



THE TOWN OF PLYMOUTH

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Department of Public Health
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Plymouth Department of Public Health Guidelines for Title 5 Local Upgrade Approvals (LUAs)

Effective June 17, 2019

The following Plymouth Department of Public Health (PDPH) guidelines for Title 5 Local Upgrade Approvals (LUAs) provide clear language to protect the public's health and the environment. These guidelines are administratively enforced within the PDPH and pertain to private wastewater systems. It does not deviate nor add a more stringent standard to Title 5, but this aids in making the information clearer for all parties engaged in Title 5 LUAs in the Town of Plymouth. It also aids our engineering and installer community to ensure they are providing their services in line with a standard to continue to assist in the protection of both the public's health and environment as.

There are three key fundamental components that are essential to ensure the PDPH is working with the engineering and installer community to further ensure Title 5 compliant systems when engaged in the LUA process prior to encountering any regulatory challenges that may require a Board of Health (BOH) hearing. [Please click here to access the Massachusetts Department of Environmental Protection Local Upgrade Approval \(LUA\) Form \(Form 9A\)](#) for review and use. All LUA submissions must have this document completed and accompanied with the Title 5 septic permit request. Filers must input the most up-to-date information and pertinent data (e.g. percolation tests, soil logs, water table information, etc.) preferably within the past year and no older than 3 years when submitting the document to the PDPH.

- **Data Collection and Base Plan Preparation** – The most up-to-date data and information must be clearly presented in accordance with Title 5 and other scientific information as appropriate and evaluated by the BOH and PDPH together with the engineering community.
- **Design and Permitting** – The design must meet the prescribed design criteria, as certified by licensed professionals, and it must meet regulatory requirements, which should also be certified by the appropriate licensed professionals.
- **As-built Certification** – This is when the licensed professional certifies the project was constructed in accordance with their design. Accurate base plan information and a sound design do not insure the successful operation of a project if the project is not constructed per the design. This step completely closes the loop in the process by making the entire success of the project the licensed professional's responsibility. This professional knows the design intent best, has the highest level of qualifications and holds proper errors and omissions insurance coverage.

The following is a brief description of how the PDHP applies these three key fundamental components to ensure engineers and installers are compliant with all septic repair jobs involved in the LUA process. The LUA process is clearly detailed here for more clarity as it pertains to the components presented here. The language is concise and more easily understood within these guidelines. References are included to State and current local regulations to support this approach. The same criteria are used to help the BOH evaluate an LUA if it goes before them in a regulatory hearing.

Data Collection and Base Plan Preparation - (15.220 Preparation of Plans and Specifications)

- Perform due diligence
 - o Research and obtain design and as-built plans of record.
 - o Locate wells or drinking water supplies in the area (if present).
 - o Identify current and future septic loads.

- Identify/delineate sensitive resource areas present on or adjacent to the area.
- Assess public sewerage availability.
- Perform soils evaluation and percolation testing
- Prepare base plan for design
 - Perform a field survey locating existing conditions, surface utilities, sensitive resource areas, structures, wells, soil examinations and impervious areas.
 - Prepare an existing conditions base plan that accurately reflects the project area, elevations and sensitive resources.

Design and Permitting

As required by Title 5 (310 CMR 15.000), a Professional Engineer registered in the Commonwealth of Massachusetts must take the following steps:

- Review the existing conditions base plan, water table data, system sizing, topography, (particularly systems placed in fill) to site the system properly to avoid slope breakout of effluent, while specifying appropriate cover over the system components.
- Size the system components to accommodate wastewater loads and soils per Title 5
- Determine if a property line survey is required due to site constraints and/or the size of the system.
- Locate the system to comply (if feasible) with the minimum required setback distances to structures, property lines, sensitive resource areas, wells, and minimum groundwater separation requirements.
- Site the reserve area (new construction).
- Ensure compliance with 310 CMR 15.229-Pumping to Septic Tanks, if pumping is required prior to the septic tank.
- Review design considerations and compliance for septic designs in velocity zones and Floodways.
- Evaluate if the system is within a Title V designated Nitrogen Sensitive Area. If so:
 - Determine if design loading is less than or equal to 440 gpd.
 - If greater than 440 gpd per acre consider approved secondary treatment options suitable for the site to provide enhanced nitrogen removal.
 - Seek first to use an alternative treatment system that has a General Approval from DEP as these are the most tested and trusted types of system.
 - Determine if proposed treatment option provides the required levels of treatment and may qualify for a loading rate of 550 gpd/acre.
 - Specify monitoring and reporting requirements for the system selected.
 - Consider a Facility or Community Aggregation Plan per 310 CMR 15.216.
- Design the system in compliance with 310 CMR 15.255 if construction is within fill. A Massachusetts Registered Professional Engineer shall design a retaining wall and impervious barrier to ensure there is no slope breakout.
- Provide pressure distribution for systems over 2,000 gpd.
- Consider a tight tank only if there is NO other feasible alternative.

Local Upgrade Approval (LUA) and Variances

During the design process, the goal is to provide full compliance with Title 5 and the Town of Plymouth Board of Health Regulations. Where full compliance is not achievable, consider Local Upgrade Approvals (Title 5) and Variances from the Plymouth Board of Health Regulations as follows:

- Ensure the following specifications are maintained when full compliance is not achievable per 310 CMR 15.404-Maximum Feasible Compliance
 - a) Septic tank provides at least 1,000 gallons of storage or 500 gallons for an elevated tank in a velocity zone.
 - b) 4' of naturally occurring material.
 - c) Maximum reduction in size of soil absorption system of 25%.
 - d) Provide a minimum of 100' setback to a surface water and 50' to a private well.
- Design the system in compliance with 310 CMR 15.405-Contents of Local Upgrade Approval. This is the most critical component of a LUA submittal. As required, the approach is to carefully evaluate relief sought per order

of relief listed in 310 CMR 15.405 and summarized below. The evaluation consists of reviewing the first option identified in this section as the most favorable relief, to the last option as the least favorable.

- a) Reduction in system setbacks to property lines
- b) Reduction in other setbacks
- c) Reduction in absorption system size
- d) Relocation of a well
- e) Reduction in setback from Bordering Vegetated Wetlands
- f) Reduction in setback from other resource areas
- g) Reduction in setback from water source structures
- h) Reduction in separation to groundwater per conditions
- i) Use of a sieve analysis
- j) Reduction in separation distance between inlet and outlet tees and high groundwater
- k) Reduction in number of deep holes required
- Lastly, evaluate options if a Local Upgrade Approval does not result in a conforming system per 310 CMR 15.405 (3)
 - a) Groundwater discharge permit
 - b) Tight tank
 - c) Variance from Title 5
 - d) Abandon system

As-built Certification

- Perform an excavation inspection prior to leaching field installation to ensure all deleterious material is removed and the soil absorption system is within the soil layer specified in the design.
- Inspect the system prior to backfilling
 - o Perform a field survey the elevations of system components.
 - o Perform a field survey to determine horizontal location of all system components.
 - o Inspect the distribution outlets to confirm level.
 - o Complete a function check on pumps and alarms from the panel and float system.
 - o Inspect and measure inlet and outlet tees.
 - o Confirm an effluent filter is present.
 - o Remind contractor covers need to be set in accordance with the approved plans.
- Final Grading inspection (for systems constructed in fill)
 - o Complete a finished grading survey of the newly graded slopes.
 - o Review final grading against design plan to confirm compliance.
- Prepare an As-built Plan of the system based on the survey completed above, signed by a
- Professional Engineer, certifying the installation is complete and in compliance with the approved plans. Provide As-built Plan and certification to the Board of Health office or Contractor.

Complex LUAs requiring a variance may go before the BOH for a regulatory hearing. These guidelines are plain language guidelines implemented and administratively enforced by the PDPH to aid parties in the understanding and streamlining of Title 5 LUAs. The intent of this guidance will aid in helping to ensure further compliance with the current Title 5 State and local regulations when engaging in the LUA process for the BOH, PDPH, and the engineering/installer community in the Town of Plymouth.



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