Definitive Development Impact Report

Revised: April 9, 2024

(1) Environmental Analysis

The 9.02 +/- acre site is adjacent to Beaver Book that currently contains a single family dwelling. Beaver Brook projects 200' Riverfront Area onto the property. There is also Bordering Vegetated Wetland (BVW) adjacent to Beaver Brook that projects 100' Buffer Zone onto the property. The site has been historically used as a gravel pit and therefore exhibits unnatural topography; there is a ridge along the edge of the BVW across almost the entirety of the rear of the property and a hill near the existing dwelling. The remainder of the site is gently sloping with a natural onsite depression located near the existing ridge.

Vegetative coverage analysis

The area surrounding the existing dwelling contains lawn and landscaped area, with some scattered trees. There is an open area to the rear of the dwelling between the ridge and the hill. The remainder of the site is wooded.

Surface water and groundwater quality and level

The proposed development of 3 single-family dwelling units is subject to the Stormwater Management regulations outlined by the Subdivision Rules and Regulations and the Town of Littleton's Stormwater Management and Erosion Control Bylaw. The Bylaw requires that the project meets Massachusetts Stormwater Standards 1-6. Best management practices proposed at the site an infiltration basin, an infiltration trench, and roof drywells for each of the proposed dwellings. As required by the Stormwater Management Standards, runoff will be treated and 80% of Total Suspended Solids will be removed prior to infiltration. On-site septic systems shall be designed according to Title 5 and local Board of Health Regulations.

Effects upon priority and estimated habitat for rare and endangered species, outstanding botanical features and scenic or historic environs

The area of work is not located within an area of Estimated Habitat of Rare Wildlife as indication on the most recent Estimated Habitat Map dated August 1, 2021. The existing dwelling was constructed in 1880 and is proposed to be razed; it is not feasible to orient the proposed road and lots in such a way as to preserve the existing dwelling while providing the required zoning setbacks.

Capability of soils, vegetative cover and proposed erosion-control efforts to support proposed development

According to the Natural Resources Conservation Service Web Soil Survey, the project site consists entirely of Quonset sandy loam, which is classified as Hydrologic Group A, and Freetown muck, which is classified as Hydrologic Group B/D and is a hydric soil. All proposed work is within the area identified as consisting of Quonset sandy loam. Sand was observed across the proposed work area during soil evaluations.

Hydrologic Group A soils have a high infiltration rate and low runoff potential when thoroughly wet. Hydrologic Group B/D soils have a moderately low runoff potential and moderate infiltration rates, but a high-water table.

Erosion controls including siltation barriers, straw bale check dams, and construction entrances will prevent the indirect alteration of any resource area.

Relationship to the requirements of the Wetlands Protection Act
There is Bordering Vegetated Wetland that projects 100' Buffer Zone onto the property, as well as 200' Riverfront Area associated with Beaver Brook. There is no work proposed within the Buffer Zone or Riverfront Area.

(2) Traffic Study

Taylor Street in Littleton is a two-lane road with a posted speed limit of 35 mph. The proposed road, Strawberry Farm Road, is located 1800'+ south of the Taylor Street intersection with Whitcomb Ave and 2500'+ north of the intersection with Porter Road. This new road will be less than 200' long and consist of a 20'-wide paved road.

Trip Generation, 9th edition, published by the Institute of Transportation Engineers, was used to estimate traffic volumes produced by the proposed development. *Trip Generation* contains models for different land uses which specify the average "Vehicle Trip Ends" per unit of a particular use. For the purposes of this project Land Use Code 210, the "Single-Family Detached Housing," model was used. The tables below summarize the number of vehicle trips estimated according to *Trip Generation*, 9th edition for the 3-lot development at 95 Taylor Street, with the number of units being the independent variable. Only the 2 additional dwelling units created by this development have been used in the calculations.

Table 1: Summary of Daily Trip Generation Data

Day	Average Daily Trip Ends	Percent Entering	Percent Exiting
Weekday	20	50	50
Saturday	20	50	50
Sunday	19	50	50

Table 2: Summary of Peak Hour Trip Generation Data

Time	Average Hourly Trip Ends	Percent Entering	Percent Exiting
A.M. Peak Hour of Generator	2	26	74
P.M. Peak Hour of Generator	3	64	36
Peak Hour Saturday	2	54	46
Peak Hour Sunday	2	53	47

Since the peak hour vehicle trips are less than 10, this project is considered a Minor Project. With a 25-mph speed limit, AASHTO Stopping Sight Distance required is 250'. The sight

distance at the proposed road greatly exceeds 250' in both directions. Given the minor increase in daily and peak hour trips, operational impacts are expected to be minimal.

Sanitary Sewer Study

This project will utilize individual on-site sewage disposal systems. Soil testing has been performed and septic systems will be designed in compliance with Title 5 and local Board of Health Regulations. Three sewage disposal systems are proposed, one for each dwelling unit. Each sewage disposal system has been sized to serve a (5) five-bedroom dwelling. The project will have no impact on any existing public sanitary sewer system as no connection is proposed. The site is located within a Zone II of a public water supply and therefore any on-site sewage disposal system is subject to nitrogen loading limitations. Per 310 CMR 15.215(1), "No facility owner for New Construction in Nitrogen Sensitive Areas designated in 310 CMR 15.214(1)(a) shall install a system designed to receive or allow a system to receive more than 440 gallons of design flow per day per acre except as set forth in 310 CMR 15.202 (use of recirculating sand filters), 310 CMR 15.216 (aggregate flows) or 310 CMR 15.217 (enhanced nitrogen removal)." Please note that for the purposes of 310 CMR 15.000, "acre" refers to a "building acre", or 40,000 s.f.. The maximum potential sewage flow for a parcel subject to a 440 GPD/acre can be determined via the following equation:

$$Lot\ Area\ \times \frac{440\ gallons\ per\ day}{40{,}000\ s.f.} = Maximum\ design\ flow$$

Nitrogen loading calculations for each of the proposed lots are provided in the following table:

Lot	Area (s.f.)	Maximum design flow (GPD)	Maximum bedroom count
Lot 1	88,961	978	8
Lot 2	236,468	2,601	23
Lot 3	51,995	571	5

The values provided here assume that no enhanced nitrogen removal is incorporated into the design of systems serving the proposed building lots. If enhanced nitrogen removal were proposed, the maximum design flows could be increased.

Water Study

There is an existing hydrant in front of 99 Taylor Street, and the Town of Littleton Water Department has confirmed the existence of a 6" Cast Iron water main. The Water Department has indicated that a hydrant will not be required for this project; three individual water services are proposed to be tapped into off the existing water main in Taylor Street and routed to the proposed dwelling units within the proposed right of way.

Public Works cost

The road is proposed to remain a private way, therefore there will be no additional cost to Public Works for the maintenance of the proposed roadway.

Municipal service costs
The total proposed town budget for 2024 is $57,406,988. Subtracting school costs, the net budget is then $32,192,134 (the School Department budget in 2024 is $25,214,854). With a population of 10,000 for Littleton, the cost per resident is $3,220.

According to the Massachusetts Department of Elementary and Secondary Education, the 2022 Total Pupil FTEs (full-time equivalent) in Littleton was 1,760.3. The total school funds were $32,242,689. The cost per pupil is $18,317 per annum.

The estimated number of school children (K-12) per single family dwelling is 1.4. The development will consist of 2 additional dwellings (1 existing dwelling onsite), meaning an average of 2.8 (rounded up to 3) children. The addition of 3 children to the town from this subdivision would cost $54,951. The fee is unlikely to occur per year because a small addition of students doesn't increase the cost dramatically to the school system. This cost considers expansion of schools which would not occur due to the addition of 3 schoolchildren and thus would be based on an average over many years when schools are expanded.

According to the Assessor's website, the average single-family residential property assessment for 2024 is $672,106. Residential taxes for Littleton are $16.25 per $1,000 of assessed valuation. Therefore, the anticipated revenue generated from taxes the Town will collect from the additional dwelling units is estimated to be $21,843.44