



MANCHESTER-BY-THE-SEA

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To: Betsy Ware, Interim Town Planner

From: Chuck Dam, DPW Director

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Subject: Town Water and Sewer Summary Status

Background

The Town is beginning the process of evaluating potential impacts of changes to Town Zoning Bylaws in response to MBTA Zoning legislation – Chapter 40A Section 3A. The following is a basic summary of the existing status of the Town Water and Sewer utilities and future utilization with basic assumptions of growth at build out assuming MBTA zoning is implemented.

Existing Capacity

The Town's water and sewer capacity as discussed in the context of this memorandum is referring to the permitted capacity that we can pump from our sources for drinking water; and treated flow pumped out to our outfall to the ocean for wastewater. For drinking water, we have a registration limit with Massachusetts Department of Environmental Protection (DEP) for an average 720,000 gallons per day (gpd). The 720,000 gpd figure does not include an additional amount of up to 100,000 gpd that is also grandfathered into our registration with DEP. Effectively we could pump up to 820,000 gallons in a given year (113.89% utilized), but for the purposes of this memorandum we will use 720,000 gpd for calculating utilization. For wastewater our NPDES permit (issued by DEP and EPA) contains an allowable discharge as an average of 670,000 gpd. Both of these figures refer to averages over the course of a given year or a 12-month rolling average (i.e. any given day can be higher in gpd terms so long as the 12-month rolling average remains below the registration/permit limit).

For the calendar year 2022 our daily average for water was 635,000 gpd, while 371,000 gpd for wastewater (note that not 100% of the town is on public sewer, nor does all the water going to the sewered portion of town make it to the sewer system). Based on the 2022 calendar year we were approximately 88% and 55% utilized on water and sewer respectively.

It is important to note that these baseline numbers have been decreasing for several years; and are expected to keep decreasing over time regardless of any potential zoning modification as the Town implements additional capital improvements in the water and wastewater distribution, collection, and treatment systems. For example, the Town will continue to invest (as required by permit and best practice) in pipeline renewal projects that will eliminate leakage in the water system and infiltration and inflow into the sewer collection system. Furthermore, we plan to replace the plant water system at the wastewater plant that will reduce both potable water demand and effluent discharge resulting in a decrease of approximately 30,000-50,000 gpd for both water and sewer use.

Future Capacity Discussion

Initial estimates for build out in response to the MBTA zoning requirements could increase the population by up to 1500 additional residents over time. Assuming all of those residents are on Town water and sewer, and assuming a basic figure of 65 gallons per capita per day, the increase in capacity would be approximately 97,500 gpd. This figure combined with our 2022 daily average use would put the Town at approximately 732,500 gpd water and 468,500 wastewater (101.7% and 69.9% utilized respectively). As described above these numbers would be considered conservative assuming no additional improvements implemented within the system. Even then the Town could reasonably accommodate such an increase.

Other Considerations

While not part of the discussion above, there are additional areas of Town that are currently not serviced by the Towns sewer system. DPW has had no serious inquiries by interested parties or discussions at the Town level to extend the sewer to the residential areas, however, if the additional flow was utilized for MBTA zoning within the already served area, less flow would be available for expansion. Refer to the CWMP for additional information on potential flow allocated to these areas (note: these areas are already served by the Towns water system).

One exception that is currently under consideration for expansion is the limited commercial district (LCD) or potential 40B expansion for Town water and sewer. Estimates in the CWMP for the LCD area is 62,000 gpd at build out. Adding 62,000 gpd to the potential zoning above would still remain under our permitted thresholds at approximately 794,500 gpd water and 530,500 wastewater (110.3% and 79.2% utilized respectively). While the water system may appear to be over utilized in this exercise, it is technically not above the 820,000 gpd referenced above. Moreover, it is highly unlikely that any additional development will outpace the reductions seen from the Towns capital improvements projects or other potential efforts to increase conservation within the already served population.

While the discussion above focused on registered/permitted capacity there may be localized areas where the collection system itself becomes over capacity and therefore requires upgrades. This may need further study at a Town level but would need to be considered if substantial development was planned disproportionately in one area (parcel level). At a minimum this would be considered by DPW at the time of such a development. This is a consideration of the sewer system only, less important for the water system which is engineered and operates differently.