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Future water demand for Plymouth Public Water System through 2100

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We discussed predicted future water demand for the Plymouth Public Water System with Kevin Rathbun from Environmental Partners. Kevin Rathbun was one of the lead engineers on the 2019 Plymouth Water Department Water System Master Plan Draft Report.

In the Water System Master Plan, future water demand is estimated through 2040 based on historic water use and projected population growth (blue points in Figure 1). Based on our discussion with Kevin Rathbun, we expect withdrawals to increase to ~25,000 m³/day and then remain relatively constant (green line in Figure 1). Below are the key reasons for this projection:

- Linear projection beyond 2040 (blue line in Figure 1) is not realistic based on estimated population growth.
- Capping withdrawals at 2040 prediction from the Master Plan report (~22,000 m³/day, orange line in Figure 1) is not likely because there will be further development in already developed areas.
 - As of 2018-2019, the Plymouth planning department expects that almost all undeveloped land will remain undeveloped, but currently developed land could be further developed with increased density.
- The Plymouth water system will likely not be greatly expanded beyond areas already served.
 - The West Wind Shore/Big Sandy Pond area, which is densely populated, is currently not part of the public water system, and it is logistically unlikely that this area would be connected to the public water system in the future.
- There is no reason to believe that the DEP would allocate more water to Plymouth from the Buzzards Bay watershed, and Plymouth is currently pumping very close to their permitted limit.

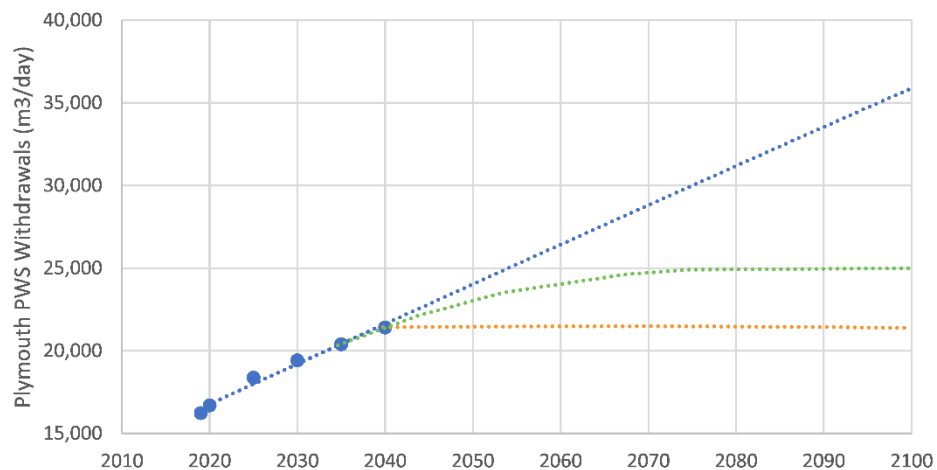


Figure 1: Estimated Plymouth Public Water Supply withdrawals through 2040 from Plymouth Water System Master Plan Draft Report (blue points). Lines show projected withdrawals through 2100, with the most likely projection shown in green.