September 10, 2021

MEMORANDUM

FORMAL RECOMMENDATION #2
MEETING OF 09-10-21

To: Conservation Commission/Inland Wetlands and Watercourses Agency

From: Tom Mocko, Environmental Planner

Re: Formal **recommendation to the Town Plan & Zoning Commission** concerning Kristina O'Leary's proposed **1-lot O'Leary Subdivision at 1335 Main Street** – creation of a **33,069 square foot new lot #2** – Residence AA Zone and Groundwater Protection (overlay) Zone 1 – Megson, Heagle & Friend, C.E. & L.S., LLC

LOCATION: Refer to the location map on the cover sheet of the set of plans within your packet.

PROPOSAL: To simply carve out a new frontage lot (33,069 square feet lot and zoning requires a 25,000 square foot minimum) with this 2-lot subdivision proposal; a rear lot (#1327 Main Street and currently vacant) was created in 2018, which will share a common driveway with the newly proposed frontage lot. The new lot is to be served by public MDC water supply and its own subsurface sewage disposal system.

REVIEW: Within your packet is a set of plans. The submitted drainage report follows this memorandum.

This proposed lot generally slopes to the south (at 8%) and to the west (at 10%). A small portion of the eastern side drains easterly across a steeper slope within the right-of-way of Main Street.

The lot's soils are predominantly mapped as the well-drained Agawam fine sandy loam, a terrace soil underlain with deep, saturated coarse-grained sand and gravel deposits. The soils are good for a septic system; a favorable memorandum from the Health Department will either follow this memorandum or be emailed to you prior to the meeting.

There are not any wetlands or upland review areas involved with this project.

The submitted soil erosion and sediment control plan and details adequately address the limited erosion potential of this, rather small, new building lot. The site's slopes and soils do not pose any extraordinary threat with regard to soil movement.

Water quality mitigation is proposed; an infiltration structure will facilitate the roof runoff and stone infiltration structures will handle the common driveway's runoff. The Engineering Department's comments to date are minor and will require minimal revisions to the plans. The Engineering Department's memorandum will be provided once it is available prior to the meeting.

Mature trees exist on the site as indicated on the topographic plan (sheet 3). Most trees will be removed for the driveway, house and septic system. A few big trees (an oak and two beeches) should be able to remain and if so, then they will count as the required street trees.

The small site is being marked-up will flagging in order for any visitor to identify where the house, driveway and primary septic leaching area are to be located.

TM:gfm

DRAFT RECOMMENDATION TO THE TOWN PLAN & ZONING COMMISSION

MOVED, that the Conservation Commission recommends to the Town Plan & Zoning Commission subdivision approval of Kristina O'Leary's proposed 2-lot O'Leary Subdivision at 1335 Main Street, in accordance with plans on file in the Office of Community Development, and in compliance with the following conditions:

1. Adherence to the Town Engineer's memorandum dated September xx, 2021.

2. Adherence to the Health Department's memorandum dated September xx, 2021.

3. The plot plan required for building permit application shall contain and comply with these conditions of approval. If construction including limits of clearing is proposed in areas other than the indicated locations on these plans, the Office of Community Development shall be notified and the Office of Community Development and the Chairman of the Town Plan and Zoning Commission are hereby authorized to approve or deny the alternative. Each plot plan shall indicate the limits of vegetative clearing, existing and proposed contours, soil erosion and sediment controls, all subsurface drainage, all stockpile areas, and temporary and permanent vegetative stabilization measures, including details of seedbed preparation, seed mix selection, application rates, seeding dates and mulching requirements. Vegetative clearing for stockpiling shall be minimized and subject to the approval of the Environmental Planner.

4. Healthy mature trees shall be preserved and saved when possible. Said trees shall be protected with the use of high visibility construction fence during construction or otherwise protected as required by staff.

5. Installation of soil erosion and sedimentation control and stabilization measures shall be the Permittee's responsibility. Once installed these measures shall then be inspected by the Environmental Planner prior to land disturbance activities. Afterwards it then shall be the Permittee's responsibility to inspect these control measures during, and immediately following, substantial storm events and maintain and/or replace the control measures, when needed, on a regular basis until the site is vegetatively stabilized. Hay bales shall be replaced every 60 days. The Environmental Planner is hereby authorized to require additional soil erosion and sediment controls and stabilization measures to address situations that arise on the site.

6. Tree stumps and blasted rock material shall not be buried at the site.

7. Metal waste containers shall be provided at the site to facilitate the collection of refuse material generated from construction activities. Such material shall not be buried or burned at the site.

8. Underground fuel storage tanks shall be prohibited to reduce the potential of contamination to wetlands, watercourses, and groundwater resources.

9. Prior to the issuance of a Certificate of Occupancy, certification from a professional engineer shall be required confirming that the stormwater management system was constructed in conformance with the approved design.

10. A note shall be added to the plans that two street trees shall either: remain along the new lot's frontage; or be planted to satisfy the subdivision regulations' requirement. At least three suitable native shade tree species shall be added to the plans.

MEGSON, HEAGLE & FRIEND
CIVIL ENGINEERS & LAND SURVEYORS, LLC
81 RANKIN ROAD
GLASTONBURY, CONNECTICUT 06033
PHONE (860) 659-0587
FAX (860) 657-4429

June 1, 2021

Mr. Steve Braun, PE
Assistant Town Engineer
Glastonbury Town Hall
2155 Main Street
PO Box 6523
Glastonbury, CT 06033

Re: Stormwater Management, Infiltration
& Nitrogen Loading Report
O'Leary Subdivision
1335 Main Street
Glastonbury, CT

Dear Steve;

The purpose of this letter report is to summarize the calculations performed to substantiate the design of the water quality measures incorporated into the plans as well as demonstrating compliance with the Town of Glastonbury's MS4 Permit. The calculations also demonstrate compliance with the nitrogen loading requirements of Section 20.13.1 and maintenance of water infiltration potential requirements of Section 20.13.3 of the Glastonbury Building Zone Regulations.

In general, the project is a proposed two lot residential subdivision situated on 2.605 acres of land with frontage on Main Street. The land falls in both Residence AA and GW-1 zones. An existing residential house is located on the property which is proposed to remain.

The main goals of the design of the stormwater management measures are to avoid stormwater quality impacts to surrounding properties, water resources and municipal drainage facilities. Fortunately, the project has a very limited scope. The fact the project is limited to a single new residential house with a relatively short drive makes any potential drainage impacts manageable to resolve. Avoiding stormwater impacts are primarily achieved by directing storm runoff from the paved driveway into infiltration trenches and roofs to underground recharge units.

WQV CALCULATIONS

- The Total WQV for the area directed to Infiltration Trenches 1 & 2 is calculated as follows:

  WGV = (1")(R)(A)/12 Where: R = 0.05 + 0.009(I)
  I = % Impervious Cover
  A = Area in Acres

  A = 0.20 AC = 8,650 SF

  Impervious area = 1,920 SF

  I = 1,920/8,650 = 22.2%

  R = 0.05 + 0.009(22.2) = 0.25

  WQV = (1")(0.25)(0.20)/12 = 0.004 ac-ft = **174 CF**

Each infiltration trench is 25'x3'x3'= 225 CF x 2=450 CF x .4 voids = **180 CF total**

- The Total WQV for the area draining to Infiltration Trench 3 is calculated as follows:

  WGV = (1")(R)(A)/12 Where: R = 0.05 + 0.009(I)
  I = % Impervious Cover
  A = Area in Acres

  A = 0.18 AC = 8,000 SF

  Impervious area = 3,280 SF

  I = 3,280/8,000 = 41.0 %

  R = 0.05 + 0.009(41.0) = 0.42

  WQV = (1")(0.42)(0.18)/12 = 0.006 ac-ft = **261 CF**

Infiltration Trench is 75'x3'x3'= 675 CF x .4 voids = **270 CF total**

NITROGEN LOADING CALCULATIONS

TOTAL PARCEL AREA: 113,459 SF = 2.605 AC.

IMPERVIOUS SURFACES

ROOF AREA = 9,900 SF

PAVEMENT = 9,000 SF

PERVIOUS SURFACES

LAWN AREA = 68,750 SF (Includes existing and proposed lawn areas that may be fertilized. Does not include field areas)

NATURAL AREA = 94,559 SF

CONNECTICUT RAINFALL = 44 IN./YR

LOADING FACTORS:

CAPE COD TECH BULLETIN 91-001

ROOFS – 0.75 mg/L

DRIVES – 1.5 mg/L

LAWNS – 3 LBS / 1000 SF @ 30 % LEACHING

NATURAL AREA INFILTRATION – 30%

ESTIMATED LOADING

WASTEWATER:
2 Dwellings x 5 people/Dwelling x 75 GPD x 3.785 L/Gal
= 2,838 L/D X 24 mg/L = 68,130 mg/D

ROOF AREA:
9,900 SF X 44 IN/YR X 1 FT/12 IN X 1 YR/365 D X 28.32 L/CF
= 2,816 L/D X 0.75 mg/L = 2,112 mg/D

PAVED AREA:
9,000 SF X 44 IN/YR X 1 FT/12 IN X 1 YR/365 D X 28.32 L/CF
= 2,560 L/D X 1.5 mg/L = 3,841 mg/D

LAWN:
68,750 SF X 3 LBS/1000 SF/YR X 1 YR/365 D X 454,000 mg/LB X 0.3
= 76,962 mg/D

NATURAL AREA:
94,559 SF X 44 IN/YR X 1 FT/12 IN X 1 YR/365 D X 28.32 L/CF X 0.3
= 8,070 L/D

SUMMARY:
CONCENTRATION/DILUTION

ROOF AREA	+	PAVED AREA	+	LAWNS	+	WASTEWATER
2,112 mg/D		3,841 mg/D		76,962 mg/D		68,130 mg/D
2,816 L/D		8,070 L/D		2,560 L/D		2,838 mg/D
ROOF AREA	+	NATURAL AREA	+	PAVED AREA	+	WASTEWATER

= (151,045 mg/D) / (16,284 L/D) = **9.28** mg/L

THIS SITE IS LOCATED IN A GW-1 ZONE

NITROGEN LOADING OF **9.28** mg/L IS WITHIN THE ACCEPTABLE RANGE OF SECTION 20.13.1 OF THE GROUNDWATER PROTECTION REGULATIONS.

REDUCTION OF WATER INFILTRATION CALCULATIONS

PRE DEVELOPMENT

- TOTAL AREA = 113,459 SF
- IMPERVIOUS AREA = 9,200 SF
- ROOF AREA INTO INFILTRATION = 0 SF
- LAWN/VEGETATED AREAS = 104,259 SF

WEIGHTED COEFFICIENT OF IMPERVIOUSNESS

$$\frac{(.9)(9{,}200\ SF) + (.3)(104{,}259\ SF)}{113{,}459\ SF} = 0.35$$

POST DEVELOPMENT

- TOTAL AREA = 113,459 SF
- IMPERVIOUS AREA = 18,900 SF
- ROOF AREA INTO INFILTRATION = 4,500 SF
- PAVED AREAS INTO INFILTRATION = 5,200 SF
- LAWN/VEGETATED AREAS = 94,559 SF

WEIGHTED COEFFICIENT OF IMPERVIOUSNESS

$$\frac{(.9)(9{,}200\ SF) + (.3)(94{,}559\ SF)}{113{,}459\ SF} = 0.32$$

AN 8.6% GAIN OF INFILTRATION POTENTIAL WILL OCCUR AS A RESULT OF THIS SUBDIVISION – A 50% LOSS IS ALLOWED

In summary, the incorporation of the above stormwater management practices will mitigate stormwater quality impacts from the proposed subdivision. The Water Quality Volume will be retained and infiltrated and infiltration potential will be increased by 8.6%.

If you have any question, please feel free to call.

Sincerely,

Mark W. Friend, P.E. Soil Scientist
LEED AP, Principal

September 14, 2021

MEMORANDUM

To: Thomas Mocko, Environmental Planner
Conservation Commission

From: Stephen M. Braun, P.E., Assistant Town Engineer

Re: O'Leary Subdivision
1335 Main Street

The Engineering Division has reviewed the plans for the proposed O'Leary 2-Lot Subdivision located at 1335 Main Street prepared by Megson Heagle and Friend, Civil Engineers and Land Surveyors LLC dated August 24, 2021 and the Stormwater Manangement Report dated June 1, 2021 and offers the following comments:

1. The Stormwater Management Report provided by the applicant indicates that the proposed storm drainage system and storm water quality features are consistent with Town standards for stormwater management. The computations for the water quality volume associated with the roof infiltration system are shown on the plans but should also be added to the drainage report.

2. The MS4 tracking table on Sheet 3 should be revised to reflect Pre and Post Development Directly Connected Impervious Area (DCIA) of 0.09 acres. Existing impervious areas are considered DCIA unless the appropriate portion of the water quality volume is retained on site.

3. A sidewalk cut and repair should be shown on Sheet 3 for the proposed water service.

4. The impervious cover tracking table on Sheet 4 should be eliminated.

5. The Town sidewalk detail on Sheet 5 should be replaced with the current Town standard detail.

Town of Glastonbury
Health Department

Health Dept's

MEMORANDUM

Date: September 13, 2021

To: Town Planning & Zoning, Conservation & WPCA Commissions

From: Don Kendrick, R.S., Sanitarian (DK)

Re: Kristina O'Leary Subdivision, 1335 Main Street

The Department has been involved in the investigation of this property since the fall of 2017. Deep hole test pits were observed in October 2017, October 2019 and January 2021. Percolation tests were conducted in October 2017 and October 2019. The soil in the area is primarily described as Agawam fine sandy loam with 8 percent to 15 percent slopes. Haven and Enfield soils with 3 percent to 8 percent slopes make up the remainder of the soil in the area. Indicators of seasonal high groundwater were detected only in deep hole test pit Y at 54" below the surface on lot 2. Areas suitable for on-site sewage disposal were identified and are shown on plans prepared August 24, 2021 by Megson, Heagle & Friend Civil Engineers and Land Surveyors, LLC.

The Department recommends approval of this proposal using on-site sewage disposal with water supplied by a public water system with the following requirements:

1. All sewage disposal systems are to be designed by a professional engineer licensed in the State of Connecticut.

2. Leach fields will be permitted only in the locations shown on the approved subdivision plan.

3. Sanitary "as-built" drawings are to be submitted to the Health Department prior to the issuance of a Certificate of Occupancy.

Revised 9-22-17