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MEMORANDUM

TO: Select Board

FROM: Water/Wastewater Allocation Committee

DATE: April 15, 2019

RE: Recommended allocation system revisions

Committee Background:

The Select Board initially discussed the purpose for the Water/Wastewater Allocation Committee and appointed members on May 1, 2017; however, due to a variety of factors, the committee didn't get off the ground until July 2018. The Committee's purpose and scope as outlined by the Select Board:

- Examine how allocation ordinances or procedures work in other municipalities.
- Make recommendations regarding an allocation framework, including what the baseline should be (e.g., time, population, water quality, cost, blended approach).
- Make a recommendation regarding the appropriate ordinance venue – i.e., should the allocation policy appear in the zoning regulations as a "growth control" tool, or in a stand-alone allocation ordinance focused on impact to infrastructure, regulatory compliance, and/or impact on current users.
- Examine whether or not requirements related to low flow or other efficiency/conservation models can extend capacity and useful life of infrastructure without capital improvements to the wastewater treatment facility.
- Re-examine and make recommendations related to the recently changed fee structures.

The Committee met twelve times from July 2018 until March 2019, and was comprised of the following members with representation from various Town boards and interested citizens: Rob Bast (citizen), Carl Bohlen (Affordable Housing Committee), Peter Erb (citizen), Jeff French (Planning Commission), Andrew Frost (Economic Development Commission), Aaron Kimball (Select Board), Andrea Morgante (Select Board), Sarah Murphy (Development Review Board), Dan Myhre (citizen). Alex Weinhagen (Director of Planning & Zoning) provided staff support.

Allocation Framework Recommendations:

The Committee recommends creating an allocation system similar to that used by Williston, with a scoring system for new development projects based on Hinesburg-specific goals and priorities. The Committee spent substantial time and effort discussing how such a scoring system could work and what types of development should receive priority for allocation based on the Hinesburg Town Plan. See the attached "Allocation Scoring System" document for details. The proposed scoring system identifies the following six criteria within which projects could score points:

- Public Infrastructure
- Job Creation
- Housing Needs
- Stormwater Treatment
- Village Proximity and Redevelopment
- Energy Efficiency and Renewable Technology*

  * renewable technology points still being refined with help from Energy Committee

Simply put, a fixed amount of allocation would be assigned once per year for projects that had been through a sketch plan or conceptual-level review. Rather than first come, first served allocation, the system would be competitive, with projects scoring the most points getting priority for the allocation available in that year.

Similar to Williston's system, the Committee recommends this allocation system be the purview of both the Select Board and the Development Review Board (DRB). The Select Board would make decisions about overall allocation available per year in various categories. The Development Review Board would review and assign allocation to specific projects based on the scoring system. As such, the basic allocation structure would be detailed in a revised water and wastewater allocation ordinance (Select Board), while the project review, scoring, and actual assignment of allocation would be detailed in the Zoning Regulations, and administered by the DRB. The Committee makes the following recommendations on related details for administering this system:

Allocation Time Horizon – The Select Board should review the remaining water and sewer capacity, and apportion this over a reasonable number of years. Williston apportions all of their sewer capacity over a ten year period. Hinesburg's capacity is far less and is currently in flux with a possible new well and planned wastewater treatment facility upgrades. More clarity on remaining unallocated capacity and new, future capacity is needed prior to finalizing this system.

Ordinance & Regulation Updates – Implementation of this system will require the update of the water/wastewater allocation ordinance and the Zoning Regulations. The Select Board should discuss draft ordinance revisions first, in order to provide guidance to the Planning Commission on the necessary zoning revisions.

Annual Review Requirement – Similar to the Williston model, the DRB should assign allocation once per year based on development projects that have already been through a conceptual level review – i.e., similar to the sketch plan review currently used for subdivisions. This review need not be complicated, but is necessary ensure that projects being scored and receiving allocation are real projects that are capable of moving through the rest of the development review process.

Small Project Exemption – Small development projects should be exempt from the competitive allocation scoring system, and should be able to get necessary allocation outside of the annual review process. The Committee discussed this at length, and worked through several real and hypothetical examples. The Committee recommends the following be exempt: 1) residential projects of three or fewer lots or dwelling units; 2) non-residential or mixed use (residential and non-residential) projects requiring 1000 gpd or less in either water or wastewater allocation. Given our current low capacity for new allocation, the Select Board should discuss whether a 1000 gpd exemption level would be too high.

Minimum Score – Projects should be required to achieve a minimum score in order to receive allocation. This helps ensure that the Town's limited allocation is used for projects that help further community goals, even in years where there is little or no competition for allocation. The Committee recommends a minimum score of 20 points for projects with residential use (purely residential and mixed residential/non-residential projects), and a lower minimum score of 10 points for purely non-residential projects. The Committee tested the scoring system against several existing developments in order to calibrate a minimum score that is readily achievable. With that said, the Committee encourages the Select Board to discuss this concept and get a legal opinion prior to including it.

Recapture Provision – The Town should be able to recapture allocation that has been granted under certain circumstances. For example: the project is revised such that the necessary allocation increases or decreases by more than 20%; the project is denied by the DRB at a later step of the review process; the project is withdrawn from DRB review process; the project's DRB approvals expire.

Current System Capacity:

Water System

The Town currently owns and operates two water systems – the Lyman Meadow system that serves 89 residential connections, and the primary Hinesburg water system that serves approximately 536 residential and non-residential connections for a total of approximately 830 equivalent residential units (usage expressed in single-family dwelling units, 210 gpd per unit). The water service area is primarily the village and some surrounding areas. Available capacity as of March 2019 is outlined below. Remaining capacity of the primary system is extremely limited based on actual usage, allocated but not yet connected usage, and reserve. For reference, the State design flows require an allocation of approximately 405 gallons per day for a three-bedroom home. As such, remaining capacity for this year would only allow for about seven additional homes. The Town is actively working on developing additional wells to increase the capacity of the system.

- Net Water Capacity: 215 gallons per minute (gpm)
- Water Capacity as gallons per day: 215 x 900 =193,500 gallons per day (gpd)
- Actual Water Use (01/24/2018 through 05/31/2018): 130,316 gpd*
- Remaining Capacity: 63,184 gpd
- Assigned, Unused Allocations (not yet connected) – residential and non-residential: 46,161 gpd
- Reserve (@ 7.2% permitted capacity): 13,932 gpd
- Allocable capacity: 3,091 gpd (1.6% of permitted capacity available)

* Actual water use is substantially less than allocations granted due to inflated State design flows. Once new connections are made, the allocation turns into actual flow, and the differential becomes available again for new allocation.

Wastewater Treatment System

The Town's wastewater treatment system consists of collection piping throughout the village and up Richmond Rd, pump station beside the Fire Station, and a treatment plant located on Lagoon Rd. The system is permitted by the State for a maximum discharge capacity of 250,000 gpd. The system serves approximately 470 residential and non-residential connections for a total of 600+ equivalent residential units. As of June 2018, the system was discharging at 71% of permitted capacity (177,392 gpd). Even though there is remaining capacity, the Town is planning a required upgrade to the treatment facility in order to address new State standards for phosphorous and nitrogen removal. Whether the upgrade will increase treatment capacity is uncertain. Available capacity as of March 2019

is outlined below. For reference, the State design flows require an allocation of approximately 210 gpd for a three-bedroom home. As such, remaining capacity for this year would allow for about 190 equivalent residential units, if there was corresponding water capacity.

- Permitted Wastewater Flow: 250,000 gpd
- Actual Wastewater Flow (05/01/17 through 04/30/18): 177,392 gpd*
- Remaining Capacity: 72,608 gpd
- Assigned, Unused Allocations (not yet connected) – residential and non-residential: 32,657 gpd
- Allocable capacity: 39,951 gpd (16% of permitted capacity available)

* Actual wastewater flow is re-calculated every June, and varies from year to year due to rainfall; as such, allocable capacity is affected both by new connections and by year to year weather. Furthermore, actual wastewater flows are substantially less than allocations granted due to inflated State design flows. Once new connections are made, the allocation turns into actual flow, and the differential becomes available again for new allocation.

Assigned, Unused Allocations as of 4/5/2019

Project	Wastewater (gpd)	Water (gpd)
Blomstrann, Jan (3 SF units on NRG Parcel)	830	1,350
Giroux, Ramona (Commerce Park Lot 15)	200	250
Greenstreet LLC 2 SFR units, 1 Comm unit	780	1,150
Norris, Alan & Nancy 3/18 17 SFR	3,570	6,375
K.B. Real Estate	420	900
Smith, Marie Aube	210	450
South Farm Homes (existing house/barn WW only)	420	
Martins Foods-Hannafords	2,240	2,750
Lawrence and Cynthia Caron 1 SF Units 210 gpd	210	450
Ellen Foster - 1 SFR 1 bedroom Lomeadow	210	150
Giroux, Theresa Rev Trust 7 units & 21 bedroom	1,470	3,150
Foam Brewers	1,170	1,670
Torry Tucker	210	140
Blomstrann - Wind NRG Industrial & Commercial	2,855	3,103
Grabowski - Hinesburg Center Phase 2	5,004	7,452
Black Rock – Haystack Crossing Phase 1A	12,858	16,821
Total	**32,657**	**46,181**

Capacity Needs & Planned Development:

Three large development projects in the service area are currently in the development review process – i.e., Hinesburg Center Phase 2, Haystack Crossing, Blomstrann/Wind Energy Associates. The conceptual master plans for these three projects total over 400 new residential dwelling units and over 200,000 square feet of new non-residential building space. All three have secured limited water and wastewater allocation to pursue first phases, but full buildout isn't possible due to water and wastewater capacity limits – particularly our extremely limited water system capacity.

Additional development potential beyond these three large projects exists throughout the water and wastewater service area; however, it is difficult to project and depends on many variables (e.g., landowner objectives, changes in ownership, economic climate, etc.). With that said, Planning and Zoning staff made some educated guesses of potential development over the next 20 years to support the wastewater treatment facility upgrade analysis. This future estimate included: 125 dwelling units

on the former Quinn property (both sides of Mechanicsville Road); 60 dwelling units throughout the service area (three units per year); 200 new employees and process water/wastewater (new businesses and expansion of existing establishments).

The consultant working on the wastewater treatment facility upgrade (Wayne Elliott of Aldrich & Elliott) took the project build outs and future development estimates, in order to calculate the projected design flow necessary - based on estimated actual water/wastewater flows rather than the inflated State design flow numbers. Once adjusted downward to account for the allocation granted in 2018 for the first phases of the three large development projects, the total projected flow required is 94,800 gallons per day. Based on the remaining capacities listed above, both the water and wastewater systems would need significant capacity increases to accommodate this future development potential: water capacity +90,000 gpd; wastewater capacity +50,000 gpd.

Information from other Municipalities:

The Committee developed a set of questions for municipalities with water/wastewater systems. Each committee member contacted municipalities with systems comparable to Hinesburg by county, based on a list of 183 municipal water systems from the State of Vermont. Committee members reached out to approximately 75 municipalities in Vermont, as well as three in New Hampshire. We received meaningful responses from approximately 30. Nine questions were posed, including information about the size of the system(s), percentage of the municipality connected, type of allocation system/policy, limits on allocation given out per year, use of water conservation programs, fee structure.

The Committee discussed the results at several meetings – August 28, October 9, October 23, 2018. See the minutes of those meetings for details. In nearly every municipality contacted, water and wastewater allocation is given out on a first come, first served basis with no limits on annual allocation beyond the overall system capacity. Many municipalities indicated ample water and wastewater treatment capacity, which may address the lack of allocation priorities or limits. The one exception is the Town of Williston, which has had a residential growth management system in place since 1990. Williston's system is tied to its sewer capacity, which it buys from the Village of Essex Junction where Williston's wastewater is treated. Williston's growth management system is built into chapter 11 of its unified development bylaw (i.e., zoning regulations). Their system accomplishes three basic objectives: 1) sets the sewer capacity for residential development, and apportions it over a 10-year period; 2) limits the amount of residential development that can be approved in any given year; 3) establishes a competitive, point-based residential allocation process to favor developments that best address goals from the Williston Town Plan.

Williston's allocation system is jointly managed by the Select Board and the Development Review Board (DRB). Annually, the Select Board determines how much allocation goes in various broad categories, and then the DRB determines which projects receive allocation for residential development based on a scoring system that is defined in their regulations. This system manages how much residential development can occur over time, and perhaps more importantly, it incentivizes projects to address the community's goals. The Committee reviewed the Williston system in detail, and met with Williston's Director of Planning and Zoning to discuss how it works along with the pros and cons. Interestingly, Williston just approved regulation revisions to make improvements to this system based on their experience with it over the years. In other words, it is a tested and refined system that the Committee felt was a good model for an improved allocation system in Hinesburg. It was noted that the Town of Williston ran into legal challenges when it initially tried to manage growth in the 1990s purely through water/wastewater ordinances. The lesson learned was that incorporating its growth

management system into its land use regulations (administered by their DRB) provided a more workable and legally defensible system.

System Efficiency & Flow Requirements:

Several municipalities reported working on system efficiency on an ongoing basis, some with the help of free leak detection programs or State grant programs - e.g., water leaks, sewer infiltration, etc. For example, Shelburne reported reducing unaccounted water losses from 30% to 7%, and St. Johnsbury similar reductions from 50% to 26%. Hinesburg's Water and Wastewater Superintendent (Erik Bailey) reported that his department has done extensive work on this front (including free leak detection services and operator diligence), resulting in significant improvements with unaccounted water loss currently in the single digits. The Committee briefly discussed but did no analysis of low flow or other efficiency/conservation models to extend capacity and useful life of existing water and sewer infrastructure. It was noted that the current fee structure and State design flow requirements already incentivize developers to use low flow fixtures. New technologies may make further reduce flow requirements, but these are hard to predict. Retrofits to fixtures of existing water and sewer users could be one way to decrease water use, but it's unclear by how much, or what the price tag would be.

The Committee also noted that the allocation flows for each type of use, as dictated by the State of Vermont, greatly exceed actual flows based on analysis of meter data. The State is currently updating its water supply and wastewater rules, but thus far the update doesn't address this known discrepancy. Under the proposed rules, the State would require a typical three-bedroom single-family home be allocated 360 gallons per day (gpd) of municipal water. Andrea Morgante provided assessment of actual water usage versus design flow allocation for several developments. She found that actual water usage was substantially lower than the original allocation based on the State design flows. Based on six quarters of meter data, the average actual water usage for two of our more recent developments was 98 gpd per dwelling unit. These two developments are comprised of three and four bedroom homes, principally detached single family homes with a small number of duplex homes - Farmall Drive neighborhood, 37 dwelling units, completed in 2005; Thistle Hill Drive neighborhood, 55 dwelling units, completed in 2016.

A second issue is simply the difference between water use coming in and wastewater going out. State design flows require 360 gpd of municipal water capacity and only 210 gpd of municipal wastewater capacity. Slightly higher water use is possible given water usage for gardening, lawn irrigation, and vehicle washing. However, such a large difference (71% more water) doesn't make sense, especially given lawn irrigation and vehicle washing are not a factor for eight months of the year in Vermont. Unfortunately, State personnel (Ernie Christianson, Department of Environmental Conservation) made it clear that the Town does not have the ability to modify the State's water and wastewater design flows in order to reflect actual/lower usage. Applicants for State water/wastewater permits must show that the Town system has capacity for the design flows indicated in the State rules.

Fee Structure Comparison:

Comparing water and wastewater fees between municipalities proved difficult because municipalities use a wide variety of systems and measures. As such, Planning & Zoning Department staff surveyed nine other municipalities with water and wastewater systems – six in Chittenden County and three others with systems comparable to Hinesburg. In order to compare apples to apples, costs were summarized for three different development scenarios – a three bedroom single-family home, an office use with eight employees, and a manufacturing use with ten employees and some process water.

Hinesburg's basic usage rates are in the top three or four depending on the scenario – i.e., high, but in line with other higher rate communities like Shelburne, Richmond, and Stowe. On the other hand, Hinesburg's fees for new development (application, allocation, connection fees) are extremely high – nearly two to six times as high as the other communities surveyed. This is largely due to Hinesburg's very high allocation fee – currently $25.40 per gpd for water allocation, and $25.40 per gpd for wastewater allocation. These high allocation fees were instituted in 2016 when the water/wastewater ordinances and fee structure was substantially revised. It is the Committee's understanding that the fee increases were intended to provide additional revenue that would go toward the cost of future upgrades. According to the Town Treasurer, the collection of these fees (application, allocation, holding, connection) has yielded a total of approximately $388,977 from July 1, 2016 through March 31, 2019. The following two tables show cost comparisons are based on rate information research as of December 2018 (detailed cost breakdown available from the Planning & Zoning Department).

User Cost Per Quarter

total cost of water and wastewater usage

Municipality	**Home - 3-bedroom** *360 gpd water, 210 gpd wastewater*	**Office use - 8 employees** *120 gpd (both w/ww)*	**Manufacturing use - 10 employees & process water** *1150 gpd (both w/ww)*
Richmond	$858	$550	$1,251
Shelburne	$470	$217	$2,078
Hinesburg	$461	$293	$1,292
Stowe	$427	$524	$2,316
Essex Town	$356	$161	$1,542
Milton	$325	$192	$1,075
Williston	$299	$148	$1,200
Waterbury Village	$258	$156	$926
Middlebury	$246	$154	$1,103
South Burlington	$231	$101	$964

New Development Cost

total cost - application, allocation, connection fees (excludes annual holding fees)

Municipality	**Home - 3-bedroom** *360 gpd water, 210 gpd wastewater*	**Office use - 8 employees** *120 gpd (both w/ww)*	**Manufacturing use - 10 employees & process water** *1150 gpd (both w/ww)*
Hinesburg	$19,074	$9,768	$67,860
Milton	$9,048	$4,260	$12,815
Williston	$8,594	$3,743	$35,868
Stowe	$8,570	$4,040	$37,000
Essex Town	$6,226	$3,924	$20,435
Shelburne	$5,073	$3,231	$21,740
South Burlington	$3,766	$2,901	$16,961
Waterbury Village	$2,859	$1,449	$11,141
Richmond	$1,665	$780	$7,475
Middlebury	$914	$400	$3,833