

Memorandum

TO: Williston Selectboard
Rick McGuire, Town Manager

From: Ken Belliveau, AICP, Director of Planning

Date: April 3, 2018

RE: **DRAFT Attachment A for Fiscal Year 2019**

1. Overview

This is the proposed Attachment A to the town's Sewer Allocation Ordinance for the period of July 1, 2018, through June 30, 2019 (FY 2019). Its purpose is for the Selectboard to use in making annual allocation decisions of available wastewater treatment capacity reserved for the Town of Williston at the Essex Junction Wastewater Treatment Facility for the upcoming fiscal year. The wastewater treatment capacity of the Essex Junction treatment facility is shared by the communities of Essex Junction, Essex and Williston under a contractual agreement.

The authority and categories for allocating any available wastewater treatment capacity is specified in the town's *Sewer Allocation Ordinance* last amended on May 4, 2016. The ordinance is intended to provide a method for allocating wastewater treatment capacity for new or expanded industrial, commercial and residential uses in accordance with the town's zoning districts and land use classifications.

- **Available Capacity**

The Town of Williston currently has a total of approximately 1,050,000 gallons per day (gpd) of wastewater treatment capacity reserved for its use at the Essex Junction treatment plant, representing approximately 32% of the plant's overall design capacity. This sewer capacity was intended to be allocated across the category of uses specified in Section 5 of the *Sewer Allocation Ordinance*. Historically, the Selectboard has budgeted allocation over a period of at least 10 years spanning FY 2016-2025. Allocations were made by the Selectboard on an annual basis. The town's current Residential Growth Management process described in Chapter 11 of the town's *Unified Development Bylaw* is predicated on the availability of sewer capacity to support the town's goals through the end of FY 2025. Residential developments within the town's sewer service area may be approved for up to 68 dwellings per year under the terms of the current growth management system. Sewer capacity must also be made available for commercial, industrial, and institutional uses, as well as safety reserves necessary to allow for temporary spikes in system flow levels.

In recent years, the Selectboard has indicated a desire to develop a more long term time horizon for making allocation decisions. This is a reflection of the amount of additional headroom available within Williston's portion of the plant's capacity, recent trend data suggesting a slower rate of capacity utilization, and efforts by the town to secure additional capacity from Essex Junction. Thus in this year's report, staff and the planning commission are putting forth a recommendation for basing allocation decisions over a 20-year time frame.

- **Acquiring Additional Capacity**

In 2016 the town finished purchasing 50,000 gpd of additional wastewater treatment capacity from the Village of Essex Junction, bringing the Williston share of the plant’s capacity to 1,030,000 gpd of available wastewater treatment capacity. The town is in the second year of a five year plan of acquiring an additional 50,000 gpd of capacity at the plant from Essex Junction at a rate of 10,000 gpd per year for five years. The town’s current capacity thus now stands at 1,050,000 gpd. When completed in FY 2022, this would bring the Williston portion of the plant’s capacity to 1,080,000 gpd. Staff recommends that each 10,000 gpd of capacity by used for allocation purposes once it has been purchased from Essex Junction (see Table 1).

Table1. Schedule of Acquiring Additional Capacity

Fiscal Year	Available Capacity
FY 2019	1,050,000
FY 2020	1,060,000
FY 2021	1,070,000
FY 2022	1,080,000

2. Determining Available Capacity for Allocation

In order to determine how much capacity is available for potential allocation, several factors must first be considered and accounted for:

- 1) the amount of capacity that the town is committed to provide and currently being used by existing customers on an average basis per day,
- 2) the amount of treatment capacity the town has already committed itself to provide but which is not yet being used,
- 3) an appropriate amount of reserved capacity to insure safe daily operations anticipating weather fluctuations, seasonal variations in system usage, infiltration and in-migration, or other emergencies (recommended by Aldrich and Elliott at 7% of total capacity).

- **Existing Flows**

The average daily flow of wastewater from the town in Calendar Year 2017 was calculated at 650,679 gpd, an increase of 8% from 604,208 gpd observed in 2016. Wastewater flows fluctuate years to year, but the trend has shown an overall decline from the all-time high of 705,264 gpd in 2006 capping a period of an escalating pattern of increasing sewerage flows. Since then, average daily flows have been observed to vary within a fairly narrow range close to the five-year moving average year after year (see Figures 2 & 3).

There are a number of factors that affect the amount of wastewater flowing through the system, including the actual level of usage of the sewer system by its intended users, but sewerage flows are also affected by the amount of rainfall received and by leaks in the system that allows unwanted and unbilled for flows of water into the system. Periods of persistent, above average rainfall often times result in increased amounts of water leaking into the sewer system (inflow and in-migration), boosting flow levels beyond those generated by the intended users of the system, as seen in 2011. The public works department reports that they’ve been successful in

identifying and repairing the network of pipes in the system in an effort to reduce sources of inflow and in-migration.

The continued success of these efforts will help the town make more efficient use of its available wastewater treatment capacity. Water conservation by customers may also be a factor affecting flow levels as older higher water using appliances and plumbing fixtures get replaced by more efficient ones. The net effect is that the volume of sewerage flowing through the system is roughly the same as the amount observed 10 years ago despite an increase in the number of users connected to the town's sewer system each year.

Figure 2: Average Daily Sewage Flows, River Cove Pump Station, 2007-2017

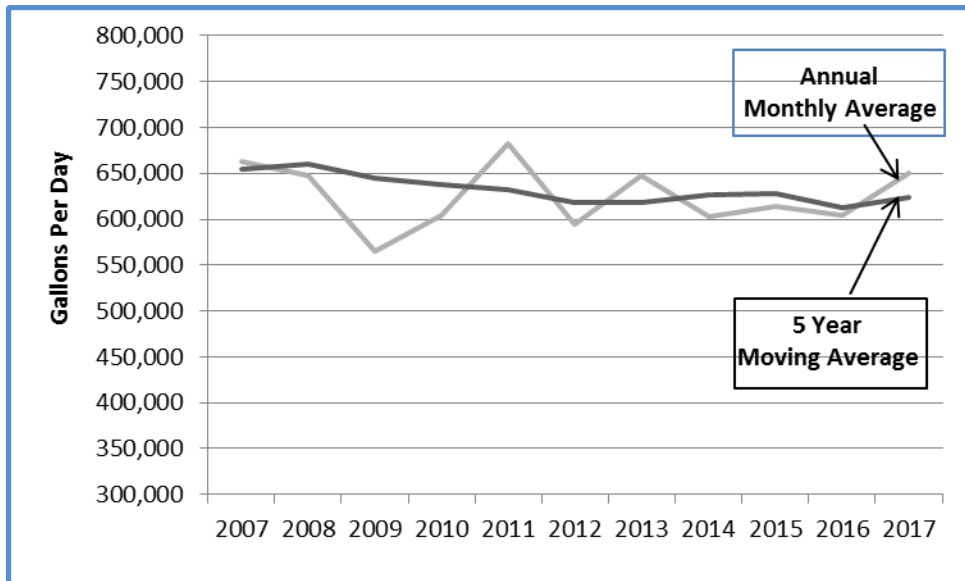
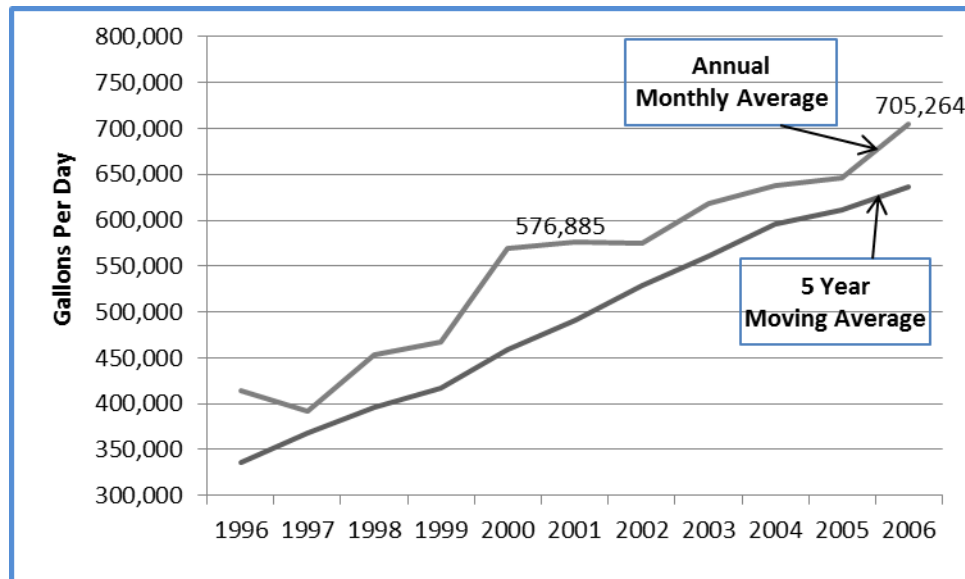


Figure 3: Average Daily Sewage Flows, River Cove Pump Station, 1996-2006



Moving forward, it is expected that sewage flows will eventually begin to increase reflecting the ongoing addition of new users to the system, both residential and commercial. However, the recent trend data has yet to show that effect.

In recent years, the town has estimated the amount of capacity needed for existing users using either the five-year moving average or the actual observed volume from the previous calendar year, whichever is greater as the two lines have crossed over each other almost yearly. For FY 2019, staff recommends using the annual observed volume for estimating the amount of capacity needed for existing system users since it is higher and thus a more conservative estimate.

- **Capacity Committed Not Yet In Use**

This is the amount of capacity that is reserved for future users that the town has already committed to serve, but not yet on-line. This is based on the estimates used by the department of public works records of its future allocation agreements. As of January 2017, there are 85,215 gpd in this category. This is reported below in Table 2.

- **Reserve Capacity**

The town also maintains an amount or reserve capacity or 7% of the town’s total amount of available wastewater treatment capacity at the Essex Junction plant, or 73,500 gpd as recommended by the town’s engineering consultant (included in Table 2).

- **Calculating Available Allocation Capacity**

Based on the most recent measures of average current usage and sewer capacity that the town has already committed to potential users but which is not yet being used, the amount of available capacity available for potential allocation may be calculated as shown in Table 1.

Table 2: Calculation of capacity available for allocation

Total available treatment capacity	1,050,000 gpd
Projected capacity needed for existing users (annual monthly ave.)	- 650,679gpd
Capacity committed not yet on-line	- 65,826 gpd
Reserve capacity (7% of total treatment capacity)	- 73,500 gpd
Remaining available capacity for remaining FY 2018-2037	259,995 gpd

3. Allocation of Available Capacity

The results of this calculation indicate that there is an estimated maximum of 259,995 gpd of wastewater treatment capacity available for allocation by the Selectboard, or roughly 25% of the town’s total capacity at the facility. The town’s residential growth management system was recently updated to cover FY 2016-FY 2025, or a 10 year time frame. We are now in the third year of that allocation period, which means there are seven (7) allocation years remaining. The planning commission also recently recommended that the town use a 20-year time frame for budgeting sewer capacity for allocation, making adjustments on a rolling basis based on the amount of remaining allocation available, which would run through FY 2037.

Dividing the remaining capacity currently available by 20 years leaves 13,000 gpd available for allocation on average for each of those years (see below). It should be noted that new residential development requires approximately 8-10,000 gpd ± of sewer capacity annually to support the current growth management system. Past experience has also shown that the amount of capacity actually sold to end users by the town varies from year to year, so this should be expected moving forward.

$$\frac{259,995 \text{ gpd}}{20 \text{ years}} = 13,000 \text{ gpd / year}$$

Allocation History

In 2014, the Selectboard asked staff to provide some additional information about allocation usage from previous years to aid in the annual wastewater allocation process. Information regarding sewer allocation for the past 10 years, from FY 2006 through 2015 Table 3 shows the amount of capacity allocated each year, and the amount of allocation that was actually purchased by applicants is displayed in Table 4. Staff also calculated the average (mean) for each category over the 10 year time frame.

The data indicate that on average, the Selectboard has approved annual allocations of sewer capacity of approximately 103,000 gpd counting the required reserve capacity, including approximately 28,000 gpd of new capacity. The amount of allocation sold on average during that 10 year period is approximately 10,000 gpd, or roughly one third of the amount of capacity actually allocated by the Selectboard. One reason for this discrepancy is the category of “Encourage Specific Development” which contains 10,000 gpd of capacity, yet it tends to be utilized very sporadically.

The amount of allocation purchased by applicants each year is much more variable than the amount of capacity allocated in Attachment A, ranging from a low of roughly 3,366 gpd to a maximum of roughly 17,500 gpd. This is most likely due to fluctuations in the business cycle and periodic one-time events that result in periodic large purchases of sewer capacity. There are also a number of property owners of commercial land who have significant amounts of sewer capacity reserved for their properties purchased prior to the period under review. This has enabled a number of recent commercial developments to be built without the property owners having to purchase additional allocation. In addition, the town has seen significantly less new commercial development in the past 5-10 years than it had seen in the years of the 1990s and early 2000s.

Table 3: Selectboard Approved Annual Allocation of Sewer Capacity, FY 2008 - 2017

	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	Mean
5.2.1/5.2.2 new commercial and industrial	2,029	2,039	2000	4,000	7,500	7,500	7,500	7,500	7,500	7,500	5,507
5.2.3/5.2.4 new residential	10,940	10,555	9,755	11,230	10,280	10,280	12,410	9,310	11,840	8,740	10,534
5.2.5 residential additions/minor subdivisions	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
5.2.6 affordable housing	0	135	0	0	0	0	0	0	0	0	14
5.2.7 planned public facilities	3,212	3,212	1,000	1,000	1,000	1,000	1,000	0	0	0	1,142
5.4 pollution abatement	2,800	2,668	2,668	2,500	2,500	2,500	2,500	2,500	2,500	1,500	2,464
5.2.9 encouraging specific development	0	4,460	9,600	10,000	10,000	10,000	10,000	10,000	10,000	10,000	8,406
TOTAL NEW ALLOCATIONS	20,481	24,569	26,523	30,230	32,780	32,780	34,910	30,810	33,340	29,240	29,566
5.2.8 reserve	79,600	79,600	68,600	68,600	68,600	72,100	72,100	72,100	72,100	72,800	72,620
TOTAL RESERVE ALLOCATIONS											
TOTAL ALLOCATED	100,081	104,169	95,123	98,830	101,380	104,880	107,010	102,910	105,440	102,040	102,186

Table 4: Sewer Allocation Sold to Applicants by Fiscal Year, FY 2008 - 2017

	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	Mean
5.2.1/5.2.2 new commercial and industrial	1,087	1,800	2,001	710	3,027	720	963	1,331	2,746	7,309	2,169
5.2.3/5.2.4 new residential	9,940	10,175	8,230	6,785	1,742	4,935	5,805	1,520	1,745	8,660	5,954
5.2.5 residential additions/minor subdivisions	1,245	520	500	480	755	815	550	290	535	1,155	685
5.2.6 affordable housing	0	0	0	0	0	0	0	0	0	0	0
5.2.7 planned public facilities	0	0	250	0	0	0	0	0	0	0	25
5.4 pollution abatement	132	0	340	135	0	0	0	0	0	0	61
5.2.9 encouraging specific development	0	1,122	6,200	1,015	0	0	10,000	0	0	0	1,834
											0
TOTAL NEW ALLOCATIONS	12,404	13,617	17,521	9,125	5,524	6,470	17,318	3,141	5,026	17,124	10,727
											0
5.2.8 reserve	0	0	0	14,750	0	0	0	0	0	0	1,475
											0
TOTAL RESERVE ALLOCATIONS											0
											0
TOTAL ALLOCATED	12,404	13,617	17,521	23,875	5,524	6,470	17,318	3,141	5,026	17,124	12,202

This analysis suggests that if these observed patterns of sewer capacity utilization continue, the town should have sufficient capacity to accommodate the demand for sewer capacity over the next 20 years.

Table 5: Comparison of Allocations

Proposed Allocation	10-Year Average Allocation	10-Year Average Sold
42,890 gpd	29,566 gpd	10,727 gpd

Proposed Allocation for FY 2019

Section 5 of the Sewer Allocation Ordinance specifies the categories to which any available sewer capacity should be assigned. Staff has prepared a list of recommended amounts of system allocation in each of these categories. In some cases, these amounts have been carried forward from the previous year’s allocation in order to continue to reserve some of the system’s capacity for projects or uses that have not yet materialized but may still likely do so in the near future. Some of these are newly proposed allocations. A proposed allocation schedule is described in Table 5.

For FY 2019, staff is recommending a significantly higher amount of sewer allocation for some of the allocation categories as in FY 2018, specifically new residential and new commercial. In recent years, there has been more than a sufficient amount of sewer allocation available to satisfy the demand over the past few years. Development activity has become more brisk over the past year. Two proposed hotels are on the horizon, one of which is anticipated needing 12,000 gpd of allocation in FY 2019. The Selectboard will need to decide how to best deal with the amount of sewer allocation needed for this proposed development. In FY 2018 a hotel received 10,000 gpd of allocation from Encourage Specific Development. Based on the discussion heard by staff at that time, the current proposal is to place the needed 12,000 gpd for the hotel in the new commercial category.

For new residential development, staff has estimated the amount of capacity needed for the 68 dwelling unit equivalents awarded growth management allocation by the DRB at 60 one-bedroom units at 75 gpd, 30 two-bedroom dwelling units @ 135 gpd, and 8 three-bedroom dwellings @ 230 gpd. The actual number of bedrooms constructed in some developments will vary according to the desire of prospective buyers, but this should provide a sufficient amount of capacity to satisfy demand. It should also be noted that one bedroom dwellings are considered to be only ½ of a dwelling unit equivalent for the purposes of growth management allocation but not sewer allocation. Thus there are 60 one-bedroom units listed which equals 30 dwelling unit equivalents in growth management.

The proposed allocation schedule recommends approximately 28,880 gpd of new allocation for FY 2018.

Table 5: Proposed Allocation of Reserve Sewer Capacity (gpd)

Allocation Categories	2017-2018	2018-2019
5.2.1/5.2.2 new commercial and industrial	7,500	19,500
5.2.3/5.2.4 new residential, 2018-19	8,740	10,390
5.2.5 residential additions/minor subdivisions	1,500	1,500
5.2.6 affordable housing		
5.2.7 planned public facilities		
5.4 pollution abatement	1,500	1,500
5.2.9 encouraging specific development	10,000	10,000
TOTAL NEW ALLOCATIONS >>>	29,240	42,890
5.2.8 reserve	72,800	73,500
TOTAL RESERVE ALLOCATIONS >>>	72,800	73,500
TOTAL ALLOCATED (New plus Reserve)>>	102,040	116,390

Explanation of Categories

New Commercial. This category provides capacity for new and expanded businesses requiring additional sewer allocation based on use. It is available on a first come, first served basis after July 1 each year and administered by the public works department. The amount of capacity in this category was increased several times since 2010 because of additional available capacity for allocation, and to insure that there would capacity available to support potential business expansions as needed. An additional 12,000 gpd has been included in this year's allocation in anticipation of a proposed hotel with a restaurant.

New Residential. This represents dwelling units in various residential projects that may seek allocation, including Cottonwood Crossing, The Hamlet, and Finney Crossing. These units have been approved for growth management allocation by the DRB within the past several years. The recent trend has been for developers to build smaller dwellings with fewer bedrooms, and these estimates reflect that trend.

Number of Dwellings	Gallons Per Day (GDP)	Total Gallons Per Day
60 - 1 bedroom units	75	4,500
30 – 2 bedroom units	135	4,050
8 – 3 bedroom units	230	1,840
108 total dwellings units		10,390

Affordable Housing: There are no new affordable housing units included for allocation this coming fiscal year in this category.

Encouraging Specific Development. No new projects falling into this category are currently identified. The capacity included in this category would be available for possible allocation on a project by project basis upon Selectboard review and approval provided the projects further identified goals within the town plan. In recent years, some of the expansion efforts of Vermont Technical College have received allocation from this category, and in FY 2014 Green Mountain Coffee Roasters received 10,000 gpd from this category. New significant employment generating businesses seeking to locate or expand in Williston needing allocation of sewer capacity might potentially receive allocation from this category.

Planned Public Facilities. For several years, the town has previously placed 1,000 gpd in this category to support a possible expansion of the Allenbrook School, and more recently for the new public works garage. The public works garage has been built, and no expansion of the school system is being contemplated. The need for additional sewer capacity to support any new or expanded public facilities is thus not anticipated in the foreseeable future.

Reserve: The reserve buffers the system against storm water infiltration, equipment failures, etc. It also provides capacity for areas where the failure of on-site wastewater disposal systems creates a public health emergency. The reserve figure has typically been calculated at 7% of the total system capacity (73,500 gpd) which is recommended for FY 2018-19. Any changes in policy made by the Selectboard to alter this number would potentially affect the amount of capacity available for allocation.

Pollution Abatement: No new projects are currently identified, and we have not used capacity from this category in the past decade. Staff suggests placing 1,500 gpd into this category so that it will be available should a need meeting criteria in the ordinance arise during this fiscal year. This capacity would be available for properties within the sewer service area seeking to connect to the town's sewer system because of a failing septic system.