

**Engineer's Report**  
**Butterfield Redevelopment Project**  
**NYS Route 9D and Paulding Avenue**  
**Village of Cold Spring, Putnam County, NY**

The subject property is located at the intersection of N.Y.S. Route 9D and Paulding Avenue in the Village of Cold Spring, Putnam County, New York. The site is known as Butterfield Hospital. It is currently developed with two buildings, driveways, and parking areas. The overall parcel size is 5.7 acres and zoned B-4A zoning district. One of the existing buildings which is currently abandoned will be demolished along with some of the driveways and parking areas. The Lahey Pavilion is an existing medical and health care facility that will remain. The site currently gains access from three driveway entrances off of Route 9D which will remain.

The existing buildings are currently served by public water supply and sanitary sewers. There is an existing 8" D.I.P. watermain which enters the site from Route 9D at the southwest corner and runs parallel to the property line within an easement for approximately 300 L.F. It then turns west into the adjoining property. The existing 2" water service for the Lahey Pavillion connects to this main. The existing water service to the Butterfield Hospital Building which connects to Paulding Avenue will be abandoned, cut and capped as per the requirements of the Water Department. There is also an existing 6" D.I.P. watermain in Paulding Avenue. The existing 8" sanitary sewer main is located in Chestnut Street as well as Paulding Avenue.

It is proposed to subdivide the property into four lots. The uses provided by the project will include medical and health care facility, mixed use of retail and office, and residential housing which will conform to current zoning. Lots 1, 2, and 3 will provide sites for the new single family residential homes which will have frontage and gain access from Paulding Avenue. Lot 4 will contain the existing Lahey Pavilion along with newly developed office, retail space, and senior housing. This lot will continue to use access off the three existing curb cuts on Route 9D. A portion of the existing parking lot area will be maintained in addition to a new roadway and parking area being proposed. The project will also provide a one-acre open space area named as Gateway Park at the intersection of Paulding Avenue and NYS Route 9D. Further, a common area for gathering will be located at the west entrance to the site to be known as Butterfield Square. The site will be serviced by public utilities including public water and sewer which will be extended through the site. Stormwater will be managed by the use of bio-retention areas and infiltration of the water quality volume as well as flood storage volumes.



### Subdivision

As stated it is proposed to subdivide the 5.7 acre parcel into four lots. Lots 1, 2, and 3 will be dedicated to single-family homes with a lot size of 7600 S.F. or 0.17 acres per lot. The remaining 5.18 acres will be utilized for the mixed-use development of senior housing and commercial space. Approximately one acre of the open area will be set aside as Gateway Park. All of the lots will comply with the Zoning requirements of the B-4A Zone. The subdivision of the property will require approvals from the Village of Cold Spring and the Putnam County Department of Health.

### Public Water Supply

The project will be served by public water mains. As stated, there is an existing water main at the western edge of the site. A new 8" CL 54 D.I.P. water main will be extended from the point where the existing main exits the site. The new main will be approximately 730 L.F. and will extend in a northeast direction through the site where it will terminate by connecting to the existing main in Paulding Avenue creating a loop. In addition to the main, there will be two new hydrants installed and connected to the new main by a 6" CL 54 D.I.P. The new water mains will be within an easement granted to the Village for access and maintenance. Each of the proposed residential units will have individual ¾" copper water service and meter which will be connected to the existing water main in Paulding Avenue. The proposed senior housing and commercial buildings will connect to the existing and proposed water mains within the project. Each building connection will consist of a 2 ½" D.I.P. domestic water service and a 6" D.I.P. fire service. Each building will be metered separately. All taps, service lines, and meters shall meet the requirements of Section 130 of the Village Code. The projected rates of flow and pressure requirements are provided in the attached Report prepared by Peterson Engineering Group, LLC. The Village Department of Public Works has acknowledged that adequate supply and pressure exist in the system adjoining the site. The installation and disinfection of the water mains shall be in accordance with the latest applicable AWWA Standards, Ten State Standards, Putnam County Department of Health requirements, and will be noted in the Plans and Specifications. The extension of the water mains will require approvals from the Village of Cold Spring and the Putnam County Department of Health.

A public sanitary sewer main will be extended into the site. The sewer main will be an 8" PVC SDR 35 pipe interconnecting precast manholes. The starting connection will be in Chestnut Street via a doghouse type manhole which will set over the existing main. The proposed main must cross under Route 9D to reach Chestnut Street. The NYS DOT is requiring that this crossing must be done as a directional bore in lieu of open trench excavation. Once the new sanitary sewer main enters the site, it will immediately connect to a new sanitary manhole. The sewer main will traverse the site to allow for gravity connections for each of the proposed buildings in Lot 4. There will be a total length of approximately 790 L.F. of 8" PVC SDR 35 sewer main and seven precast concrete manholes will be installed. The sewer mains will be



within easements dedicated to the Town for access and maintenance. Each building will have individual 6" PVC SDR 35 service connections as shown on the project plans. The projected average flow for the project is 15,130 gpd. In addition, a sanitary sewer design summary is attached tabulating flows and the sizing of the sanitary sewer mains. The sewage flows after leaving the site will ultimately discharge for treatment at the Village of Cold Spring Wastewater Treatment Facility. The Department of Public Works has indicated that there is adequate capacity for the additional flows from the project. The installation of the public sewers will require approval from the Village of Cold Spring and the Putnam County Department of Health. The installation and testing of the sanitary sewer main system will be in accordance with the latest applicable Ten State Standards and the Putnam County Department of Health Standards.

### Easements

Access and utility easements will be provided for the public water and sewer mains. The easements will provide the Village access for maintenance over the access drives and parking areas. Additionally, where the mains extend beyond the pavement areas, 15' wide easements will continue over the center of the utility up to the public right-of-way.

### Drainage

A stormwater collection and management system will be installed as part of the project in accordance with the requirements of the Village of Cold Spring and the New York State Department of Environmental Conservation General Permit 00-10-001.

Joseph C. Riina, P.E.  
NYS Lic. No. 64431

November 10, 2014





Butterfield Site  
1756 New York Road  
Town of Cold Spring  
Putnam County  
New York

**Building 1:**

Building 1 consist of 6,000 sf of retail space on the 1<sup>st</sup> floor, 6,000 sf of office space on the 2<sup>nd</sup> floor, and 3,500 sf of office space on the 3<sup>rd</sup> floor. The building will be covered by sprinklers. The building has an Ordinary Hazard I classification and does not require a standpipe. According to our calculation the building will require a 6" fire service, 2-1/2" domestic water service, and a 4" sanitary service. The storm service is to be calculated by the Civil and the gas service is to be calculated at a later date. Please find the calculations attached.

**Building 2:**

Building 2 consist of 6,000 sf of retail space on the 1<sup>st</sup> floor, 6,000 sf of office space on the 2<sup>nd</sup> floor, and 3,500 sf of office space on the 3<sup>rd</sup> floor. The building will be covered by sprinklers. The building has an Ordinary Hazard I classification and does not require a standpipe. According to our calculation the building will require a 6" fire service, 2-1/2" domestic water service, and a 4" sanitary service. The storm service is to be calculated by the Civil and the gas service is to be calculated at a later date. Please find the calculations attached.

**Building 3:**

Building 3 consist of approximately 10,000 sf of parking below the first floor, and approximately 25,000 sf of senior housing on floors 1 – 3. The first floor consists of 8 one bedroom units and 2 two bedroom units. The second floor consists of 8 one bedroom units and 2 two bedroom units. The third floor consists of 2 one bedroom units and 2 two bedroom units. The building will be covered by sprinklers. The building has an Ordinary Hazard I classification and does not require a standpipe. According to our calculation the building will require a 6" fire service, 3" domestic water service, and a 6" sanitary service. The storm service is to be calculated by the Civil and the gas service is to be calculated at a later date. Please find the calculations attached.

**Building 4, 5 & 6:**

Building 4, 5 & 6 consist of approximately 12,500 sf of parking below the first floor, and approximately 36,000 sf of senior housing on floors 1 – 3. The first floor consists of 5 one bedroom units and 7 two bedroom units. The second floor consists of 5 one bedroom units and 9 two bedroom units. The third floor consists of 5 two bedroom units. The building will be covered by sprinklers. The building has an Ordinary Hazard I classification and does not require a standpipe. According to our calculation the building will require a 6" fire service, 3" domestic water service, and a 6" sanitary service. The storm service is to be calculated by the Civil and the gas service is to be calculated at a later date. Please find the calculations attached.

Information Per Plumbing Fixture				
Item	Total FU	Cold FU	Hot FU	DFU
Water Closet (Flush Valve)	10	10	0	6
Water Closet (Tank)	2.2	2.2	0	4
Private Bathroom Group (WC greater than 1.6 gpf)	8	6	3	6
Private Bathroom Group (1.6 gpf WC)	3.6	2.7	1.5	5
Bath Tub w/Shower	1.4	1	1	2
Shower	1.4	1	1	2
Urinal	10	10	0	4
Lavatory	0.7	0.5	0.5	1
Service Sink	3	2.25	2.25	2
Floor Drain	0	0	0	2
Hose Bib	3	3	0	0
Bar Sink	1.4	1	1	2
Prep Sink	4	3	3	2
Kitchen Sink	1.4	1	1	2
Kitchen Sink (Restaurant) 3-bay	8	6	6	6
Dishwasher (UC)	1.4	0	1.4	2
Dishwasher Door Type (commercial)	2	0	2	4
Other Sink	2	1.5	1.5	2
Automatic Clothes Washer (commercial)	4	3	3	3
Automatic Clothes Washer (residential)	1.4	1	1	2
Bidet	2	1.5	1.5	1
Drinking Fountain	0.5	0.5	0	0.5

Butterfield Bldg. 1 - Information For Total of Plumbing Fixture					
Item	Number of Fixtures	(Water) Total FU	Cold FU	Hot FU	(Sanitary) DFU
Water Closet (Flush Valve)	10.0	100.0	100.0	0.0	60.0
Water Closet (Tank)		0.0	0.0	0.0	0.0
Private Bathroom Group (WC greater than 1.6 gpf)		0.0	0.0	0.0	0.0
Private Bathroom Group (1.6 gpf WC)		0.0	0.0	0.0	0.0
Bath Tub w/Shower		0.0	0.0	0.0	0.0
Shower		0.0	0.0	0.0	0.0
Urinal		0.0	0.0	0.0	0.0
Lavatory	10.0	7.0	5.0	5.0	10.0
Service Sink	5.0	15.0	11.3	11.3	10.0
Floor Drain	10.0	0.0	0.0	0.0	20.0
Hose Bib	10.0	30.0	30.0	0.0	0.0
Bar Sink		0.0	0.0	0.0	0.0
Prep Sink		0.0	0.0	0.0	0.0
Kitchen Sink	3.0	4.2	3.0	3.0	6.0
Kitchen Sink 3-bay		0.0	0.0	0.0	0.0
Dishwasher (UC)	3.0	4.2	0.0	4.2	6.0
Dishwasher Door Type (commercial)		0.0	0.0	0.0	0.0
Other Sink		0.0	0.0	0.0	0.0
Automatic Clothes Washer (commercial)		0.0	0.0	0.0	0.0
Automatic Clothes Washer (residential)		0.0	0.0	0.0	0.0
Bidet		0.0	0.0	0.0	0.0
Drinking Fountain	5.0	2.5	2.5	0.0	2.5
Building Allowance		40 GPM			40.0
Total FU		162.9	151.8	23.5	154.5
Total GPM		98.0	55.0	21.0	
Main Pipe Size		2-1/2"			4"

Storm Water Calculations	Area Sq. Ft.	Rate (Inch/HR)	Cu. Ft./ HR	Size
Roof Area	(By Civil)			
Parking Area	(By Civil)			

Sprinkler Water Demand	Flow	Size
Standpipe Demand	0.00	6"
Sprinkler Demand: (Ordinary Hazard) 1500 Sq. Ft @ 0.15 density Combined Inside & Outside Hose	225 + 250 GPM 475 GPM	Standpipe Flow is most restrictive No fire pump is anticipated

Information Per Plumbing Fixture				
Item	Total FU	Cold FU	Hot FU	DFU
Water Closet (Flush Valve)	10	10	0	6
Water Closet (Tank)	2.2	2.2	0	4
Private Bathroom Group (WC greater than 1.6 gpf)	8	6	3	6
Private Bathroom Group (1.6 gpf WC)	3.6	2.7	1.5	5
Bath Tub w/Shower	1.4	1	1	2
Shower	1.4	1	1	2
Urinal	10	10	0	4
Lavatory	0.7	0.5	0.5	1
Service Sink	3	2.25	2.25	2
Floor Drain	0	0	0	2
Hose Bib	3	3	0	0
Bar Sink	1.4	1	1	2
Prep Sink	4	3	3	2
Kitchen Sink	1.4	1	1	2
Kitchen Sink (Restaurant) 3-bay	8	6	6	6
Dishwasher (UC)	1.4	0	1.4	2
Dishwasher Door Type (commercial)	2	0	2	4
Other Sink	2	1.5	1.5	2
Automatic Clothes Washer (commercial)	4	3	3	3
Automatic Clothes Washer (residential)	1.4	1	1	2
Bidet	2	1.5	1.5	1
Drinking Fountain	0.5	0.5	0	0.5

Butterfield Bldg. 2 - Information For Total of Plumbing Fixture					
Item	Number of Fixtures	(Water) Total FU	Cold FU	Hot FU	(Sanitary) DFU
Water Closet (Flush Valve)	10.0	100.0	100.0	0.0	60.0
Water Closet (Tank)		0.0	0.0	0.0	0.0
Private Bathroom Group (WC greater than 1.6 gpf)		0.0	0.0	0.0	0.0
Private Bathroom Group (1.6 gpf WC)		0.0	0.0	0.0	0.0
Bath Tub w/Shower		0.0	0.0	0.0	0.0
Shower		0.0	0.0	0.0	0.0
Urinal		0.0	0.0	0.0	0.0
Lavatory	10.0	7.0	5.0	5.0	10.0
Service Sink	5.0	15.0	11.3	11.3	10.0
Floor Drain	10.0	0.0	0.0	0.0	20.0
Hose Bib	10.0	30.0	30.0	0.0	0.0
Bar Sink		0.0	0.0	0.0	0.0
Prep Sink		0.0	0.0	0.0	0.0
Kitchen Sink	3.0	4.2	3.0	3.0	6.0
Kitchen Sink 3-bay		0.0	0.0	0.0	0.0
Dishwasher (UC)	3.0	4.2	0.0	4.2	6.0
Dishwasher Door Type (commercial)		0.0	0.0	0.0	0.0
Other Sink		0.0	0.0	0.0	0.0
Automatic Clothes Washer (commercial)		0.0	0.0	0.0	0.0
Automatic Clothes Washer (residential)		0.0	0.0	0.0	0.0
Bidet		0.0	0.0	0.0	0.0
Drinking Fountain	5.0	2.5	2.5	0.0	2.5
Building Allowance		40 GPM			40.0
Total FU		162.9	151.8	23.5	154.5
Total GPM		98.0	55.0	21.0	
Main Pipe Size		2-1/2"			4"

Storm Water Calculations	Area Sq. Ft.	Rate (Inch/HR)	Cu. Ft./ HR	Size
Roof Area	(By Civil)			
Parking Area	(By Civil)			

Sprinkler Water Demand	Flow	Size
Standpipe Demand	0.00	6"
Sprinkler Demand: (Ordinary Hazard) 1500 Sq. Ft @ 0.15 density Combined Inside & Outside Hose	225 + 250 GPM 475 GPM	Standpipe Flow is most restrictive No fire pump is anticipated

Information Per Plumbing Fixture				
Item	Total FU	Cold FU	Hot FU	DFU
Water Closet (Flush Valve)	10	10	0	6
Water Closet (Tank)	2.2	2.2	0	4
Private Bathroom Group (WC greater than 1.6 gpf)	8	6	3	6
Private Bathroom Group (1.6 gpf WC)	3.6	2.7	1.5	5
Bath Tub w/Shower	1.4	1	1	2
Shower	1.4	1	1	2
Urinal	10	10	0	4
Lavatory	0.7	0.5	0.5	1
Service Sink	3	2.25	2.25	2
Floor Drain	0	0	0	2
Hose Bib	3	3	0	0
Bar Sink	1.4	1	1	2
Prep Sink	4	3	3	2
Kitchen Sink	1.4	1	1	2
Kitchen Sink (Restaurant) 3-bay	8	6	6	6
Dishwasher (UC)	1.4	0	1.4	2
Dishwasher Door Type (commercial)	2	0	2	4
Other Sink	2	1.5	1.5	2
Automatic Clothes Washer (commercial)	4	3	3	3
Automatic Clothes Washer (residential)	1.4	1	1	2
Bidet	2	1.5	1.5	1
Drinking Fountain	0.5	0.5	0	0.5

Butterfield Bldg. 3 - Information For Total of Plumbing Fixture					
Item	Number of Fixtures	(Water) Total FU	Cold FU	Hot FU	(Sanitary) DFU
Water Closet (Flush Valve)		0.0	0.0	0.0	0.0
Water Closet (Tank)		0.0	0.0	0.0	0.0
Private Bathroom Group (WC greater than 1.6 gpf)	30.0	240.0	180.0	90.0	180.0
Private Bathroom Group (1.6 gpf WC)		0.0	0.0	0.0	0.0
Bath Tub w/Shower		0.0	0.0	0.0	0.0
Shower		0.0	0.0	0.0	0.0
Urinal		0.0	0.0	0.0	0.0
Lavatory	6.0	4.2	3.0	3.0	6.0
Service Sink	3.0	9.0	6.8	6.8	6.0
Floor Drain	3.0	0.0	0.0	0.0	6.0
Hose Bib	3.0	9.0	9.0	0.0	0.0
Bar Sink		0.0	0.0	0.0	0.0
Prep Sink		0.0	0.0	0.0	0.0
Kitchen Sink	24.0	33.6	24.0	24.0	48.0
Kitchen Sink 3-bay		0.0	0.0	0.0	0.0
Dishwasher (UC)	24.0	33.6	0.0	33.6	48.0
Dishwasher Door Type (commercial)		0.0	0.0	0.0	0.0
Other Sink		0.0	0.0	0.0	0.0
Automatic Clothes Washer (commercial)		0.0	0.0	0.0	0.0
Automatic Clothes Washer (residential)	24.0	33.6	24.0	24.0	48.0
Bidet		0.0	0.0	0.0	0.0
Drinking Fountain		0.0	0.0	0.0	0.0
Total FU		363.0	246.8	181.4	342.0
Total GPM		98.0	74.0	61.0	
Main Pipe Size		3"			6"

Storm Water Calculations	Area Sq. Ft.	Rate (Inch/HR)	Cu. Ft./ HR	Size
Roof Area	(By Civil)			
Parking Area	(By Civil)			

Sprinkler Water Demand	Flow	Size
Standpipe Demand	0.00	6"
Sprinkler Demand: (Ordinary Hazard) 1500 Sq. Ft @ 0.15 density Combined Inside & Outside Hose	225 + 250 GPM 475 GPM	Standpipe Flow is most restrictive No fire pump is anticipated

Information Per Plumbing Fixture				
Item	Total FU	Cold FU	Hot FU	DFU
Water Closet (Flush Valve)	10	10	0	6
Water Closet (Tank)	2.2	2.2	0	4
Private Bathroom Group (WC greater than 1.6 gpf)	8	6	3	6
Private Bathroom Group (1.6 gpf WC)	3.6	2.7	1.5	5
Bath Tub w/Shower	1.4	1	1	2
Shower	1.4	1	1	2
Urinal	10	10	0	4
Lavatory	0.7	0.5	0.5	1
Service Sink	3	2.25	2.25	2
Floor Drain	0	0	0	2
Hose Bib	3	3	0	0
Bar Sink	1.4	1	1	2
Prep Sink	4	3	3	2
Kitchen Sink	1.4	1	1	2
Kitchen Sink (Restaurant) 3-bay	8	6	6	6
Dishwasher (UC)	1.4	0	1.4	2
Dishwasher Door Type (commercial)	2	0	2	4
Other Sink	2	1.5	1.5	2
Automatic Clothes Washer (commercial)	4	3	3	3
Automatic Clothes Washer (residential)	1.4	1	1	2
Bidet	2	1.5	1.5	1
Drinking Fountain	0.5	0.5	0	0.5

Butterfield Bldg. 4, 5 & 6 - Information For Total of Plumbing Fixture					
Item	Number of Fixtures	(Water) Total FU	Cold FU	Hot FU	(Sanitary) DFU
Water Closet (Flush Valve)		0.0	0.0	0.0	0.0
Water Closet (Tank)		0.0	0.0	0.0	0.0
Private Bathroom Group (WC greater than 1.6 gpf)	52.0	416.0	312.0	156.0	312.0
Private Bathroom Group (1.6 gpf WC)		0.0	0.0	0.0	0.0
Bath Tub w/Shower		0.0	0.0	0.0	0.0
Shower		0.0	0.0	0.0	0.0
Urinal		0.0	0.0	0.0	0.0
Lavatory	21.0	14.7	10.5	10.5	21.0
Service Sink	6.0	18.0	13.5	13.5	12.0
Floor Drain	6.0	0.0	0.0	0.0	12.0
Hose Bib	6.0	18.0	18.0	0.0	0.0
Bar Sink		0.0	0.0	0.0	0.0
Prep Sink		0.0	0.0	0.0	0.0
Kitchen Sink	31.0	43.4	31.0	31.0	62.0
Kitchen Sink 3-bay		0.0	0.0	0.0	0.0
Dishwasher (UC)	31.0	43.4	0.0	43.4	62.0
Dishwasher Door Type (commercial)		0.0	0.0	0.0	0.0
Other Sink		0.0	0.0	0.0	0.0
Automatic Clothes Washer (commercial)		0.0	0.0	0.0	0.0
Automatic Clothes Washer (residential)	31.0	43.4	31.0	31.0	62.0
Bidet		0.0	0.0	0.0	0.0
Drinking Fountain		0.0	0.0	0.0	0.0
Total FU		596.9	416.0	285.4	543.0
Total GPM		150.0	108.0	82.0	
Main Pipe Size		3"			6"

Storm Water Calculations	Area Sq. Ft.	Rate (Inch/HR)	Cu. Ft./ HR	Size
Roof Area	(By Civil)			
Parking Area	(By Civil)			

Sprinkler Water Demand	Flow	Size
Standpipe Demand	0.00	6"
Sprinkler Demand: (Ordinary Hazard) 1500 Sq. Ft @ 0.15 density Combined Inside & Outside Hose	225 + 250 GPM 475 GPM	Standpipe Flow is most restrictive No fire pump is anticipated



CIVIL ENGINEERS • LAND PLANNERS

**PROJECT: Butterfield Redevelopment**

JOB NO. 14-25

LOC:

DATE: Nov-14

**SHEET:** 1 OF 1

Hydraulic loading rates as per New York State Design Standards for Intermediate Wastewater Treatment Systems

### Pipe Design Based on Manning Formula for $n = 0.01$

[illegible]

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**NEW YORK STATE  
DESIGN STANDARDS FOR  
INTERMEDIATE SIZED  
WASTEWATER TREATMENT SYSTEMS**

**MARCH 5, 2014**

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**New York State  
Department of Environmental Conservation  
Division of Water  
625 Broadway  
Albany, New York 12233-3505**



Andrew M. Cuomo, Governor

Joe Martens, Commissioner

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largest daily (24-hour) measured volume during the same period expressed in volume-per-unit time is an acceptable method for determining the maximum day flow rate. The analysis should account for operational variations (e.g. peak seasonal, weekends, special events, delivery period, etc.) and exclude extraneous data. There should be a reasonable explanation for the operational variations and any extraneous data excluded.

#### Method 3: Water Usage Data

A minimum of one year of data collected during similar operational conditions may be required by the Reviewing Engineer. If sufficient measured water usage data is not available, Method 3 should not be used. The average of the daily (24-hour) flow over the duration of the data collection period is an acceptable method for determining the average daily flow rate. The largest daily (24-hour) measured volume during the same period expressed in volume per unit time is an acceptable method for determining the maximum day flow rate. The analysis should account for operational variations (e.g. peak seasonal, weekends, special events, delivery period, etc.) and exclude extraneous data. There should be a reasonable explanation for operational variations and any extraneous data excluded.

For each of these methods, the peak hourly flow rate (largest hourly volume expressed in volume per unit time) should also be identified. When variation in the wastewater flow rate is expected to be substantial, it is necessary to examine the significant delivery period of the wastewater and base the system design upon this information to prevent an excessive rate of flow through wastewater collection and treatment systems. Flow equalization prior to treatment units should be considered to avoid hydraulic overloading of treatment units during peak loading periods (peak hourly flow and maximum daily flow).

**Table B-3 Typical Per-Unit Hydraulic Loading Rates**

#### *Residential*

<i>Type of Use</i>	<i>Unit</i>	<i>Gallons per Day</i>
Apartment	Per Bedroom	110/130/150 <sup>16</sup>
Mobile Home Park	“Single-Wide” Home	220
	“Double-Wide” Home	330

<sup>16</sup> 110 gpd for post 1994 plumbing code fixtures; 130 gpd for pre 1994 fixtures; and 150 gpd for pre 1980 fixtures. Homes over 1,000 gpd, community systems, or lodging establishments with high flow fixtures must account for any higher peak flow periods.

Single Family Residence	Per Bedroom	110 / 130/ 150 <sup>17</sup>
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### ***Campgrounds***

<i>Type of Use</i>	<i>Unit</i>	<i>Gallons per Day</i>
Day Camp	Per Person	15
	Add for Shower	5
	Add for Lunch	5
Campground	Per Unsewered Site <sup>18</sup>	55(includes showers)
	Per Sewered Site – with water hookups	100
	Per Sewered Site – without water hookups	55
Campground Day Use	Per Person	5
Dumping Station <sup>19</sup>	Per Unsewered Site	10
	Per Sewered Site	5

<i>Type of Use</i>	<i>Unit</i>	<i>Gallons per Day</i>
Assisted Living Facility/Complex	Per Bed <sup>20,21</sup> – add 10 gpd for in room kitchen	110/130/150
Group Home (residential-style building)	Per Bed <sup>20</sup> - add 150 gpd per house for garbage grinder	110/130/150
Nursing Home (hospital care)	Per Bed <sup>20,21</sup>	175

<sup>17</sup> For individual household systems under 1,000 gpd, use design flows in the NYSDOH's *Wastewater Treatment Standards Residential Onsite Systems - Appendix 75- A*.

<sup>18</sup> Additional wastewater flow due to food service or laundry shall be accounted for. Structures available for overnight occupancy other than those meeting the definition of a camping unit shall be based on 150 gpd / unit for design flow purposes, pursuant to NYSDOH – *Chapter 1 State Sanitary Code Subpart 7-3 Campgrounds*.

<sup>19</sup> The addition of flow for dump station sewage may be prorated by using an estimated percentage of sites suited for RV use based on historical data. No reduction for low flow fixture usage should be applied here.

<sup>20</sup> Add 15 gpd per employee

<sup>21</sup> Add for Food Service (e.g. 24-hour restaurant; refer to Food Service Operations Table)

Hospital	Per Bed <sup>20,21</sup>	175
	Per Outpatient	30
Church	Per Seat <sup>20</sup>	3
Church Hall/Fire Hall	Per Seat <sup>21</sup>	10
Library/ Museum	Per Patron <sup>20,21</sup>	5
Public Park	Per Person (toilet only)	5
Prison / Jail	Per Inmate <sup>20,21</sup>	150
School – Day	Per Student	10
- or -	Elem./ Jr. High / Sr. High	7 / 9 / 12
- and -	Add for meals / showers	5 / 5
School Boarding	Per Student <sup>20,21</sup>	75

### ***Commercial***

<i>Type of Use</i>	<i>Unit</i>	<i>Gallons per Day</i>
Airport/Bus/Rail Terminal	Per Passenger <sup>22</sup>	5
	Per Toilet	400
Barber Shop / Beauty Salon	Per Station without and with hair care sink	50/ 200
Bowling Alley	Per Lane <sup>22,23</sup>	75
Bed & Breakfast	Per Room (see note under Residential)	110/130/150
Casino	Per Employee/shift plus	15
	Per Sq. Ft. for non-lodging customer use	0.3
Country Clubs & Golf Courses	Per Round of Golf <sup>21,22</sup> (add for bar, banquet, shower or pool facilities and golf tournaments)	20
Concert Hall / Arena / Assembly Hall / Theater / Stadium / Skating Rink	Per Seat <sup>21,22</sup>	5

<sup>22</sup> Add 15 gpd per employee/shift

<sup>23</sup> Add for Food Service (e.g. 24 hour restaurant; refer to Food Service Operations Table)

Day Care	Per Child <sup>21</sup>	20
Doctors Office	Per Doctor	250
Dog / Pet Grooming	Per Station	500
Also see Kennel and Veterinary Office below.		
Dentist	Per Chair <sup>24</sup>	250
Drive-In Theater	Per Car Space <sup>25</sup>	5
Factory / Distribution Warehouse	Per Employee/shift; add for showers	15 10
Fairgrounds	Per Visitor <sup>25</sup>	5
Health Club	Per Patron	20
Highway Rest Area	Per Traveler <sup>25</sup> Per Dump Station Vehicle	5 7
Hotel	Per Sleeping Unit <sup>25</sup> add for banquet hall, night club, pool/spa, theatre, etc.	110/130/150
Kennel	Per Kennel/Run/Cage	50
Laundromat	Per Machine	580
Marina	Per Slip <sup>25</sup> with shore side restroom facilities including shower; add per slip for dump station	20 7
Migrant Worker Housing	Per Person	50
Motel	Per Sleeping Unit; add for in-room kitchen; add for in-room jacuzzi/spa	110/130/150 10 20
Office Building	Per Employee <sup>25</sup> ; add for showers	15 5
Service station/Convenience store	Per Toilet <sup>25</sup>	400

<sup>24</sup> Dental offices must recycle mercury amalgam instead of washing it down the drain. NYSDEC's website has guidance referencing the 2002 law.

<sup>25</sup> Add for Food Service (e.g. 24-hour restaurant; refer to Food Service Operations Table)

Shopping Center / Grocery Store / Department Store	Per Sq. Ft. <sup>25,26</sup> ; add for deli, bakery, butcher	0.1
Swimming Pool / Bath House	Per Swimmer	10
Veterinary Office	Per Veterinarian	200

### ***Food Service Operations<sup>27</sup>***

<i>Type of Use</i>	<i>Unit</i>	<i>Gallons per Day</i>
Ordinary Restaurant	Per Seat	35
24-Hour Restaurant	Per Seat (for cafeterias: pro rate flow in proportion to the hours)	50
Fast Food Restaurant	Per Seat	25
	Per Drive-Up Window	500
Lounge, Bar	Per Seat	20
Drive-In	Per Car Space	50
Banquet Hall	Per Seat	10
Restaurant along Freeway	Per Seat	75

### **B.6.c Infiltration, Inflow, Non-Sanitary and Prohibited Flows**

Cooling water, roof drains, footing, sump and basement floor drains should not be discharged to the treatment system. Clean water from ice machines, water cooled refrigerators or coolers should also be excluded. Undetected leaks from plumbing fixtures, typically toilets and faucets, can waste significant amounts of water and subsequently increase the volume of wastewater to be treated. Simple repairs and routine operation and maintenance of plumbing fixtures can save water and increase the efficiency of wastewater treatment system.

Similarly, leaking sewer joints, pipe tank seals, tank riser seals, cracks in treatment tanks and manhole

<sup>26</sup> Add 15 gpd per employee/shift

<sup>27</sup> Garbage grinder use should be evaluated in the design phase of the project and accounted for in tank sizing per Section D.6 Septic Tanks.