



City of Auburn, Maine

Office of Planning & Permitting

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To: Auburn Planning Board

From: John A. Blais, Deputy Director of Planning & Permitting

Re: FB Environmental Update on the 1 acre to 3 acre lots in the Lake Auburn Watershed with proposed Septic system ordinance change.

Date: August 3, 2022

WORKSHOP: FB Environmental update the planning board on findings of lot size analysis and overall development potential changes.

1) Summarize the proposed ordinance changes that the City of Auburn Planning Board deliberated in May 2022 and 2) Describe the modeling work that was completed which simulated the impact that the proposed ordinances changes will have on land use and development in the watershed and subsequent lake water quality.

New Model Results

Results of the buildout analysis incorporating the 2022 ordinance changes compared to the original baseline buildout analysis are provided in Tables 3 and 4 and shown in Figures 1-3 in the attached updated report. The ordinance changes only impacted the Auburn portion of the watershed, reducing the total buildable area by 955 acres and the number of projected new buildings by 155. However, these results reflect adjustments made to the buildout assumptions that more accurately apply existing ordinances. For example, new development in the Agriculture and Resource Protection zone was removed which accounted for 928 acres of buildable area and 74 projected new buildings. In addition, there were 23 projected new buildings identified within the 300 ft buffer under the original baseline buildout that the ordinance changes conservatively excluded due to the limitations of using the Table 4D soil profiles. Accounting for these adjustments, the ordinance changes directly reduced the total buildable area by 27 acres and the number of projected new buildings by 58. This indicates that the expansion of buildable area with the lifting of the septic system siting restriction (changing from 36" to 12" to limiting factor) was effectively offset by the reduction of buildable area with the rezoning of Rural Residential to Low Density Country Residential (changing from 1-acre to 3-acre minimum lot size).

Results of the watershed-lake model are provided in Table 5 (pg.7 report). The new model run reflecting the 2022 ordinance changes and other adjustments resulted in a predicted total phosphorus load of 937 kg/yr and an in-lake total phosphorus concentration of 9.3 ppb. Compared to the "Business as Usual + LID" model scenario, the ordinance changes and other adjustments reduced the total phosphorus load by 6 kg/yr and the in-lake total phosphorus concentration by 0.1 ppb. Although a small change, the reduction entered a new tier or probability bracket for bloom risk, lowering it slightly from 40% to 30-40% with taste/odor complaints still possible but slightly less likely and filtration waiver violation remaining a low risk. To meet the goal of 900 kg/yr total phosphorus load and 9.0 ppb in-lake total phosphorus concentration in the future at full buildout, additional changes to development strategies that limit total phosphorus export will be needed. While the City of Auburn has taken valuable action to put phosphorus controls in place on new development, the goal cannot be ultimately met without the cooperation of headwater towns to implement similar development strategies controlling phosphorus in the watershed.

Results Staff Note: The 937 kg/yr. was based on a buildout analysis of one acre of disturbed area/new impervious surface. The Low Impact Development (LID) ordinance limits development disturbance area to 15,000 SF and 7,500 SF of impervious area. This approach would limit the development footprint to 22,500 SF or .52 acres. This would help further the limit phosphorus export with new development.

Requirements for New Single Family Lot Development	
Basic SFR Lot Standard	Alternative SFR Lot Standards
Disturbance on an individual lot must be less than 15,000 square feet (including building, driveway, walkways, lawn area, construction access, grading). And, no more than 7,500 square feet of impervious cover is located on the property.	Low Impact Development (LID) practices are used and sized to treat 0.5 inches of runoff from all impervious surfaces on the site, and 0.2 inches of runoff from all disturbed pervious areas of the site (lawn).*
A minimum natural vegetated buffer must be maintained downgradient of all developed area on the lot. This buffer shall be 35 feet deep if naturally forested or 50 feet deep if maintained as a natural meadow.*	The LID practices installed on the site are maintained in perpetuity. If necessary, LID practices may be replaced with new LID practices as long as the overall site treatment standard above is met.
A minimum of 25 percent of the lot area must be maintained as undisturbed natural area.*	
<p>* If the lot or a portion of the lot is located within a watershed of a Lake Most at Risk from New Development, an Urban Impaired Stream, or other impaired or sensitive waterbodies as designated by the municipality for the purposes of this standard, a minimum of:</p> <ul style="list-style-type: none"> • 50 feet if naturally forested buffer, or 75 feet if maintained as meadow must be maintained downgradient of all developed area on the lot, • A minimum of 40% of the lot area must be maintained as undisturbed natural area. <p>If the existing land has been disturbed by prior activities, a natural vegetated buffer and/or undisturbed natural area may be proposed through restoration and revegetation.</p>	<p>* If the lot or a portion of the lot is located within watersheds of Lakes Most at Risk from New Development or other impaired or sensitive waterbodies as designated by the municipality for the purposes of this standard, the project must treat one inch of runoff from impervious surfaces and 0.4 inch from disturbed pervious surfaces.</p>

Staff Recommendation

Staff suggests a Planning Board hold a public hearing and provide positive feedback to the City Council to recommend both the zone change and lifting the septic system siting restriction (changing from 36” to 12” to limiting factor).

1. Change all areas of the Rural Residential zone in the watershed to Low Density Country Residential (LDCR).

The LDCR Dimensional Standards are as follows

Sec. 60-202. Dimensional requirements.

All structures in this district except as noted shall be subject to the following dimensional regulations:

- (1) *Minimum lot area, width and depth.* No lot shall be created and/or no building shall be erected on a lot containing less than three acres and measuring less than 325 feet in width. No lot shall be less than 200 feet in depth. The keeping of horses, mules, cows, goats, sheep, hogs and similar size animals for domestic use of the residents of the lot is permitted provided that the land area required per animal unit forms to the definition of farm, livestock contained in section 60-2.
- (2) *Density.* The density of dwelling units shall not exceed an average of one dwelling per three acres.
- (3) *Yard requirements.*

- a. *Rear.* There shall be behind every building a rear yard having a minimum depth of 50 feet or 25 percent of the average depth of the lot, whichever is less.
 - b. *Side.* There shall be a minimum distance of 15 feet between any building and the side property line plus the side yard setback shall be increased one foot for every five feet or part thereof increase in street frontage over 50 feet to a maximum of 25 feet for side yard setback.
 - c. *Front.* There shall be in front of every building a front yard having a minimum depth of 50 feet or 25 percent of the average depth of the lot whichever is less.
- (4) *Height.* The height of all dwelling structures shall be limited to 2½ stories or 35 feet in height. Accessory buildings and structures may have a maximum height of 65 feet from grade, provided that the front yard, rear yard, and each of the side yards shall be increased by one foot for each foot in height in excess of 35 feet.
- (5) *Off-street parking.* Off-street parking spaces shall be provided in accordance with the requirements for specific uses as set forth in article V of this chapter.
- (Ord. of 9-21-2009, § 3.32C; Ord. No. 11-03012021, §§ 10, 11, 3-15-2021)

2. Updating Sec 60-952 (c) and (f) (1-5) for agricultural buffer strip and subsurface wastewater systems in Division 4- Lake Auburn Watershed; and Sec 60-1066 (1) Phosphorous control for any new building or structure.

Sec. 60-952 (c) *Agricultural buffer strip.* Where land adjoining Lake Auburn or its perennial tributaries is tilled for agricultural purposes, an untilled buffer strip ~~50~~ 100 feet wide shall be retained between the tilled area and the normal high-water mark. This subsection (c) shall not be interpreted as permitting agricultural tillage in any zoning district in which it is not otherwise permitted.

(f) *Private sewage disposal systems.* The following regulations shall be adhered to in the development of private sewage disposal systems in the Lake Auburn Watershed:

(1) ~~Subsurface absorption Disposal~~ areas shall not be permitted on sites on which ~~the highest seasonal groundwater table, bedrock, or other impervious layer~~ is less than 12 inches to the limiting factor. ~~36—12 inches below the bottom of the organic horizon. Not less than 24 inches of suitable soil shall be present below the bottom of the subsurface absorption area. The bottom of such subsurface absorption area shall not be less than 12 inches below the bottom of the organic horizon measured from the lowest point on the subsurface absorption area. In addition, having at least 24 inches of suitable natural soil or fill material below the bottom of the disposal field and (the mineral soil surface) to result in a 36-inch separation between the bottom of the disposal field and the limiting factor.~~

(2) Within areas containing soils described as deep, ~~loose~~ and sandy or gravelly and which contain ~~70 percent sand or gravel outwash or stratified drift~~ as shown on table- ~~4D (profiles 5 or 6 and some 11) of the State of Maine Subsurface Wastewater Disposal Rules 10-144 Chapter 241 9-3 of the state plumbing code, part II (April 25, 1975),~~ no subsurface absorption area shall be installed closer than ~~300~~ 400 feet to the normal high-water mark of any lake, pond, or year-round or intermittent stream. Where the daily sewage flow is or is reasonably likely to be in excess of 2,000 gallons, the system shall be located at least 1,000 feet from the normal high-water mark of any lake, pond or year-round or intermittent stream.

(3) All disposal areas, replacement or new shall meet the section 60-952 (F) (1) design criteria. If replacement systems cannot meet Section 60-952 (F) (1) The local plumbing inspector must evaluate the

design with concurrence from the Auburn Water District to impart as much design criteria to the replacement system.

(4) All private sewage disposal systems shall have a curtain drain installed per section H, 10-144 CMR 34 of the Maine Subsurface Wastewater Disposal Rules or diversion ditch, upslope of a disposal field, for its entire length including fill extensions as determined by groundwater conditions by a Licensed Site Evaluator.

(5) All private sewage disposal systems shall be installed on the lot of the dwelling unit, unless the system can be developed outside the watershed or in under special conditions replacement systems may approve by local plumbing inspector on adjacent lots.

(6)The city water district shall have the right to inspect any system within the Lake Auburn Watershed District during its construction and operation and may notify the health office, police chief, local plumbing inspector or housing inspector who shall require the abatement of such defects or malfunctions.

(7)The local plumbing inspector shall furnish a copy of all site investigation reports in the Lake Auburn Watershed District to the city water district.