collected data in the 1999, 2013 and 2014 studies and assessments relative to the Public Works/RSU departments.
2. Prepared a matrix establishing timeline differences in needs for PW/RSU.
3. Met with the Town officials (Admin/PW & RSU Staff), AEI, and GPCE to discuss the information gathered, current uses, determine areas of need, and assess future growth potential.
4. Discussed special architectural priorities, adjacencies, and expected growth by department. Discuss existing facility constraints, revisit initial decision criteria, and review validity of previous study conclusions.
5. Prepared architectural code analysis to determine compliance factors with current versions of IBC, NFPA 101 Life Safety Code, Maine State Plumbing Code, MUBEC, and ADA. Identify any elements that may have a fiscal or procedural impact since original study.
6. Prepared updated architectural programming analysis indicating existing and proposed uses, tables for space allocation, occupant loads, and major equipment and furnishings. Include comparison tables and narratives.
7. Assisted AEI and GPCE in presenting preliminary concepts to Town of Windham officials. Discuss pros and cons of each scheme. Collect Owner feedback.
8. Revised preliminary architectural schemes based on feedback; prepare one final architectural concept design scheme with associated aspects of the feasibility study report.
9. Prepare one 3D color rendering of the final architectural building conceptual design for presentation to the Board.
10. Participated in final presentation of feasibility study to Town of Windham.
11. Attended internal coordination meetings with AEI, GPCE and other parties of interest.

Structural Scope of Work:

1. Based on schematic plan developed by GHA, AEI developed structural schematic framing and foundation plans for preliminary budget development.

Mechanical and Plumbing Scope of Work:

1. Based on schematic plan developed by GHA, AEI developed Mechanical, Plumbing and Fire Protection System Basis of Design Documentation for preliminary budget development.
2. Evaluated heating system supply options pertinent to the proposed functions considering future occupancy requirements and current codes.
3. Evaluated boiler options, anticipated life expectancy considerations.
4. Evaluated appropriate plumbing systems including fixtures, domestic water, heating equipment, piping and control considerations.

Electrical Scope of Work:

1. Based on schematic plan developed by GHA, AEI develop Electrical System Basis of Design Documentation for preliminary budget development.
2. Evaluated requirements electrical equipment including the distribution system, panels, wiring, lighting, etc.
3. Evaluated the fire alarm systems requirements per current code requirements.
4. Identified emergency and exit lighting requirements per current code requirements.
5. Evaluated Town requirements for backup generators.

II EXISTING SITE CONSTRAINTS/USE REQUIREMENTS:

A. Description of Existing Conditions

The existing public works/bus garage facility is located on a 29.5 acre site on the southerly side of Windham Center Road, approximately ½ mile west of Route 202. The major site characteristics include:

- Approximately 1,070 feet of frontage in Windham Center Road.
- In excess of 1,200 feet of frontage on the Pleasant River.
- Elevations on the site vary from 170' adjacent to the river to 246' along the sites northeasterly border.

All land within 250' of the normal high water mark of the Pleasant River is zoned as Resource Protection based on the Windham Shoreland Zoning Ordinance, amended 7/9/09.

The remaining project site is zoned as FR-Farm Residential District based on the Windham Land Use Code, as amended through 7/9/09.

In addition to the Pleasant River, an unnamed brook traverses the site. The brook originates on site at the northeast corner of the property near Windham Center Road at the outlet of a 24" CMP culvert. The brook flows southwesterly and is a tributary to the Pleasant River. Based upon site visits conducted to date, a wetland corridor is adjacent to this brook. All wetlands within 25' of the normal high water mark of the brook would be considered wetlands of “special significance” by the MDEP.

As part of the original study, a topographic survey was supplied to the project Team by the Town. The survey, dated 1993, was sufficient to use in this study. The project Team would recommend that the survey be updated prior to proceeding to preliminary design to reflect changed conditions since 1993.

B. Regulatory Contacts

Gorrill Palmer had previously contacted various resource agencies in 1999 to gather information from their databases. The project team recommends that updated letters be sent to the agencies to determine if any changes have occurred since the original responses were received. Information received at that time includes:

Archaeological The State Historic Preservation Officer found that there are no properties in the project impact area of historic, architectural or archaeological significance as define by the National Historic Preservation Act of 1966.

Rare or Unique Natural Areas - The Department of Conservation noted that there are no rare botanical features documented specifically in the project area. The Department notes that if the Town elects to proceed with this project, it may be prudent to have the site inventoried by a qualified field biologist to ensure that no undocumented rare features are inadvertently harmed. The Department provided a list of rare and exemplary botanical features documented to occur within a four mile radius of the project site. The Project Team would concur with this recommendation.

Federal Fish & Wildlife USDOJ- No Federally listed species under the jurisdiction of the Fish & Wildlife Services are known to occur in the project area.

MDIF&W-Fisheries Division- It was noted that the Department is unaware of any rare, threatened or endangered fish species present on the project site. It was noted that this segment of the Pleasant River is one of the more important and most heavily utilized cold water fisheries in this part of the state. The Department indicated that adequate buffers should be established and maintained, and care should be taken to prevent any degradation to the stream's water quality.

Maine Department of Environmental Protection - The State of Maine has 4 standards for the classification of fresh surface waters which are not classified as great ponds. The four classifications, from highest to lowest, are Class AA, A, B, & C. The Pleasant River is Class B, the third highest classification. Discharges to Class B waters may not cause adverse impact to the aquatic life in that the receiving waters must be of sufficient quality to support all aquatic species indigenous to the receiving water without detrimental changes in the resident biological community.

C. Existing Land Uses

The project site includes a Public Works facility which was originally constructed in 1979 consisting of a 4 bay garage and administrative area. Subsequent additions include 2 bays in 1980 for the School Department's use for bus maintenance as well as 2 bays in 1984 for joint usage by

Public Works and the School Department for storage. The existing building footprint is approximately 7,849 s.f. with an overall area of 8,783 s.f. Access to the site is provided by a single driveway connection to Windham Center Road along the westerly site limits. A 12,000 s.f. Sand/Salt Shed was constructed in 2000 in the northeast corner of the site, adjacent to Windham Center Road. Other land uses which occur on site include:

A temporary leaf and brush drop off area is located south of the existing sand shed on an upper plateau, adjacent to Windham Center Road. This area is available for public use less than three weeks per year. The area is approximately 0.30 acres.

Temporary Fueling Facility - The facility originally constructed as part of this site included underground tanks and a pump island at the southeast corner of the garage. The tanks and islands were removed in 1997 with oversight provided by St. Germain & Associates. During the removal, it was determined that the extent of spillage/leakage did not require further remediation. As it appeared that the tank closure complied with MDEP regulations, it is assumed that no further action is required. A temporary above ground skid tank and pump is being used at the southeast corner of the garage. The temporary tanks provide 3000 gallons of diesel and 2000 gallons of gasoline which represents a two week supply.

Public Works Employee Parking Area - An area (approximately 12 spaces) is located northeast of the garage, adjacent to the Salt Shed for use by Public Works employees.

Bus Drivers Parking Area - An area (approximately 20 - 25 spaces) is located northwest of the access drive for use by bus drivers.

Bus Parking - Current practice is for bus parking to occur along the southerly side of the maneuvering area adjacent to the garage. Parking is provided for approximately 30 buses with electrical connections for block heaters.

Recycling Center – Currently there are three 20' x 8' “silver bullet” recycling dumpster available for public access and recycling drop-off, located adjacent to the bus parking and south of the maintenance garage. The location of the dumpster, allow no separation of the public from “work” areas.

Sander Storage - Pole structures for storage of sanders in the off-season is provided southwest of the garage.

Miscellaneous Stockpiles southwest of the bus parking area. Public Works uses this area for the stockpiling of other products to include catch basin components, bricks, aggregate and cold patch.

Water Supply - Water service for the existing garage is provided via a connection to the public water main in Windham Center Road.

Wastewater Disposal - Existing system is comprised of a 1,000 gallon septic tank and disposal field. System was reportedly designed based on 4 employees which is significantly less than current usage. Tank is currently pumped every 3-4 months as a precautionary measure.

These uses are shown on the Existing Conditions Site Plan Aerial dated July 14 2015.

Abutting Land Uses Include:

- North - Residential
- East - Residential and Municipal (School)
- South - Undeveloped and Municipal (School)
- West - River and Residential on the opposite side of the River

D. Buffers and Setbacks

This section of the report is intended to provide a brief overview of the various regulations which will govern this facility. The information is presented based on the different levels of regulation.

1. Local Regulations

a. Resource Protection Zone

Resource Protection Zone - 250' from normal high water mark of Pleasant River. Public Building Uses are not permitted use within this zone and, therefore, it is assumed that the facility will be treated as a non-conforming use. Subsection 199-12-D of the Windham Shoreland Zoning Ordinance indicates that expansions of non-conforming uses are prohibited. For the purpose of this study, it has been assumed that:

- Expansion of the existing structure in the Resource Protection Zone is prohibited.
- Reuse of existing “non-vegetated” areas within the Resource Protection Zone for the proposed facility is acceptable, provided that the area of “non-vegetated” surfaces does not increase.
- Reduction of the area of “non-vegetated” surface within the Resource Protection Zone would be desirable from a local permitting standpoint, as well as to enhance the buffer to the river as desired by the Maine Department of Inland Fisheries & Wildlife.

b. Farm - Residential Zone

The remainder of the Site is zoned as Farm-Residential. Public Building uses are a permitted use within the Farm-Residential Zone, provided that the project receives approval through Site Plan Review by the Planning Board. One of the components of the proposed project would include provisions for on-site fueling of Public Works/School Department/emergency service vehicles. A gas station is not a permitted, nor a conditional use in this zone. It would be the opinion of the project Team that the fueling components would meet the intent of the accessory use definition within the ordinance. That is accessory building or uses customarily subordinate or incidental to a conforming principal building use. It would be desirable to confirm this with the code enforcement

officer/planning board. The project Team would recommend that the proposed fueling facility be located outside of the Resource Protection District.

The space and bulk standards within the Farm Residential zone are as follows:

- (1) Minimum lot size: fifty thousand (50,000) square feet.
- (2) Minimum street frontage: one hundred fifty (150) feet.
- (3) Minimum front setback: * thirty (30) feet
- (4) Minimum rear setback: ten (10) feet
- (5) Minimum side setback. ten (10) feet
- (6) Maximum building height: No limit (agriculture, Public Buildings, Church Steeples)
- (7) Maximum building Coverage: twenty percent (20%)

* NOTE: The minimum front Setback of a lot may be reduced to the average setback distance of the existing buildings located on the lots to either side of said lot.

2. State Regulations

a. Natural Resource Protection Act (NRPA)

Under the NRPA, the MDEP regulates all activities within 100' of the “protected natural resource.” For the purpose of this project, a “protected natural resource” would include:

- The Pleasant River.
- The brook that flows from Windham Center Road (northeast corner of site) to the Pleasant River.
- All on-site wetlands.
- Activities within 100' of these resources are regulated at several levels:
 - Expedited Review: Under the Permit By Rule program, an applicant is required to notify the MDEP of the proposed activity, and wait 14 days to receive confirmation that the activity complies with the Permit By Rule regulations. While there are sixteen different Permit By Rule categories, the one most applicable to this project would require a 25' undisturbed buffer between any activity and:
 - The normal high watermark of either the Pleasant River or the brook that bisects the site.

- Wetlands of “special significance” which would include all wetlands within 25' of the Pleasant River and on-site brook as well as flood plain wetlands adjacent to the Pleasant River.
- A second expedited review program under the Natural Resource Protection Act would include any fills of wetlands not of “special significance.” Fills in these wetlands of less than 4,300 s.f. do not require review. Fills exceeding 4,300 s.f. but less than 15,000 s.f. are reviewed by the MDEP in 30 days. Fills exceeding 15,000 s.f. but less than 43,560 s.f. (1 acre) are reviewed by the MDEP in 60 days. Fills in excess of 1 acre of wetlands not of “special significance” or fills occurring in wetlands of “special significance,” requires preparation of Tier 3 Permit Application that likely would include an alternative analysis and mitigation. The project team recommends a wetland delineation to determine the extents of onsite wetland and wetland of “special significance” prior to proceeding with Preliminary Design.

b. Site Location of Development Act (SLDA)

Project review under the Site Location of Development Act occurs when a project exceeds 3 acres of non-vegetated surface. Surfaces which were non-vegetated prior to October 1, 1975 are “grandfathered” Based upon discussions with Public Works personnel, the project site was a gravel pit dating back to the 1960's. From these discussions, it appears that the area of non-vegetated surface that existed at the time of construction of the Public Works facility was approximately 4.33 acres. Upon construction of the Public Works facility in 1979, an area southwest of the building was seeded, resulting in a net area of non-vegetated surface of approximately 3.43 acres. As the project reduced the area of non-vegetated surface when the facility was constructed, the project was exempt under the SLDA. Subsequent to the initial construction, the area of non-vegetated surface has increased due to constructing a bus drivers parking area, the creation of the brush pile, etc. Based upon a 2014 aerial survey, it appears that the current amount of non-vegetated surface is approximately 5.16 acres (or 0.83 acres of new non-vegetated surface since 1975).

If the proposed project results in the creation of more than 3 acres of new non-vegetated surface (Since 1975) a SLDA permit application would be required under the SLDA. The SLDA reviews a number of factors, namely:

- Stormwater quantity and quality
- Erosion Control
- Water Supply
- Wastewater Disposal
- Buffers
- Wildlife and Fisheries
- Solid Waste
- Noise

The Town of Windham no longer has delegated review authority from the MDEP that allowed local review of the SLDA application. Therefore, the project would require submittal to MDEP review if the project exceeds the 3 acre threshold.

E. On-Site Conflicts: Bus vs. Maintenance Personnel

During the original interview process, several common issues were noted at nearly all levels of employees with respect to conflicts between personnel usage of the site:

- Personnel conflicts (conflict being defined as interruptions or distractions for one employee due to actions of another) occur due to the location of the bus driver employee parking. The drivers have to go from the parking area through the mechanic bays to access the existing office area where their vehicle keys are stored and to coordinate with the bus supervisor.
- Personnel/vehicle conflicts occur for bus drivers exiting the office area and having to traverse the maneuvering area adjacent to the mechanic bays to get to their busses.
- Vehicle conflicts arise due to bus drivers exiting the site early in the morning at the same time that public works vehicles are getting set up and are attempting to leave the site.
- Vehicle conflicts arise due to bus drivers parking their vehicles adjacent to the existing office area while they stop in to see the bus supervisor or use the restrooms, reducing the available driveway width for other vehicles entering/exiting the site.
- Conflicts arise due to stockpiling of material (road gravels, cold patch) in ill-defined areas which are then accidentally driven over by either public works vehicles or buses.

F. Required Site Uses

The following site uses were identified as being necessary as a result of the interview process:

- Access Drive - A secondary access is desirable to separate the Public Works building from the sand salt shed activities, as well as a way keep the public from having access to the work area during times of leaf and brush drop off. A location for a secondary driveway was selected approximately 600' east of the existing driveway. This location was selected to maximize available sight distance while providing the maximum available separation to the structures and driveways on the opposite side of Windham Center Road.
- Parking for approximately 50 - 55 personal vehicles (visitors, bus drivers, mechanics and Public Works employees). A specific request from the school department was to provide personal vehicle parking for the bus drivers as close to their busses as possible, due to slip and fall concerns with parking being remote from buses. Public Works also requested personal vehicle parking close to the garage area for similar reasons.
- Bus parking for 32 vehicles with an area available for block heater plug in.
- A cold storage building of approximately 3,000 s.f.
- A fueling facility which could fuel on both sides of the pump island with available queuing for 2 buses.

- Gates for separation of public areas from “work” areas. Specifically, separating the leaf and brush drop off area from the sand shed and Public Works “work” area.
- Relocation of the “silver bullet” recycling dumpsters to the front of the new building parking lot. This location was specifically requested to allow clear sight lines to the dumpsters to discourage illegal dumping and to provide public access to the dumpsters without access to “work” areas
- A space allocated for public access sand pile. Although details for this space were not defined, it was noted that it should include a covered stockpile, restricted access such that vehicles could not back up to the pile and that space be provided to allow vehicles to queue as they wait for access without blocking a public roadway or on-site driveway.

III BUILDING USE REQUIREMENTS:

A. Interview & Documentation Results

Similar to the original feasibility study prepared in 1999, interviews were conducted with all building user groups to determine existing individual and group functions, gain an understanding of daily and seasonal building utilization, determine the facility’s shortfalls in allowing the users to perform their work efficiently and effectively, and identify future needs with respect to the Town’s anticipated growth pattern.

Building data tabulations of the existing square foot program previously compiled were review and verified, with updates noted in the specific areas that have either changed function, have been eliminated, or added to the facility. Existing construction systems were re-verified and furniture, fixtures, and equipment were documented. These tabulations and observations were enhanced and modified at successive staff review meetings and at the completion of the interview process. The Existing Facility Square Foot Analysis and the resulting Needs Assessment Analysis for the facility are as follows:

B. Existing Facility Square Foot Analysis

1. PUBLIC WORKS DEPARTMENT ADMINISTRATIVE FUNCTIONS

PWD Director’s Office	92 sf
PWD Office	85 sf
PWD Supervisor & Admin Office	100 sf
Documents Storage	24 sf
Lunch/Meeting Room	327 sf
Kitchen/Vending	58 sf
Utility/Storage	38 sf
Toilets	100 sf
Circulation	110 sf

Subtotal	934 sf
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2. RSU ADMINISTRATIVE FUNCTIONS (Portable Unit)

RSU Supervisor Office	210 sf
Administrative Assistant	140 sf
Lobby	140 sf
Toilet Room	60 sf
Phone Room	60 sf
Storage	100 sf
Conference Room	180 sf
Training/Break Room	775 sf
Vestibule	120 sf
Utility	63 sf

Subtotal	1,848 sf
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3. MECHANIC'S FUNCTIONS

Service Desk	54 sf
Office	60 sf
Parts Storage (PWD)	535 sf
PWD Work Bays (3)	3,600 sf
RSU Work Bays (2)	1,800 sf
RSU Parts Storage Bays	1,800 sf

Subtotal	7,849 sf
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TOTAL EXISTING BUILDING PROGRAM	10,631 SF
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C. Needs Assessment Analysis

1. ADMINISTRATIVE FUNCTIONS – PUBLIC WORKS DEPARTMENT

Director's Office	Desk with credenza, chair, computer, file cabinets, shelving, and table & chairs for 3. Accessible to Admin Area and Documents Room. Meets with the public and Municipal officials.
Road Crew Supervisor Office	Desk to include 2 work surfaces, drawers, file cabinet, overhead storage, computer, shelving and 2 chairs. Accessible to Director, Admin Area & Documents Room. Meets with the Public.

Grounds Supervisor Office	Desk to include 2 work surfaces, drawers, file cabinet, overhead storage, computer, shelving, and 2 chairs. Accessible to Director, Admin Area & Documents Room. Meets with the Public.
Administrative Assistant	System Furniture in Open Space. Work station to include 3 work surfaces, drawers, file cabinets, overhead storage, computer, printer & chair. Visibility to the Public Lobby. Accessible to the Director, Road Crew Supervisor, Grounds Supervisor and Waiting Area. Greets the Public.
Documents Room	Flat files for drawings, lateral or vertical files for permits & payroll, GIS Station/records, plan rack, plotter/large format copier, storage shelving. Large work surfaces for viewing oversized drawings.
Work Room	Open area adjacent to Administrative Area. Work surfaces for collating, fax machine, postage meter, printer(s). Storage cabinets/shelving for office supplies and employee mailboxes. Open space for Copy machine.
Kitchenette	Cabinets and counters with sink, refrigerator, microwave, and coffee maker.
Conference Room	Tables & chairs to accommodate 12-18 people. Flat screen network connection for conferencing.
Circulation	Hall, Waiting Area, Egress Vestibule.

2. ADMINISTRATIVE FUNCTIONS – RSU

Supervisor Office	Desk with credenza, 2 chairs, computer, file cabinets, shelving. Accessible to Administrative Area. Visual access thru Admin Area to Public Lobby. Meets with Bus Drivers, the Public, and Municipal officials.
Administrative Assistant	System Furniture in Open Space. Work station to include 3 surfaces, drawers and file cabinets, overhead storage, computer, and chair. Accessible to Supervisor. Visual access to the Public Lobby and Supervisor. Greets Bus Drivers and the

Public.

Conference Room	Table and chairs to accommodate 6-8 people. Flat screen monitor for network conferencing.
Work Area	Printer/Copier, work surface for collating, closet for office supplies.
Phone Room	Work surface and chair for Bus Driver calls with Parents/Guardians.
Toilet Room	Accessible single-user bathroom for staff and Bus Driver testing compliance.
Kitchenette	Cabinets and counter with sink, refrigerator, microwave, and coffee maker.
Circulation	Halls.

3. ADMINISTRATIVE FUNCTIONS – COMMON

Vestibule/Lobby	Secured main entrance for administrative staff and the Public. Access to large Meeting room and toilets. Bus Driver access to RSU Administration. Controlled access to RSU and Public Works Department offices.
Elevator	Secured access to lower level. Required ADA component for Municipal buildings.
Meeting Room	Secured meeting space for conferences, seminars, and training for 30-50 occupants. Includes kitchenette with cabinets, counters, sink, refrigerator, microwave, and coffee maker. Secured access to Men's and Women's Toilets. Flat screen monitor for network conferencing/training media.
Toilet Rooms	Secured ADA accessible Men's and Women's multi-user facilities. Includes Custodial closet for maintenance.
I.T. Closet	Network system rack. Located directly above I.T. Closet on lower level.
Circulation	Secured access between Meeting Room and Toilets.

Controlled access from Public Works Department.

4. MECHANIC'S & BUS DRIVER FUNCTIONS

PW Fleet Supervisor Office	Work surface with computer, chair, files, and storage drawers/shelving. Visual access to PW Work Bays. Shared space with Parts Manager.
PW Parts Manager Office	Work surface with computer, chair, files, and storage drawers/shelving. Shared space with Fleet Supervisor. Visual access to PW Work bays. Oversight of access to Parts Storage.
PW Parts Room	Sized to accommodate PWD and common parts with RSU. Includes parts for Public Safety vehicles. Containment for paints, anti-freeze, batteries, etc. Direct access from Work Bays.
PW Road Crew Tools Room	Rakes, shovels, hand tools, chainsaws, etc. Direct access from Work Bays.
PW Secured Tool Room	Large-Size power tools for Mechanics.
PW Custodial Supplies	Storage for bulk building maintenance supplies. Exterior access for ease of disbursement to Municipal building locations (Public Safety, Municipal Offices, Public Library, etc.).
PW Carpentry Shop	General carpentry repair activities for Parks & Recreation and Cemetery maintenance. Work benches, storage shelving for consumables and tools. Open floor area for projects.
RSU Fleet Supervisor Office	Work surface with computer, chair, files and storage drawers/shelving. Visual access to RSU Work Bays.
RSU Parts Room	Parts storage specific to Bus maintenance. Direct access to RSU Work Bays.
PW/RSU Work Area	Mail, communications, work surfaces for Bus Drivers & Mechanics. Access from employee entrance Safety Aisle. Access to Locker/Toilet Rooms.
Fluids Room	Compressors and Bulk storage of fleet fluids for Work

	Bay disbursement system. Exterior fill pipes for each type of mechanical fluid.
Waste Oil Burner	Collection system and burner for recycled waste oil.
Custodial	Mop receptor and storage shelves for cleaning supplies, mops, etc.
Storage Room	Shared general storage for PW & RSU.
Locker/Toilets Rooms	Lockers for Bus Drivers, Mechanics, and Road Crews. Includes storage for Road Crew protective gear. Toilet rooms include accessible showers in each Men's and Women's. Men's includes a Custodial closet.
Break/Meeting Rom	Large space for Bus Driver, Mechanics, and Road Crews breaks, lunches, and trainings. Includes kitchenette with cabinets, counter, sink, refrigerator, microwave and coffee maker. Recycle bin and vending machine spaces. Direct access to Men's and Women's Toilet/Locker Rooms. Operable partition for multiple functions.
Sprinkler Room	Sprinkler system entrance, valves, monitor, etc.
I.T. Closet	Network system rack. Located directly below I.T. Closet on upper level.
Utility Room	Mechanical, electrical, fire alarm, system, security system, communication systems (phone/internet), etc. Meters & panels for the facility.
Circulation	Stairs from Work Bays to Mezzanine Storage above Fleet functions. Secured stairs from lower level to upper level PWD offices. Egress corridor at Meeting/Break Room. Safety Aisle at employee entrances at Work Bays.
Elevator/EMR	Accessible elevator for ADA compliance with secured access to the upper level. Elevator Machine Room with controller & motor.
Fabrication Bay (1)	Welding, painting, etc. Overhead lift system. Specialized exhaust and containment system.

PW Work Bays (7)	Overhead fluids disbursement system. Overhead lift system in 2 bays adjacent to Fabrication Bay. Small lift in one bay for PW Pick Up and Public Safety vehicle maintenance.
RSU Work Bays (2)	Overhead fluids disbursement. Small vehicle lift in one bay for RSU Van maintenance.
Shared/Long-Term Bay (1)	Seasonal PW/RSU projects, Sweeper repair, etc.
Wash-down Bay (1)	High pressure wash system, high power vacuum system, under-carriage wash system.
Off-Season Storage (Remote structure)	Plow blades, small engines (mowers, trimmers, snow blowers, etc.), street signs, road crew signs, hay trailer, etc.

5. MAJOR EQUIPMENT LIST (x) = existing

Public Works

3' x 2' Porta Power Unit (x)	5" Air Gun (x)
5' x 3' Tool Boxes (x)	% Sockets (x)
Diagnostic Analyzer (x)	Alignment Equipment
Transmission Jack (x)	Clutch Installation Jack
2 Floor Jacks (x)	50 Ton Press
Bubble Tire Balancer (x)	Fire Truck Lift
Wheel Dolly (x)	Dump Truck Lift
Battery Charger (x)	Spin Tire Balancer
	Tire Bead Breaker
	Air Compressor

RSU

Battery Charger (x)	Air Drill
Frame Air Jack (x)	Body Work Tools & Equipment
Lockable Tool Box	110v Small Welder
5" Air Gun	Bench Grinder
Metal Break Machine	Small Hand Tools
Bus Lift	

D. Building Footprint Considerations

In considering the options available for the proposed building footprint necessary to achieve the program requirements, similar to the previous process, a holistic approach was again taken with respect to the relationship of the building to the site. After extensive analysis of the desired

utilization of the site with respect to circulation, loading, parking, storage, staging, and access, considerations for the building location were defined. Internal functions, adjacencies, and access requirements to-and-from various site functional areas were identified. Visual proximity and separation of types of uses (office vs. maintenance) for communication, acoustics, environmental, mechanical, and electrical needs were defined and established. All areas were accessed for the probability of change with respect to expansion, contraction, or alteration. Based on this criteria, several concept diagrams were completed to test various building profiles and footprints. It was concluded the building footprint would consist a 120' x 195' rectilinear profile. The Work Bay portion of the structure would be 120' x 150' and the support/Administrative portion would be 120' x 45'. The building would be two stories in height, with the Work Bay area having a clear 22' high working space.

Building Square Foot Requirements

Upon completing the documentation and evaluation of the present and future space needs of the facility with the building users, an evaluation of the special requirements to meet the programmatic needs was conducted. A determination of what worked well and what needed improvement was made for each space. Overall building requirements for special criteria (height, floor area, proportion) were established, taking into account code-related minimum construction standards. Cross-functional utilization of common needs was identified to establish factors for economizing on space without sacrificing functionality, flexibility, or future needs potential. Accommodations for storage, accessibility, and utilities were integrated into the square foot requirements, as well as areas dedicated to safely maintaining a separation of public versus employee access to the facility. Additional considerations were given to the different departmental functions performed by PWD and RSU administrative staff. The square foot requirements to meet the proposed program needs are as follows:

NEW FACILITY SQUARE FOOT ANALYSIS

1. ADMINISTRATIVE FUNCTIONS

Public Works Director Office	240 sf
Road Crew Supervisor Office	240 sf
Grounds Supervisor Office	240 sf
Administrative Assistant/Waiting	234 sf
Work Room	100 sf
Documents Room/GIS	288 sf
Conference Room	672 sf
Kitchenette	60 sf
Circulation	390 sf
PWD Subtotal	2,464 sf
RSU Supervisor Office	225 sf
Administrative Assistant	140 sf

Conference Room	225 sf
Phone Room	49 sf
Toilet Room	56 sf
Kitchenette	80 sf
Copy/Print/Supplies	120 sf
Circulation	150 sf
RSU Subtotal	1,045 sf

Vestibule/Lobby	227 sf
Elevator	72 sf
I.T.	40 sf
Meeting/Seminar/Training Room	660 sf
Men's & Women's Toilets	270 sf
Circulation	236 sf
Common Area Subtotal	1,505 sf

2. MECHANIC, ROAD CREW & BUS DRIVER FUNCTIONS

Wash Bay (1)	1,440 sf
Fabrication Bay w/Crane (1)	1,440 sf
PWD Work Bays – 2 w/ Crane (6)	7,680 sf
PWD Light Vehicle Work Bay (1)	900 sf
RSU Work Bay (1)	1,200 sf
RSU Light Vehicle Work Bay (1)	900 sf
Shared/Long Term Bay (1)	1,200 sf
Safety Aisle	600 sf
PWD Fleet Supervisor	120 sf
PWD Parts Manager	120 sf
RSU Fleet Supervisor	144 sf
PWD Parts Storage	1,270 sf
RSU Parts Storage	400 sf
Fluids Room	240 sf
Secured Tools Room	200 sf
Road Crew Tools Room	160 sf
Waste Oil Collection/Burner	240 sf
Custodial	96 sf
PWD/RSU Time Clock/Work Area	240 sf
Lockers/Toilets	1,530 sf
Break/Meeting/Training Room	682 sf
Custodial Storage	256 sf
Carpentry/Grounds Repair Shop	256 sf
Shared General Storage	192 sf
Sprinkler Room	80 sf
Utility Room	377 sf

I.T.	48 sf
Elevator/EMR	144 sf
Circulation	794 sf
Mezzanine PWD Parts Storage	1,120 sf
Mezzanine RSU Parts Storage	1,120 sf
Mezzanine Circulation	160 sf
Subtotal	25,349 sf
 TOTAL PROPOSED BUILDING PROGRAM	 29,008 SF

E. Building System Considerations

1. Architectural Features and Exterior Considerations

- Building structure will be a traditional red-iron steel frame superstructure atop concrete foundation.
- Work Bay exterior walls to have 4' high concrete at perimeter with insulated metal wall panels above. Insulation value shall be R-21 minimum.
- Work Bay roof is to be a membrane roofing system with minimum R-30 (Aged) insulation and internal roof drains.
- Administrative exterior walls to have brick veneer wainscot, cementitious clapboard and shingle siding an R-21 minimum insulated infill-framed walls.
- Administrative roof shall be pitched gable trusses with R-30 minimum insulation, architectural roof shingles with standing seam metal roofing at entrance canopies for a rural neighborhood appearance.
- Exterior windows to be thermally-broken, insulated glass, painted aluminum.
- Exterior doors at canopies to be painted aluminum entrance units with insulated glass.
- Exterior employee doors at Work Bays are to be insulated painted hollow metal.
- Exterior overhead doors to be painted insulated metal units with vision panes and bollards.

2. Interior Systems - Surfaces

Work Bays

- Concrete floors, dry-fall paint at steel structure, painted metal liner panels at exterior walls.
- Painted 8" CMU to 6' AFF with curtain above at Wash Bay.
- Painted Plywood or FRP at Safety Aisle wall.
- Painted hollow metal doors, frames, bollards.
- Offices, Parts, etc. rooms will have painted sheetrock walls with vinyl base, suspended acoustical ceilings, and concrete floors. Doors and frames will be insulated painted hollow metal. Work surfaces will be plastic laminate finish. FRP wainscot in Custodial and high-impact traffic area walls.
- Mezzanine Parts storage floor will be concrete. Exterior walls will be the same as the Work Bay. Painted metal 42" high guardrail at open side to Work Bays with 8' removable sections for forklift access. Fire-rated sheetrock wall separating Mezzanine from Administrative office. Access stair to have painted plywood treads/risers with painted metal railings. Secured storage areas will have wire mesh fence/gates.

Mechanic, Road Crew, Bus Driver Support Spaces

- Vinyl flooring and base at Break/Meeting/Training Room.
- Ceramic tile flooring, base, and wainscot at Locker/Toilet Rooms.
- Concrete floors at all other spaces with vinyl base.
- Painted sheetrock walls.
- Suspended acoustical ceiling in Break/Meeting/Training Room.
- Painted sheetrock ceiling in Locker/Toilet Rooms.
- Dry fall painted structure at ceilings in remaining spaces.
- Laminate clad counters and cabinets.
- Painted metal lockers.
- Solid composite toilet partitions and screens.

- Painted hollow metal doors and frames with satin stainless steel hardware.

Administrative Office

- Ceramic Tile flooring and base at Vestibules with walk-off mats.
- Ceramic tile flooring and base at Lobby, Toilet rooms, Custodial, and Elevator.
- Vinyl flooring and base at Meeting/Training Room, Unisex Toilet, Kitchenettes, I.T., and stair.
- Carpet and vinyl base at offices, conference rooms, and similar spaces.
- Walls will be painted sheetrock. Custodial will have FRP wainscot. Toilet rooms will have ceramic tile wainscot.
- Ceilings will be suspended acoustical tile.
- Doors will be clear finish solid core wood veneer with painted hollow metal frames and satin stainless steel hardware.

ADA Compliance

- Corridors will be 48" wide.
- Doors will be 36" wide per leaf (34" clear opening width). Door hardware will be lever type.
- Stair will have 7" riser/11" treads. Handrails at 34-36" high. Guards at 42" high.
- Ramps will be 1:12 pitch maximum.
- Hardware, countertops, work surfaces, accessories, signage, and fixtures will be mounted at accessible heights and will have required clearance per ADAAG criteria.
- Elevator shall be sized to accommodate a gurney.

3. Structural Considerations

Prior to finalizing any foundation designs, we recommend that test pits be dug alongside where the proposed foundation would be constructed. This is necessary to determine the soil bearing capacity, foundation drainage requirements, and depth considerations for

frost based on site soil conditions.

The foundation system would consist of cast in place foundation walls on perimeter footings. At the office areas, the wall along Windham Center Road would be a retaining wall system which wraps around both ends of the building for the majority of the office space. The remainder would extend 3-4 feet above slab elevations in the maintenance area to avoid damage from activity within the bays.

The bay slabs would be 6" cast-in-place, reinforced slabs on grade. The floor system throughout the bays would be radiant slabs. These slabs would be cast on a 2" Insul-crete or equal product to allow for the radiant tubing and floor reinforcement interaction.

Lower level office slabs would be 4" cast-in-place, reinforced slabs on grade.

The column grid lines for the maintenance bay portion of the building are set between the bay doors at 20 and 24 feet, accordingly. In line and parallel with the bay lines, the interior columns would be positioned at 40 feet on-center spacing. Protection in the form of concrete encasement of this center columns or column wraps may be a consideration.

Overhead cranes for 2 of the fabrication bays, compressor piping, vehicle exhaust systems, electrical distribution, welding support systems, etc. each have specific load conditions which will require support from the roof structure and/or interior columns. Locations of these systems will be developed and presented later as the construction documents progress. Other area specific conditions such as vehicle/truck lift systems, benches, break machines, etc. will be identified on foundation plans. Additional slab reinforcement for each instance may be required.

The framing for the office area is proposed as a steel beam/column and bar joist system supporting a 9/16" metal floor form decking and a 4" reinforced concrete slab. The mezzanine area would be constructed using cold formed metal framing joists and would be supported along the bay side by a cold-formed metal bearing wall system. This mezzanine area would be designed for a 125 psf live load (storage) design loading.

The roof system for the office portion of the building would be constructed using pre-engineered wood trusses.

4. Mechanical, Plumbing and Fire Protection Considerations

Code Summary:

Maine Uniform Building and Energy Code (MUBEC) consists of the following codes:

2009 International Building Code (IBC)

2009 International Energy Conservation Code (IECC).

2007 International Plumbing Code (UPC 2007)

2007 NFPA Fire & Life Safety Code

The following Standards are also adopted as part of MUBEC, but are not mandatory, they

are ASHRAE standards to be used as guidelines when chosen by the design team:

ASHRAE 62.1 – 2007 (Ventilation for Acceptable Indoor Air Quality)

ASHRAE 90.1 – 2007 (Energy Standard for Buildings except Low-Rise Residential Buildings) editions without addenda.

General HVAC, Plumbing, and Fire Protection:

The facility will be outfitted with heating, ventilating, and air conditioning systems as required to provide occupant comfort and acceptable indoor air quality. Control of particulate and contaminate migration will be by building pressurization control, specialty exhaust systems, and point of use fume and particulate filtration. A condensing boiler plant will provide heating hot water to the air handlers, terminal units, radiant floor heating, and fin tube radiation. Air conditioned areas will be served by a DX split air handler system. The building shall have direct digital controls (DDC) which will be tied into the school department's building management system head end.

The plumbing systems will include domestic hot and cold water, sanitary sewer, storm drainage, wash bay water collection, compressed air piping, and motor fluids piping as required for all functions within the facility. Domestic hot water shall be indirect with storage via heating boiler plant. Miscellaneous instantaneous electric water heaters may be required for remote locations. Plumbing fixtures will be low water flow and have ADA requirements where required.

The building fire protection will be a wet/dry system of automatic sprinklers meeting the requirements of NFPA 13 and the Maine State Fire Marshall.

Administration Area HVAC, Plumbing, & Fire Protection:

A dedicated central heating, ventilating, and air conditioning with ducted supply and return will serve all occupied areas. This air system will be an indoor built up air handler with hot water heating and DX cooling with the condensing unit located on the roof above the unit. Ventilation air will be introduced thru this unit from a ducted gravity ventilator. The unit will incorporate economizer cooling with enthalpy control for "free cooling" when the outdoor conditions permit.

Supplemental heat shall be provided when needed at perimeter walls, storage areas, etc. via hot water fin tube radiation and unit heaters as required to maintain adequate space temperature control.

General exhaust ventilation will be provided thru an energy recovery unit as well as dedicated room exhaust fans. Locker rooms, storage areas, bathrooms, and the elevator machine room will be provided with exhaust ventilation per ASHRAE Standard 62.1. The lunch room will have a time delay-off exhaust fan (fan shuts off automatically) to remove odors when needed.

ADA plumbing fixtures shall be provided where required. Wall lavatories and sinks will have ADA piping covers or shield enclosure where required. Faucets and flushing fixtures will have wired sensor operation. Break room shall have a stainless steel sink. Custodial mop basin shall be floor mount durastone fiberglass. Shower units shall have single lever

mixing valve, anti-scald, ADA where required.

A complete wet/dry system of automatic sprinklers shall be incorporated for coverage throughout in accordance with NFPA 13. Dry system will be required at the entrance canopies.

Garage Area:

The entire garage shall incorporate a central mechanical air ventilation system sized for both continual minimum ventilation for occupancy requirements and to provide evacuation of airborne contaminants including CO and NO_x. The ventilation for both occupancy and evacuation shall meet the requirements of ASHRAE Standard 62.1 for a repair garage environment. A gas fired makeup air unit will be utilized for continuous, minimum ventilation and will be sized to modulate it's speed to offset the exhaust requirements of the vehicle exhaust fans and wash bay exhaust as those systems are initiated. Roof mounted exhaust fans shall operate as sequenced with the associated make up air unit. Specialty exhaust systems shall be provided to storage spaces such as the fluids storage room. A small energy recovery unit will provide ventilation to offices associated with the garage area.

Space heating will be provided partly by a hydronic radiant slab system and partly by the relocated waste oil heater. Hydronic unit heater(s) will provide supplemental heating pick-up for times when the overhead doors are to remain open for extended periods during the winter season. The unit heater(s) will also provide back up if one of the other heating systems fail. All occupied spaces associated with the garage (locker rooms, etc.) will receive supplemental heating via fin tube radiation or unit heaters.

Space cooling will be provided via ductless AC units only to the offices associated with the garage area (e.g. Fleet Parts Manager).

Welding/fabricating will have portable welding fume extraction and filtration units. The benefit of the portable fume extraction units is that no makeup air and exhaust air is required which can contribute to space pressurization issues.

A local vehicle exhaust extraction system will capture and exhaust vehicle combustion products at all work bays. The system will incorporate connection fittings for heavy truck, buses, and smaller vehicles such as pickup trucks.

An emergency exhaust system will provide coverage for the entire garage and wash bay areas. Carbon monoxide (CO) and Nitrogen oxide (NO_x) sensors will start the emergency exhaust and makeup air systems via controls interlock whenever levels of CO or NO_x are detected in excess of published permissible exposure limits. The emergency exhaust system will be sized in accordance with the ACGIH Guide and ASHRAE Standards.

A central compressed air system will be sized to serve all pneumatic equipment and tool needs. The system will consist of a 500 gallon remote receiver tank, rotary screw air

compressor, air dryer, steel or aluminum distribution piping, and air drops that will have isolation valves, filter, regulator, velocity fuse, and double outlet manifold with quick disconnect.

A fluids dispensing system will be piped to each work bay hose reel station. Pneumatic pumps located at the oil storage tanks will pump motor oils, hydraulic oil, and transmission oil thru the dispensing system.

The woodworking area will be equipped with an exhaust air system in conjunction with the portable dust collector.

A central vacuum system will be a commercial grade wet/dry unit. Two drop stations will allow vacuuming of multiple vehicles.

No floor drains will be installed within the garage area except for the wash bay. The wash bay floor drains will drain to an outdoor holding tank.

The wash bay truck wash system will be an automated, recycling wash system which consists of filters, pumps, treatment, and calcium reclaim. Other features will include an undercarriage wash spray system and a gas fired pressure washer for vehicle washing.

Plumbing fixtures will be ADA compliant and consist of an emergency eye/face wash stations, an emergency shower station, hose bibs, freeze proof wall hydrants, and a dedicated 3" water hydrant for fast fill of liquid calcium tanks.

5. Electrical Considerations

Electrical Considerations

The electrical system should consist of the following:

- a. Lighting and switches
- b. Receptacles
- c. Wiring and Conduit
- d. Power for Mechanical Equipment
- e. Telephone system, wiring, and outlets (Raceway system shall be by Division 26. System and wiring by Owner.)
- f. Computer system, wiring, and outlets (Raceway system shall be by Division 26. System and wiring by Owner.)
- g. Power for various pieces of equipment (welder, tools, lifts, compressors, etc.)
- h. Security system
- i. Grounding system
- j. Electrical service and panel board distribution

- k. Fire alarm system
- l. Emergency and Exit lighting

The lighting shall consist of LED luminaires with high-performance optics in offices, lensed LED troffers in utility areas and locker areas, high bay LED light fixtures in the garage bays, and LED wall packs on the building for exterior lighting.

The electrical service is estimated to be a 600 amp, 480/120 volt, 3 phase, 4 wire service. In order to provide 3-phase service to the facility, the existing overhead utility lines along Windham Center Road will need to be upgraded from single-phase to 3-phase. 3-phase overhead utility currently ends approximately at the Windham Public Library, approximately 0.3 mile from the site.

An automatic addressable fire alarm system shall be provided that will consist of a fire alarm panel, horn/strobes, pull stations, heat detectors, smoke detectors, waterflow switches, etc. This system will automatically notify the local fire department upon alarm.

Emergency and Exit lighting will be provided in order to illuminate all means of egress and also to direct building occupants to the nearest exit point.

IV. EXISTING SITE CONSIDERATIONS:

A. Drainage

At this time, surface water runoff from the site is primarily sheet flow with limited catch basins and piping. Due to the gravel nature of the site, this results in the export of sediment from the site into the adjacent areas (uplands and wetlands and eventually watercourses). The redevelopment of the project site allows the Town the opportunity to enhance the existing stormwater runoff plan and provide additional protection to the wetland and watercourses. Stormwater detention is not warranted on this site due to proximity of the river. Rather, stormwater provisions should focus on:

- Providing stable outlet points for concentrated flow.
- Providing means to enhance (treat) stormwater runoff prior to discharge.

The project Team recommends that the following measures be implemented into the stormwater plan as the project proceeds:

- Sheet flow discharge be retained for discrete size paved areas. The design should recognize the extent of paved area versus the ability of the adjacent buffer to treat the runoff in a stable environment.
- Discourage sheet flow discharge to buffers from large gravel surfaces.
- Runoff from large gravel or large paved surfaces should be routed to:
 - Catch basins with hooded outlets to promote retention of floatables within the basin, and gross particle removal through sedimentation.

- Underdrained Soil Filter areas to treat the stormwater to meet the water quality standards of the MDEP.
- A stable discharge point such as level lip spreader or riprap apron be incorporated to promote sheet flow as the stormwater runoff enters the adjacent buffer.
- Incorporate vegetated swales where feasible.

Use of these Best Management Practices (BMP's) will greatly reduce the extent of sediments which are currently transported off the developed portions of the site.

B. Subsurface Wastewater Disposal

As the existing subsurface system is inadequate for the proposed use, as part of the original study, two options were investigated:

- Installation of a new subsurface wastewater disposal system.
- Connection to the existing sanitary sewer system at the abutting school property.

The findings of our investigations are presented below:

On-Site System

In 1999, S.W. Cole Engineering, Inc. conducted an on-site investigation for a subsurface system. Due to the extensive disturbed nature of soils on-site, the investigation focused on undisturbed areas. An area was located along Windham Center Road which appears suitable was identified by S.W. Cole. S.W. Cole recommends that a backhoe test pit be dug near TP2 for purpose of verifying soil conditions prior to proceeding with design. The project Team concurs with this recommendation. An on-site pump station would be required after the septic tank to pump effluent to the proposed disposal area.

Connection to System at High School

Based upon recent discussions with town and RSU staff, connection to the school system is definitely no longer a viable option.

It would appear that an on-site subsurface wastewater disposal is the most feasible option at the public works/bus garage as a site has been identified by S.W. Cole Engineering.

Based upon the Maine Subsurface Wastewater Rules, the following daily flows would be anticipated for the proposed building. For the purposes of this analysis we are using per Table 4C; Employees at place of employment with shower, approximates 20 gpd per employee. The table below presents the anticipated design flow for the facility:

Department	# of Employees	Design Flow per Emp. (gpd)	Total (gpd)
Public Works	20	20	400
RSU	35	20	700
		Total	1100

As can be seen in the table above, the design flow for septic design is 1100 gallons per day. As the design flow is less than 2000 gpd, an engineered system will not be required.

C. Reclamation of Used Portions of Site

Reviewing the available plans for the facility and aerial photography, it is clear that the facility has expanded horizontally over time to meet increased demands. For example, the bus driver/employee parking area was created, the stockpile area was expanded toward the existing storage rack for the sanders. These expansions have reduced the available buffer to the Pleasant River, and adjacent wetlands. The project Team recommends that the northern edge of the redevelopment be established (using either pavement or structures) as a limiting factor for future expansion towards the river. In fact, it is recommend that, to the extent practicable portion of the area northwesterly of the existing access drive be reclaimed as a buffer area. In fact this area would be considered as a location for a potential water quality treatment facility to insure that stormwater runoff from developed areas is not directed to the adjacent steep slopes.

D. Oil-Water Separation

Floor drains are not proposed for the building at this time, which will eliminate the need for and oil-water separation tank. However, a separate septic tank and field are required for the vehicle wash bay. Final location of the disposal field for this bay will require additional test pit information.

E. Anticipated Permits

As presently conceived, the selected concept plan would require the following permits:

- Local
 - ❖ Shoreland Zone
 - ❖ Site Plan
- State
 - ❖ Natural Resource Protection Act.(Potential filling of wetlands of “special significance”)
 - ❖ Site Location of Development Act (Due to increase of non-vegetated surface beyond 3 acres).