PETITION FOR TEXT AMENDMENT, MAP TEXT AMENDMENT, SUBDIVISION APPROVAL, AND SITE PLAN APPROVAL OF SADDLE RIDGE DEVELOPERS FOR PROPERTY LOCATED AT SPORT HILL ROAD, SILVER HILL ROAD, CEDAR HILL ROAD, AND WESTPORT ROAD (ROUTE 136)

Applicant's Supplemental Materials
December 12, 2016

Edward A. Hart, P.E.
tedh@miloneandmacbroom.com
William A. Root, M.E.S.
David G. Sullivan, P.E.
Milone & MacBroom, Inc.
99 Realty Drive
Cheshire, CT 06410
PHONE: (203) 271-1773

Jennifer Beno
sses@yahoo.com
Soil Science and Environmental Services, Inc.
545 Highland Avenue
Cheshire, CT 06410
PHONE: (203) 272-7837

Matthew Ranelli
mranelli@goodwin.com
Shipman & Goodwin LLP
One Constitution Plaza
Hartford, CT 06103-1919
PHONE: (860) 251-5748

TABLE OF CONTENTS
December 12, 2016

SHIPMAN & GOODWIN LLP®
COUNSELORS AT LAW

Matthew Ranelli
Phone: (860) 251-5748
Fax: (860) 251-5318
mranelli@goodwin.com

December 12, 2016

Mr. Robert Maquat, Chair,
and Commission Members
Planning and Zoning Commission
Town of Easton
225 Center Road
P. O. Box 61
Easton, CT 06612

Re: Supplemental Materials; Petition for Text Amendment, Map Text Amendment, Subdivision Approval, and Site Plan Approval of Saddle Ridge Developers for Property Located at Sport Hill Road, Silver Hill Road, Cedar Hill Road, and Westport Road (Route 136)

Dear Chairman Maquat and Commission Members:

On behalf of Saddle Ridge Developers, LLC ("Saddle Ridge"), I am pleased to provide this letter and the attached documents in response to comments on the above-referenced application received through December 8, 2016 as requested by the Commission at the public hearing on the above application on November 28, 2016.

2014 Application And Commission Denial

As noted during the November 28, 2016 public hearing, the 2014 proposed Easton Crossing plan was prepared and filed as a result of a court-assisted mediation to attempt to resolve pending litigation stemming from the Commission's earlier denial of Saddle Ridge's proposed 105 and 99 unit home development applications. As a result of a full discussion of the Commission's concerns and reasons for denial associated with the prior plans, Saddle Ridge prepared a new plan to address the Commission's concerns, including: (1) reduction of density and minimum one acre lot size; (2) elimination of multi-family housing in favor of Commission preferred single-family homes with affordable accessory apartments; (3) elimination of public

water main extension; (4) no new wetland disturbance; (5) 42.5 acres of open space (over 30 percent of the site); (6) fully protective stormwater management system with no increase in peak runoff rate and capable of conveying and treating up to a 100 year storm well in excess of the Town's requirements; (7) over 300 soil tests on the site to confirm the adequacy of the soils; and (8) over 50 percent reduction in the number of septic systems – all while fully protecting the public water supply watershed. In 2014, Saddle Ridge delivered a plan as promised that addressed the Commission's concerns.

The Commission's consultant, GHD Inc. (who also reviewed the earlier 99 unit plan), thoroughly reviewed the 2014 48 lot plans. GHD agreed with Saddle Ridge that the "the 1 dwelling unit per 2 acre" general recommendation was dated and that conditions have changed and development techniques improved. GHD noted that the standard had been deleted from the State Plan of Conservation and Development ("POCD") and "was based upon documentation of watershed development that did not likely including any substantial design measures for stormwater quantity control and stormwater quality treatment, and that septic system design standards at the time were not as advanced as they are under the current code standards of the Department of Public Health." GHD then summarized the "current advanced standards" included in Saddle Ridge's plans and concluded that Saddle Ridge's plan offered superior protection compared to the one unit per two acre standard. Specifically, "[i]t is GHD's professional opinion that . . . the current proposed development provide[s] water quality and environmental protection enhancements beyond the watershed development characteristics that previously formed the basis of the 1 dwelling unit per 2 acre development density criteria." (Emphasis added.) In its final recommendation to the Commission, GHD concluded that the plan, with GHD's recommendations "will not result in foreseeable adverse impacts to public health, safety, wetlands, watercourses and the environment" and would "provide increased stormwater treatment capacity and performance as compared to the dry detention basins previously approved by the Town for the Applicant's 21 lot subdivision on the property." *See* GHD November 20, 2014 Report, Tab 1.

The Commission accepted GHD's conclusions and ultimately made a finding of fact that the plan satisfied the PZC's concerns from the prior applications; however, it did not approve the 2014 application. Very late in the public hearing process in 2014, opponents of affordable housing applications solicited input from Michael Santoro, a housing specialist at the Department of Economic and Community Development ("DECD"), who offered his opinion that the accessory apartments, while affordable, did not comply with § 8-30g because they were smaller than the market-rate homes to which they were attached. Although Mr. Santoro had previously met with the developers and was careful to make clear that he was not offering an official DECD opinion, the Commission denied Saddle Ridge's application based on his comments.

In its denial resolution, the Commission referenced Mr. Santoro's concern regarding the smaller size of the affordable accessory apartments As noted above, the Commission made a finding of fact that the 2014 plan had addressed the Commission's concerns "regarding

substantial public health and safety issues that were evident in the earlier applications by this applicant for this property." The Commission provided a clear road map to address its concerns about the unit sizes. Saddle Ridge has followed that road map and resubmitted essentially the same plan, except the accessory apartments are replaced with evenly sized duplex units. This common sense change addresses the sole concern from the 2014 denial and, as result, the Commission should approve this application with reasonable conditions.

Letter From The State Department of Public Health With Recommended Conditions Of Approval

As required by law, Saddle Ridge notified the State Department of Public Health ("DPH") of its 2016 application. The DPH reviewed the application and provided comments by letter dated November 28, 2016. The DPH concurred that the current plan is essentially the same as the 2014 plan and attached their comments from 2014 recommending conditions of approval. The DPH letter contains four recommended conditions of approval: The conditions require that (1) if the Town is not going to own the stormwater systems, a condition should be included requiring proper operations and maintenance; (2) inspection and pumping of the septic system every three to five years; (3) the open space should be protected against future development and impervious surfaces should remain less than ten percent; and (4) DPH's recommended construction best management practices should be followed. Saddle Ridge has already planned for each of the recommended conditions of approval requested by DPH and consents to each as a condition of approval.

Letter From Aquarion Repeats Comments From 2014 And Ignores Changes To POCD And Current Development Techniques

Aquarion's November 15, 2016 letter (1) fails to account for changes in the State POCD that deleted the general recommendation of one unit per two acres; (2) fails to allege a harm that will result from the proposed project; (3) fails to account for protective measures that the Commission's own consultant concluded would provide superior protection of the watershed; and (4) relies on outdated information and recommendations. In addition to the Commission and its consultants being satisfied in 2014, the November 28, 2016 DPH letter is satisfied that the proposed development could be approved with the requested conditions.

In 2014, the Commission's consultant, GHD, specifically agreed that the general density recommendation insisted upon by Mr. Roach of Aquarion does not reflect modern stormwater, septic, and construction practices. GHD correctly concluded that the one unit per two acre recommendation "was based upon documentation of watershed development that did not likely including any substantial design measures for stormwater quantity control and stormwater quality treatment, and that septic system design standards at the time were not as advances as they are under the current code standards of the Department of Public Health." GHD then

concluded that Saddle Ridge's plan offered superior protection compared to the one unit two acre standard. Saddle Ridge's current plan is essentially identical to the 2014 plan but with two fewer units, fewer bedrooms, and less impervious coverage. In 2014, the Commission accepted GHD's final conclusion that the plan will not adversely public health, safety, wetlands, watercourses, and the environment, but denied Saddle Ridge's application for other reasons.

Aquarion's current letter goes on to state the same concerns it raised in 2014 but still fails to identify or even allege a harm if the proposed plan is constructed. The letter states only that the proposal is "inappropriate within this public drinking water supply watershed area." Like Mr. Roach's 2014 letter, the current letter fails to note that the Superior Court's decision in *Eureka V LLC v. Ridgefield Planning and Zoning Commission*, was overturned in part by the Appellate Court and remanded to the local commission with instruction to allow development on the watershed portion of the land at a density to be determined in further proceedings based on site conditions. Mr. Roach fails to address the other factual distinctions between the two proposals or to identify any specific harm that will result from Saddle Ridge's plan. Aquarion's letter also fails to acknowledge that the State POCD (cited in the Superior Court's decision) was revised in 2013 to delete the general recommendation to limit developments to one unit per two acres on watershed lands and instead add a recommendation for impervious coverage less than 10 percent of the overall area to be developed. Although the POCD applies only to state-funded projects, Saddle Ridge nonetheless satisfies the new recommendation. The DPH also reviewed Saddle Ridge's plan and did not note any inconsistency with the State POCD but rather offered suggested conditions of approval in the event the Commission chooses to approve the application.

Finally, Saddle Ridge objects to Aquarion's testimony by letter and its failure to attend a public hearing so that Saddle Ridge may ask questions regarding the content of its letter. It is fundamentally unfair for Aquarion to make broad statements and attempt to restrict the use of private property without providing the applicant an opportunity to question it regarding the content of its statements.

Health Code Compliant Private Drinking Wells
Eliminate Extension Of The Water Supply Main

As a result of the Commission's concerns about extending the public water supply (and based on the reduction in density), Saddle Ridge's 2014 and 2016 plans eliminate the proposed extension of the public water line to the site and utilized individual private wells instead. The proposed plan shows the private wells located on each lot in accordance with the separation distances required by the Public Health Code and there is ample water supply to serve each well. In 2014, Saddle Ridge reviewed the well drilling logs from the surrounding area and the site geology to confirm that adequate water supply exists for the wells and the lack of impact to any existing wells. Tab 2. Again, the Commission's consultant, GHD, fully reviewed the report before providing its conclusions.

Health Code Complaint Septic Systems Improve Water Quality

All of the 48 proposed septic systems comply with the Public Health Code requirements. Saddle Ridge has conducted over 300 soil tests on the site to confirm the adequacy of the soils. In its prior application, Saddle Ridge proposed over 100 septic systems which were all fully designed and reviewed by the state DPH at the request of the Easton Town Sanitarian and recommended for approval as health code compliant. Again, the proposed 2016 plan is the same as in 2014, but with two fewer units, fewer bedrooms, and less impervious surfaces. The use of health code complaint septic systems is consistent with sewage disposal in other areas of Easton with one acre zoning and represents a water quality improvement over existing use of the site.

In addition, although Easton does not require septic system pump outs of other residents or new developments even if located in the watershed, Saddle Ridge has agreed to a condition of approval that requires septic inspections and pump outs as needed every three to five years as recommended by the DPH.

Stormwater Management System Meets And Exceeds Town And State Standards

The Commission and its consultant, GHD, have already reviewed and been satisfied that this stormwater management plan is protective of the watershed, exceeds Town standards, and complies with the Department of Energy and Environmental Protection ("DEEP") 2004 Stormwater Manual. The Commission's consultant, GHD, reviewed the plans and found that the stormwater plan (1) was more protective of the watershed than the one unit per two acre standard; and (2) was more protective than the plan this Commission approved for the 21 lot subdivision.

Saddle Ridge has gone well beyond what the Commission requires of other developments in Easton. For example, even though not required by the Commission's regulations or Town requirements, the Commission's consultant requested that Saddle Ridge upgrade the drainage pipes that connect various parts of the system to the stormwater basins. He requested that the pipes be adequate to convey a 100 year storm even though the regulations require other developers to provide only for the 10 year storm. Saddle Ridge complied with this request.

Impervious Coverage Well Below 10 Percent

The total impervious coverage on the proposed site plan is just over seven percent and a significant portion of that seven percent coverage is in areas, such as roof tops, that are fully infiltrated and thus do not result in runoff or the associated concerns related to impervious coverage. Again, the Commission's zoning regulations do not impose any maximum impervious standard on other residential developments in town. Notwithstanding, Saddle Ridge is willing as

a condition of approval go beyond what is required by the Commission's existing regulations for impervious coverage and agree to the DPH condition for a mechanism to prevent the project site from exceeding 10 percent impervious surface.

The Proposed Density Is Consistent With The State And Local Plans of Conservation and Development

Saddle Ridge's proposed density is a significant reduction from the 99 unit plans and, as with Saddle Ridge's prior plans, fully protective of the public water supply watershed. There is simply no regulatory requirement in the state or local POCD that limits the density of development in public water supply watersheds to one unit per two acres. At the time of the prior applications, the State POCD contained a general recommendation that developments be limited to one home per two acres. However, the State POCD does not apply to private projects which do not receive state funding, such as Saddle Ridge's, as per General Statutes § 16a-31. The State POCD itself (p. 4) makes this perfectly clear by noting that the "Plan is advisory to municipalities, due to the fact that there is no statutory requirement for municipal plans, regulations, or land use decisions to be consistent with it." More importantly, the state revised the POCD in 2013 and deleted the general density recommendation. The revised State POCD still only applies to state-funded projects and instead recommends (p. 24) that impervious coverage be minimized to 10 percent or less "of the overall area to be developed and which preserves the most amount of land in a natural or undisturbed state." Saddle Ridge provides an impervious surface of around seven percent, well below ten percent and creates over 42 acres of open space – much more than is required for a traditional subdivision.[1]

Easton's own POCD (also an advisory document) recommends a density of one unit per two acres or up to "six bedrooms for every two acres of upland soil." The 110 acre site contains 83 acres of upland area and would yield 249 bedrooms (57 more than proposed under the 2016 plan). Moreover, general density guidance such as the POCD and DEEP Bulletin 11 were not intended to be applied on a lot-by-lot basis but rather are used as planning tools for landscape or watershed scale planning. The DPH has reviewed the watersheds at issue here and has concluded they are very well protected. Tab 11. In fact, the amount of permanently preserved open space land in Easton alone is 7,040 acres including approximately 5,520 acres of BHC land or just over 38 percent of the Town. POCD at 29-30.

[1] Saddle Ridge also supports other elements of the State POCD (and Easton's own POCD) including the Growth Management Principle #2 – "expand housing opportunities and design choices to accommodate a variety of household types and needs."

One acre zoning already exists in this watershed in Easton and in the surrounding towns. Easton itself has over 160 acres zoned for one acre lots on private septic within the public water supply watershed and in much closer proximity to the Easton Reservoir then Saddle Ridge. Tab 9. The surrounding towns also have one acre zoning within the watershed. *Id.*

Finally, the Commission's consultant, GHD, agreed with Saddle Ridge's experts that the one unit per two acres recommendation, in addition to being removed from the POCD, was not based on current design standards for stormwater or septic. GHD correctly concluded that Saddle Ridge's plans contained current and advanced standards and (1) would not result in harm to the watershed; (2) provided better protection to the watershed than the old one unit per two acre standard; and (3) provided better protection than the 21 lot subdivision the Commission previously approved on this site (which system was fully reviewed by the Commission's new / current consultant Land Tech). Tab 1.

Saddle Ridge has followed the road map provided by the Commission and provided a high quality attractive proposal with much needed affordable housing while maintaining impervious coverage at less than 10 percent and providing over 42 acres of open space.

The Need For Affordable Homes And The Easton POCD

Saddle Ridge has proposed new regulations to allow for its proposed development. The new regulations are warranted because the Commission's current regulations do not provide meaningful opportunities for affordable housing. The Commission itself has recognized the limitations of the existing zoning regulations with regard to affordable accessory apartments noting that they are unworkable and may tend to discourage new affordable accessory apartments. As noted in our application materials, Easton has an acute need for affordable housing. Home prices in Easton are out of reach for professionals who earn less than the statewide median income. Tab 10.

Saddle Ridge has not applied to amend Easton's POCD here. However, as noted above, the proposed plan is consistent with the POCD and if the Commission approves this application, it may choose to amend its POCD to add the new district designation if it chooses to do so.

The Affordability Plan

As requested by the Commission, Saddle Ridge met with Mr. Santoro of DECD to confirm that his concern has been addressed and that the application otherwise is consistent with § 8-30g of the General Statutes. Although Mr. Santoro was again careful to note that neither he nor DECD has the authority to make determinations regarding applications under § 8-30g, he agreed that our application addressed his 2014 concern and is consistent with § 8-30g. Rather than summarize his correspondence, it is attached at Tab 7.

Conclusion

In 2014, the Commission was satisfied with Saddle Ridge's proposed 48 lot subdivision which included 20 affordable accessory apartments. The Commission's consultant had fully reviewed and found the plan addressed all the Commission's prior concerns and would not adversely impact the watershed. The Commission agreed, but denied the application based on the smaller size of the affordable accessory apartments. The Commission's denial resolution provided a clear path for Saddle Ridge to address that one remaining concern. Saddle Ridge has now done so by converting the accessory apartments into evenly sized duplex units. We respectfully request the Commission to approve this application.

We look forward to the opportunity to present these supplemental materials to the Easton Planning and Zoning Commission. If you need any additional information, please contact me directly.

Sincerely,

Matthew Ranelli

GMR:ekf
Attachments

c: Saddle Ridge Developers, LLC (w/ att.)
Milone & MacBroom, Inc. (w/ att.)
Soil Science and Environmental Services, Inc. (w / att.)

November 20, 2014

Planning & Zoning Commission
Town of Easton
225 Center Road
Easton, CT 06612

Attn: Mr. Robert Maquat, Chairman

Re: Easton Crossing Development Technical Review
Final Summary of Findings, Recommendations and Conclusions
GHD File No. 8618269

Dear Mr. Maquat:

As you know, GHD Inc. has been retained and authorized by the Town of Easton Planning and Zoning Commission to provide an independent third-party review of the application materials submitted to the Town for the proposed Easton Crossing development by Saddle Ridge Developers (Applicant) on property located adjacent to Sport Hill Road, Silver Hill Road, Cedar Hill Road and Westport Road in the Town of Easton. This letter serves as a follow up to GHD's original report dated October 17, 2014 regarding our review of application materials to the Easton Planning and Zoning Commission for the above referenced application and our associated findings. Following submission of that report to the Planning and Zoning Commission, we have since received and reviewed additional materials from the Applicant and the interveners (also known as the Coalition to Save Easton).

The additional materials received and reviewed by GHD are as listed below:

- Letter from Easton Building Official Emil Martin dated September 22, 2014;
- Letter from Steven Trinkaus, P.E., CPESC, CPSWQ of Trinkaus Engineering, LLC dated October 15, 2014 on behalf of the interveners;
- Letter from Town Engineer Edward Nagy, P.E. dated October 20, 2014;
- Report by John Hayes, Town Planning Consultant dated October 27, 2014;
- Letter from Steven Danzer, Ph.D of Steven Danzer, Ph.D & Associates, LLC dated October 29, 2014 on behalf of the interveners;
- Revised set of project plans prepared by Milone & MacBroom, Inc. dated October 30, 2014 on behalf of the Applicant;
- Engineering Report Addendum prepared by Milone & MacBroom, Inc. dated October 31, 2014 on behalf of Applicant;
- Supplemental application materials dated November 3, 2014 prepared by the applicant.

The intent of this letter is to discuss the Applicant's responses to the issues included in GHD's report dated October 17th and to provide a final summary of findings, recommendations and conclusions regarding potential issues concerning public health, safety or environmental impacts, based upon GHD's review of all documentation received and reviewed to date related to this application.

Review of Applicant's responses to the issues raised in GHD's report dated October 17, 2014

The following are GHD's comments regarding the responses provided by the Applicant's engineer Milone & MacBroom, Inc. in their letter dated November 3, 2014.

GHD Report – Item #1: Private Wells

GHD's professional opinion was that the proposed 48 wells in the subdivision are shown at close distances to each other, which causes concern for potential impacts between one well and another during operation and potentially to the aquifer overall. GHD recommended that the Applicant provide a report from a professional geologist evaluating the proposed well locations, anticipated depths, pumping rates, etc. to provide a professional determination of whether there is potential for adverse impacts to the aquifer or adjacent wells. In response to GHD's request (as also requested by the Easton Health Officer), the Applicant has submitted a report to the commission dated November 3, 2014 prepared by Scott Bighinatti, CFM, Environmental Scientist and David Murphy, P.E., Senior Hydrogeologist of Milone & MacBroom, Inc. which provides a comprehensive review of the aquifer geology, existing wells and proposed wells and concludes that adequate water quantity is available in the aquifer and that the high yield of the aquifer will minimize the chance that mutual interference effects between wells will occur, (i.e. well drawdown effects). It is GHD's professional opinion that this report is factual and based on acceptable methodology.

GHD had also commented that there is a potential for the individual wells to need water treatment systems which require the design of low flow water treatment system wastewater dispersal systems (LFWTW) on each property in compliance with Connecticut Department of Public Health criteria. These systems have since been designed by the Applicant's engineer and are shown on the project plans for each lot (per revised plans dated October 30, 2014). Approval and permitting of these systems are under the jurisdiction of the Town of Easton Health Department, in conjunction with the State of Connecticut Department of Public Health.

GHD Report – Item #2: Development Density

GHD reviewed the development density and determined that the density of the current development proposal is more accurately represented when Parcel A is removed from the density computation. This is because Parcel A will be subdivided and result in a separate lot that does not have future development restrictions. With Parcel A removed from the analysis, the proposed development density for the remaining 110.6 acre project area is 1 dwelling per 1.73 acres of buildable area (exclusive of wetlands). GHD noted that a recommended development guideline of 1 dwelling per 2 acres of buildable area in a drinking water supply watershed had been included in the Conservation and Development Policies Plan (CDPP) for Connecticut 2005-2010 but had subsequently been removed from the current CDPP for 2013-2018. Although the 1 dwelling per 2 acres of buildable area is not part of the current state CDPP plan as a development threshold standard for drinking water supply watersheds, it has consistently been GHD's professional opinion that it remains a reasonable goal for development density within a watershed area where practicable. However, since this criterion is not currently a state or local regulatory policy or standard, GHD recommended that the exact standard for acceptable development density within drinking

GHD Inc.
100 Roscommon Drive Suite 301 Middletown 06457 CT USA
T 1 860 316 2400 F 1 860 316 2401 W www.ghd.com

water watershed areas should retain some flexibility and the commission members should consider the project as a whole, when evaluating the merits of the Applicant's development proposal.

The Applicant has responded to this item by explaining that the 1 dwelling per 2 buildable acres criteria was based on a literature search of studies and reports of development in the 1980's, which was well before the DEEP issued its 2004 Connecticut Stormwater Quality Manual and prior to numerous revisions and upgrades to the Connecticut Department of Public Health design standards for subsurface sewage disposal systems. The Applicant noted that the literature search report was based on watershed development at the time that had little or no stormwater management practices to control stormwater runoff quantity or quality, in addition to inadequate and possibly failing subsurface sewage disposal systems. The Applicant also stated that the current state Conservation and Development Policies Plan recommends that development within a drinking water supply watershed contain a total area of impervious surfaces that is less than 10%.

GHD is in general agreement with the Applicant's response that the 1 dwelling per 2 acre development density previously cited by the CDPP plan for Connecticut 2005-2010 was based upon documentation of watershed development that did not likely include any substantial design measures for stormwater quantity control and stormwater quality treatment, and that septic system design standards at the time were not as advanced as they are under the current code standards of the Department of Health. Considering that the Applicant 1) is currently proposing to construct stormwater quality basins ("Pocket Ponds" and "Micropool Extended Detention Basins") for stormwater runoff rate and quality control according to criteria of the 2004 Connecticut Stormwater Quality Manual; 2) has included onsite retention and infiltration of roof runoff for up to 1-inch of rainfall for each lot; 3) is proposing to construct total impervious areas on the property less than 10% (in compliance with criteria of the current CDPP plan 2013-2018); 4) has provided a hydrogeology report that reviews the proposed wells and concludes that there will be no adverse impact to the aquifer; and 5) is proposing to install individual onsite septic systems designed in compliance with the current Connecticut Department of Public Health code standards; as a result, it is GHD's professional opinion that all of these elements of the current proposed development provide water quality and environmental protection enhancements beyond the watershed development characteristics that previously formed the basis of the 1 dwelling per 2 acre development density criteria. Therefore, it is GHD's opinion that when considering this project as a whole, the Applicant's proposed density of 1 dwelling per 1.73 acres of buildable area appears to be reasonable and justified, based on the adherence of the proposed development design to these current advanced standards and practices for stormwater management and sewage disposal.

GHD Report – Item #3: Sewage Flows and Septic Systems

GHD provided calculations of the estimated sewage flow and nitrogen discharges anticipated from the proposed development, including 28 four bedroom homes and 20 five bedroom homes with accessory apartments. The total average daily sewage flow for the proposed development (which will be discharged into the ground) is estimated to increase by approximately 11,000 gallons per day, as compared to the 21-lot subdivision previously approved by the Town for the property. Also, the total nitrogen associated with sewage flow (which will be discharged into the ground) is estimated to increase by approximately 2.2 pounds per day, as compared to the 21-lot subdivision previously approved by the Town for the property.

The Applicant has shown that the total sewage flows will be accommodated by Public Health Code compliant septic systems designed to serve each individual house within each lot. Approval and permitting of these systems are under the jurisdiction of the Town of Easton Health Department, in conjunction with the State of Connecticut Department of Public Health.

GHD has stated that nitrogen discharges in sewage effluent are only regulated per the Connecticut Department of Public Health when the density of development exceeds one bedroom per 0.167 acre (i.e. 6 bedrooms per acre) on an individual parcel (DPH Circular Letter January 13, 2000); and per the Department of Energy and Environmental Protection (DEEP), when the subsurface sewage discharge on an individual property exceeds 5,000 gallons per day. It remains GHD's professional opinion that the proposed 48-lot subdivision application does not fit the Department of Public Health and Department of Energy and Environmental Protection criteria requiring nitrogen analysis and therefore a septic effluent nitrogen analysis is not required for the current development application.

The Applicant's response stated that the proposed total nitrogen loading calculated by GHD of 3.45 pounds per day equates to the daily nitrogen output of approximately 10 horses and that as a result, the proposed development will provide an improvement over existing condition horse farm activities on the property. GHD has confirmed that the Applicant's claim of nitrogen loading equivalency from horses is consistent with data contained in the New Jersey Agricultural Experiment Station, Rutgers Cooperative Research & Extension Fact Sheet FS036. Accordingly, GHD concurs that the average daily nitrogen for wastewater discharges into the ground are likely to be comparable or less than the nitrogen discharge from current horse farm operations.

GHD Report – Item #4: Impervious Coverage

GHD reviewed the proposed site plans and confirmed that the total impervious coverage within the project area is approximately 7.1%. However, during a public hearing the Applicant was questioned by the Conservation Commission about how the conceptual house footprints on the site plans compared in size to the various architectural schematics submitted by the Applicant as possible home designs. In an attachment to the Milone & MacBroom November 3rd response letter, the Applicant's engineer provides an accounting of the total potential impervious coverage for development based on assuming the footprint of the largest home is applied to each lot, along with driveways, roadways, walkways, and additional 500 square feet of impervious coverage for each lot to account for future miscellaneous impervious coverage. The result of the engineer's analysis is a total estimated impervious coverage for the development of approximately 9.58 acres (8.7%), which is 1.48 acres below the state's Conservation and Development Policies Plan (CDPP) guideline of 11.06 acres (10%) for the 110.6 acre project area.

GHD has also recommended that the Town consider requiring that an impervious coverage limit of 10% (maximum) be placed as a deed restriction for each building lot so that the total impervious area of the subdivision will not exceed the 10% limit in perpetuity. The Applicant responded in objection to this recommendation claiming that this restriction would be unnecessarily burdensome to future property owners. The point of GHD's recommendation is to suggest that a regulatory mechanism be put in place by the Town, by which future development on lots within the property area of the subdivision shall not be permitted to exceed 10% in cumulative impervious coverage, as to remain consistent with the current

CDPP impervious coverage criteria. Therefore, as an alternative to GHD's recommendation for a deed restriction, GHD suggests that the Town consider what regulatory mechanisms can be adopted and/or applied to the subdivision in the future to perhaps monitor and sustain a cumulative impervious coverage area below 10% (11.06 total acres).

GHD Report – Item #5: Wetland and Upland Area Impacts

The total direct wetland impact area for the proposed 48-lot and dwelling subdivision remains the same as the 21-lot subdivision previously approved by the Town for the property. These direct impacts are limited to the box culvert construction and permanent roadway crossing along the proposed subdivision access road from Sport Hill Road. Disturbance in the Upland Review Area located within 100 feet from wetlands has been reduced by approximately 3 acres from +/- 8.3 acres (for the approved 21-lot conventional subdivision) to +/- 5.30 acres for the current proposed 48-lot subdivision development.

Based on GHD's recommendation, the Applicant has added a "Limit of Disturbance Line" boundary on the revised plan entitled "Site Plan – Sediment Erosion Controls" (Sheet SE-1). GHD recommends that the Town establish a condition that the Limit of Disturbance Line shown on Sheet SE-1 will serve as delineation of the permitted areas for clearing, grading and construction. GHD also recommends that the Town require the Limit of Disturbance Line be field staked on each lot prior to the start of construction so that no site disturbance (including tree clearing) or construction activity takes place in regulated areas, which have not been previously approved by the Town.

GHD Report – Item #6: Stormwater Management Design

GHD has expressed criticisms and concerns to the Town regarding the detention basin/water quality basins which have been designed by the Applicant's engineer for the proposed 48-lot subdivision. The Applicant has represented that these stormwater basins are essentially in the same locations and of the same designs that were approved by the Town for the Applicant's previous 21-lot conventional subdivision on the property. GHD has contended that the functional designs of the stormwater basins have changed from the previous 21-lot subdivision approval by way of the Applicant's engineer altering the design to remove underdrain pipes for the basins that were part of the previous design, along with claims by the engineer that the basins would provide for infiltration of the captured water quality volume into subsoils below the basins. GHD has also raised issues with whether the basins, as they had been modified and including the infiltration feature, were actually in compliance with the 2004 Connecticut DEEP Stormwater Quality Manual for a stormwater detention basin which also provides an infiltration function. Of particular concern was the apparent lack of required field testing in the areas of the basins to verify that the existing subsoils can support the infiltration function of the basins.

In response to GHD's concerns regarding the stormwater basins, the Applicant's engineer has proposed modifications to the design of the basins, such as adding impervious liners to the bottoms of the basins to prevent infiltration, thereby altering the basins to follow the design classifications of a "Pocket Pond" or "Micropool Extended Detention Pond" (as opposed to a detention basin/infiltration water quality basin), according to the 2004 Connecticut DEEP Stormwater Quality Manual. It is GHD's professional opinion that the newly modified basins have been designed in general conformance with the DEEP Stormwater

Quality Manual for design of a "Pocket Pond" and "Micropool Extended Detention Pond" and accordingly these basins should provide the manual's prescribed water treatment capabilities.

GHD also raised another issue that the design of the stormwater drainage system (catch basins and drain pipes) was based on a 10-year design storm capacity, whereas the stormwater basins are each designed for a much greater 100-year design storm capacity. There was a concern that since the stormwater basins are supposed to control stormwater runoff rates and quality for storm events up to a 100-year return frequency, then how would all of the runoff for storms over a 10-year storm get to the basins through the drainage pipes? The Applicant's engineer has since responded to this issue by revising the drainage system designs (catch basins and pipes) to provide capacity for up to a 100-year design storm.

Based on a detailed review of the Applicant's Engineering Report Addendum dated October 31, 2014 and applicable criteria of the 2004 Connecticut DEEP Stormwater Quality manual, GHD recommends that the Town consider requesting that the following stormwater management items be addressed by the Applicant to the satisfaction of the Town, perhaps by way of approval conditions:

1) According to the DEEP Stormwater Quality manual, the minimum recommended outlet size for a stormwater basin is 6-inches diameter (or equivalent) to prevent clogging. The Applicant's engineer is proposing a low flow outlet orifice for 4 of the 5 stormwater basins and all of these outlets are 4-inches in diameter. GHD recommends that the Applicant's engineer consider using a larger outlet orifice and install a removable trash rack device over the orifice to prevent clogging. An alternate option is to remove the orifice and install a reverse pipe from the bottom of the basin into the outlet structure. Proposed basin outlet modifications should be reviewed and approved by the Town Engineer.

2) Based on the current design, the proposed stormwater basins (classified as Pocket Ponds and Micropool Extended Detention Ponds) will have permanent pools in them with water depths of 1 to 3 feet. Greater depths of water will occur in the basins during storm events and also for a period following storm events, as captured stormwater runoff is being held and released. GHD recommends that the Applicant's engineer consider methods of minimizing safety concerns relative to standing water in the stormwater basins by providing landscaped safety benches and/or safety fencing for the basins accordance with CT DEEP or Town recommendations (Note: the DEEP generally discourages pond fencing, the preferred method is to grade and landscape the basins to eliminate drop-offs or other safety hazards). Also, warning signs should be posted for each of the basins prohibiting swimming and skating. All proposed safety measures for the stormwater basins should be reviewed and approved by appropriate Town staff.

3) GHD recommends that the Applicant's engineer specify design criteria for providing high-level overflow outlets from the roof drainage retention systems (Cultec Systems) on each individual lot. These overflows should be directed to the gutter line of the streets or connected directly to storm drains in order for roof drainage to be directed to the stormwater quality basins during all storm events. GHD also recommends that Town require that the Applicant's engineer verify that the stormwater runoff Curve Number (CN) used to model the proposed development conditions has

GHD Inc.
100 Roscommon Drive Suite 301 Middletown 06457 CT USA
T 1 860 316 2400 F 1 860 316 2401 W www.ghd.com

not been adjusted to remove roof areas from runoff calculations, as this adjustment would result in inaccurate (underestimated) runoff discharges for storms above 1 inch of rainfall.

4) In their supplemental materials submitted on November 6, 2014 the Applicant has provided a draft Homeowners Association Declaration which includes a maintenance policy. GHD recommends that the following sentence be added as bullet "(b)" to *Section II (B) 2 Catch Basins and Storm Drainage System*: "All waste generated by maintenance activities will be disposed of offsite at an appropriate waste disposal facility or site." Also, GHD recommends that the typical maintenance activities for stormwater ponds, shown on the following table, be incorporated into the Applicant's maintenance policy.

Typical Maintenance Activities for Stormwater Ponds Source: Table II-PI-4 from 2004 Connecticut DEEP Stormwater Quality Manual (adapted by GHD)	
Activity	**Schedule**
• Inspect for invasive vegetation	Semi-annual inspection
• Inspect for damage	Annual inspection
• Note signs of hydrocarbon build-up, and remove if detected	Annual inspection
• Monitor for sediment accumulation in the facility and forebay	Annual inspection
• Examine to ensure that inlet and outlet devices are free of debris and operational	Annual inspection
• Repair undercut or eroded areas	As needed maintenance
• Clean and remove debris from inlet and outlet structure	Monthly maintenance
• Wetland plant management and harvesting	Annual maintenance (if needed)
• Removal of sediment from the forebay	5 year maintenance
• Remove sediment when the pool volume has become reduced significantly or when significant algal growth is observed	10 year maintenance (if needed)

GHD Report – Item #7: Erosion and Sediment Controls

GHD noted that the DEEP Stormwater Quality Manual states on page II-P3-9 that "infiltration practices should not be used as temporary sediment basins during construction." The Applicant's Sediment and Erosion Control Site Plan (Drawing SE-1) proposes to locate temporary sediment traps within the bottom areas of 4 of the 5 permanent stormwater basins, within the same areas that will be used for infiltration by the basins. GHD recommended that the Town require the Applicant comply with the CT DEEP 2004 Stormwater Quality Manual and remove the temporary sediment traps from the basins and specify that the basin areas are not used for temporary sediment control measures.

The Applicant has since modified the design of the stormwater basins (as shown and discussed in supplemental application materials) to eliminate the potential for infiltration, by the addition of impervious liner layers to the bottom of the basins. Based on the stormwater basins now being designed with liners in accordance with the "Pocket Pond" or "Micropool Extended Detention Pond" criterial of the 2004 Connecticut Department of Environmental Protection Stormwater quality manual, it is GHD's professional opinion that locating temporary sediment traps within the basin areas will not cause long-term adverse

impacts to the functionality of the permanent stormwater basins, as proposed. However, according to the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, when the temporary and permanent basins share the same location, the larger of the two basins is recommended to be in place during the construction period. GHD agrees with this requirement, as the larger basin volume will provide for the capture of a greater runoff volume and provide an increased safeguard against temporary sediment and water quality impacts to adjacent wetlands during construction.

Additionally, if the Town does not have adequate resources to provide periodic inspection of site development activities and temporary erosion and sediment controls during the various phases of the project construction, it is GHD's professional opinion that the Town should request the services of a qualified third-party site monitor to provide periodic inspection of disturbed site areas during construction and submit reports of their findings directly to the Town.

Conclusions

Based on GHD's review of the original and supplemental application materials received to date (as noted in GHD's reports) for the Easton Crossing Development proposed by Saddle Ridge Developers, it is GHD's professional opinion that construction of the development in compliance with the current proposal, including the final recommendations provided by GHD in this report, will not result in foreseeable adverse impacts to public health, safety, wetlands, watercourses and the environment. Furthermore, the current design of the wet stormwater quality basins, which now generally comply with the "Pocket Pond" and "Micropool Extended Detention Pond" criteria of the 2004 DEEP Stormwater Quality Manual, should provide increased stormwater treatment capacity and performance as compared to the dry detention basins previously approved by the Town for the Applicant's 21-lot subdivision on the property.

If you should have any questions, please feel free to contact me.

Respectfully submitted,

GHD Inc.

Todd D. Ritchie, P.E.
Senior Project Manager

Engineering, Planning,
Landscape Architecture
and Environmental Science

MILONE & MACBROOM®

December 12, 2016

Matthew Ranelli, Esq.
Shipman & Goodwin, LLP
265 Church Street
Suite 1207
New Haven, CT 06510

RE: Easton Crossing
Easton, Connecticut
DPH #2014-0188
MMI #2683-01-29

Dear Attorney Ranelli:

Milone & MacBroom, Inc. (MMI) is in receipt of a memorandum addressed to the Easton Planning and Zoning Commission, dated November 21, 2016, from the Easton Health Department's Polly Edwards and Christopher Michos. To the comments provided in this memorandum, we offer the following responses:

C1. The property is presently zoned for 3 acre development. The existing 3 acre homes in the vicinity of the development have both a septic system and an onsite private well. In comparison, the lower half of Easton is zoned for 1 acre development. These homes are served by a septic system and public water. The proposed subdivision is calling for 1 acre lots with both a septic system and an onsite private well. We are concerned that the water quantity may not be available to serve such a dense development. There are property owners in the vicinity of the development who have chosen to drill a second well due to insufficient water quantity. The developer must provide an answer to the question – will there be adequate water quantity to serve this development? Because of the density of the development it will be difficult, if not impossible, to drill additional wells on the individual lots and meet all code requirements.

R1. **Yes, there will be adequate water supply. The Easton Health Department raised this concern when it reviewed Saddle Ridge's 2014 48-lot subdivision plan, and the commission was satisfied by providing the attached report prepared by Scott Bighinatti, Environmental Scientist, and David Murphy, P.E., a hydrogeologist, explaining the quantity of water available compared to the water necessary for each lot and neighbors. Based on our survey of well logs in the vicinity dating back to 1970, the bedrock formation below the site is relatively high yielding.**

Since 1970, only three wells in the area have been redrilled according to the state well log records. Of those, two are located on neighboring lots, and both yield significant flows of 20 gallons per minute (GPM) and are ranked among the highest yielding wells in the vicinity.

If a well has an inadequate water supply, there are several alternatives to drilling a new well. The first alternative is to lower the pump if it is not near the bottom of the well. Another alternative is to drill the well deeper in the same location. There is also a procedure called hydrofracking that can increase a well's yield. Those alternatives aside, there is room to move the proposed well location and drill a second well if necessary.

C2. We are concerned about water quality. Based on experience, we believe that many of the wells will require water treatment units for high iron and manganese, low pH, etc. Have any water quality studies been performed?

R2. **Water testing will be conducted on each well as it is drilled, which is the standard practice for wells in Easton and all of Connecticut. Furthermore, homeowners may decide to install water treatment units if they feel such units are necessary. During the public hearing process in 2014, we further addressed this concern by adding to the plans a 15'W x 3.5'L x 1.0'D stone leaching bed on each of the proposed lots in order to accommodate the possible need for water softener backwash discharge treatment. Approximately 60 gallons of water are processed per backwash cycle. We have provided capacity for approximately 157 gallons, which will provide more than the required 1.5 times the volume for the maximum daily discharge (60 x 1.5 = 90 gallons) as stated in the Connecticut Department of Energy & Environmental Protection (CTDEEP) General Permit for the Discharge of Low Flow Water Treatment Wastewater.**

C3. There are no footing drains shown on the proposed lots. All footing drains for the dwellings must discharge at a distance of at least 25' from the proposed subsurface sewage disposal systems. This must be addressed.

R3. **Footing drains are shown on the plans to discharge beyond 25' from proposed subsurface sewage disposal systems. The location of the discharge has been adjusted on Lots 20, 24 through 27, 39, 40, 42, and 45. In addition, the plans contain a note describing that any stormwater piping within 25' of proposed subsurface sewage disposal systems is to be tight pipe consistent with Public Health Code requirements.**

C4. Roof drain subsurface discharge units must be located at least 25' up gradient or 50' down gradient of the septic systems. The location of these units should be checked.

R4. **The locations of the roof runoff infiltration units have been checked, and they are located a minimum of 25' upslope or 50' downslope from leaching fields or septic tanks.**

C5. Is the developer planning on limiting the house construction to the two generic house plans that were submitted? There are no dimensions given for these structures.

R5. **At this time, the houses depicted in the submitted architecture are examples of the style of houses to be used throughout the development; however, they are not necessarily the final or only architectural plans that may be used. Any proposed future architecture would be required to fit into the 40' by 50' footprint shown on the plans.**

C6. The 48 lots are presently laid out to show feasibility for handling a 4 bedroom septic system and on-site well. In reality, the homes will not be square as shown, and the house styles and house locations may be changed based on builder's preference, etc. These are important issues, as the changing layout for one lot will affect the lots on either side. Is the developer planning on selling individual lots to different builders? If the lots are sold individually, who will control which lots will have the single family homes and which lots will have the duplex structures? Furthermore, and most importantly, the house plans for the single family homes show the potential for having 5-6 bedrooms. The septic systems are presently sized for only 4 bedrooms.

R6. The developer is not planning to sell individual lots to different builders; there will be one builder. The proposed zoning regulation limits the number of bedrooms to four bedrooms per lot. The specific lots to have duplexes are shown on the plans, and they are Lots 1 through 7, 10, and 41 through 48.

C7. It is unclear how the ownership/management of these properties will be handled. Which houses/duplexes will be affordable? How will the duplexes be managed if there are two separate property owners? Who is responsible for the maintenance/repair of the septic system or well? No information was submitted regarding these issues.

R7. The lots that will have duplex units are shown on the plans. The lots that could have affordable units are contained in the affordability plan. The duplex units on a lot could be owned by one owner or by two. If there are two owners, they will have shared responsibly for common elements on the lot such as the well and septic as is typical with duplex units. All of the lots will be part of a homeowners' association. The future management and maintenance will be governed by the by-laws of the homeowners' association. Although not required elsewhere in Easton, the homeowners' association will require homeowners to pump out and inspect their septic tanks at least once every 3 to 5 years.

Please feel free to contact me should you need any further information.

Very truly yours,

MILONE & MACBROOM, INC.

Ted Hart

Ted Hart, P.E., Vice President
Director of Civil Engineering

Enclosures

2683-01-29-d116-2-ltr

MILONE & MAC BROOM, INC. Inter-Office Memo

TO: Ted Hart, P.E., Milone & MacBroom, Inc.

FROM: Scott Bighinatti, CFM, Lead Environmental Scientist, Milone & MacBroom, Inc.
David Murphy, P.E., Senior Hydrogeologist, Milone & MacBroom, Inc.

DATE: November 3, 2014

RE: Easton Crossing Bedrock Wells
MMI #2683-01-27

Background

The Easton Health Officer has requested information regarding whether the proposed Easton Crossing wells have the potential to impact neighboring private wells and the bedrock aquifer in general. As detailed below, the bedrock aquifer in the vicinity of the Easton Crossing site is relatively high yielding and has ample capacity to supply the proposed development without impact to other nearby wells.

The Easton Crossing development has an estimated average daily water demand of 21,000 gallons per day (gpd)[1], or 14.58 gallons per minute (gpm). Each of the 48 proposed 1-acre lots will have an individual bedrock well installed. The information relied upon herein regarding the underlying aquifer is based on data published in other studies and from well logs of private bedrock wells in the surrounding area. Bedrock[2] underlying the Easton Crossing site generally strikes west to east, dips 42 degrees to the north, and is composed of granitic gneiss that was possibly formed during the Ordovician period. This bedrock formation is comprised of a light-colored, foliated granitic gneiss.

Fault lines[2] are mapped immediately to the west and east of the site striking in a north-south direction. It is likely that these fault lines contribute to the fracturing of bedrock in the area, which in turn provides higher yields to nearby wells. According to the USGS[3], steeply dipping, well-foliated gneisses and schists in western Connecticut are dominated by layer-parallel fracturing. "Unroofing" joints providing continuous lateral connections between steeply dipping layer-parallel fractures are also typically well developed. In many places, cross-fractures or joints strike perpendicular (or nearly so) to the strike of the layering. The strike and dip is

[1] Water demand calculation includes Department of Public Health (DPH) standard water usage of 75 gallons per person per day, PURA/DPH standard design population of 5 for four-bedroom dwelling for 28 homes, with an additional two persons for 20 homes with attached one-bedroom in-law apartment. 75 gpcd * 5 persons * 28 = 10,500 gpd; 75 gpcd * 7 * 20 = 10,500 gpd; total is 21,000 gpd.

[2] Rodgers, J., 1985, *Bedrock Geologic Map of Connecticut*, Connecticut Geological and Natural History Survey.

[3] Stam, J. J. and Stone, J. R., 2005, *Simulation of Ground-Water Flow to Assess Geohydrologic Factors and their Effect on Source-Water Areas for Bedrock Wells in Connecticut*, Reston, VA: United States Geological Survey Scientific Investigations Report 2004-5132.

particularly important in steeply dipping layered rocks because it may have a strong effect on the direction of groundwater flow.

Milone & MacBroom, Inc. (MMI) obtained bedrock well logs from the Connecticut Department of Consumer Protection (DCP) for the Town of Easton since 1970 and digitized the location of the well logs for the area surrounding the Easton Crossing site. Well locations were plotted based on recent aerial photography, and locations were estimated if the locational sketches showed only distances from nearby intersections. Information from these logs is summarized in Table 1 (attached), and well locations are shown on Figure 1. In general, the bedrock well logs indicate that the bedrock formation is relatively high yielding, with a high percentage of the well logs indicating yields of 5 gallons per minute or more.

Typically, drillers install bedrock wells until an adequate yield is noted, after which drilling is typically truncated by the property owner due to the cost. At the completion of drilling, a yield test is conducted over several hours (typically 4 hours for private residential wells) to determine the yield of the well. As such, 50 percent or more of the total yield listed on a drilling log is typically found within 20 feet of the bottom of the well. When significant yields are found but drilling continues, this information is typically noted on the log.

In some cases, new wells were installed at a property as replacements for earlier wells that were installed. Where well logs were identified as replacement wells at a property, this information is noted in Table 1. Given the high reported yields noted in Table 1, even if the bedrock wells near the proposed development had lost 50 percent of their original yield, it is likely that the existing wells would continue to be suitable for residential purposes. However, as noted below, there is no basis to assume that nearby wells would suffer any decrease in yield based on the proximity and yield of the proposed wells.

Based on the USGS mapping, bedrock groundwater beneath the site will tend to flow generally to the north due to the strike and dip of the bedrock. Based on the strike and dip, the bedrock groundwatershed associated with the Easton Crossing site was delineated by using the eastern and western limits of the individual source-water areas (delineated by the blue-hatched area on Figure 1 below) and extending north and south to the nearest watercourses or water bodies (as shown by the red-highlighted area on Figure 1). Although the actual bedrock groundwatershed is likely much larger, extending only to the nearest surface water bodies provides boundaries that are more appropriate for localized analysis of water usage. The total groundwatershed area associated with the Easton Crossing site is approximately 251 acres.

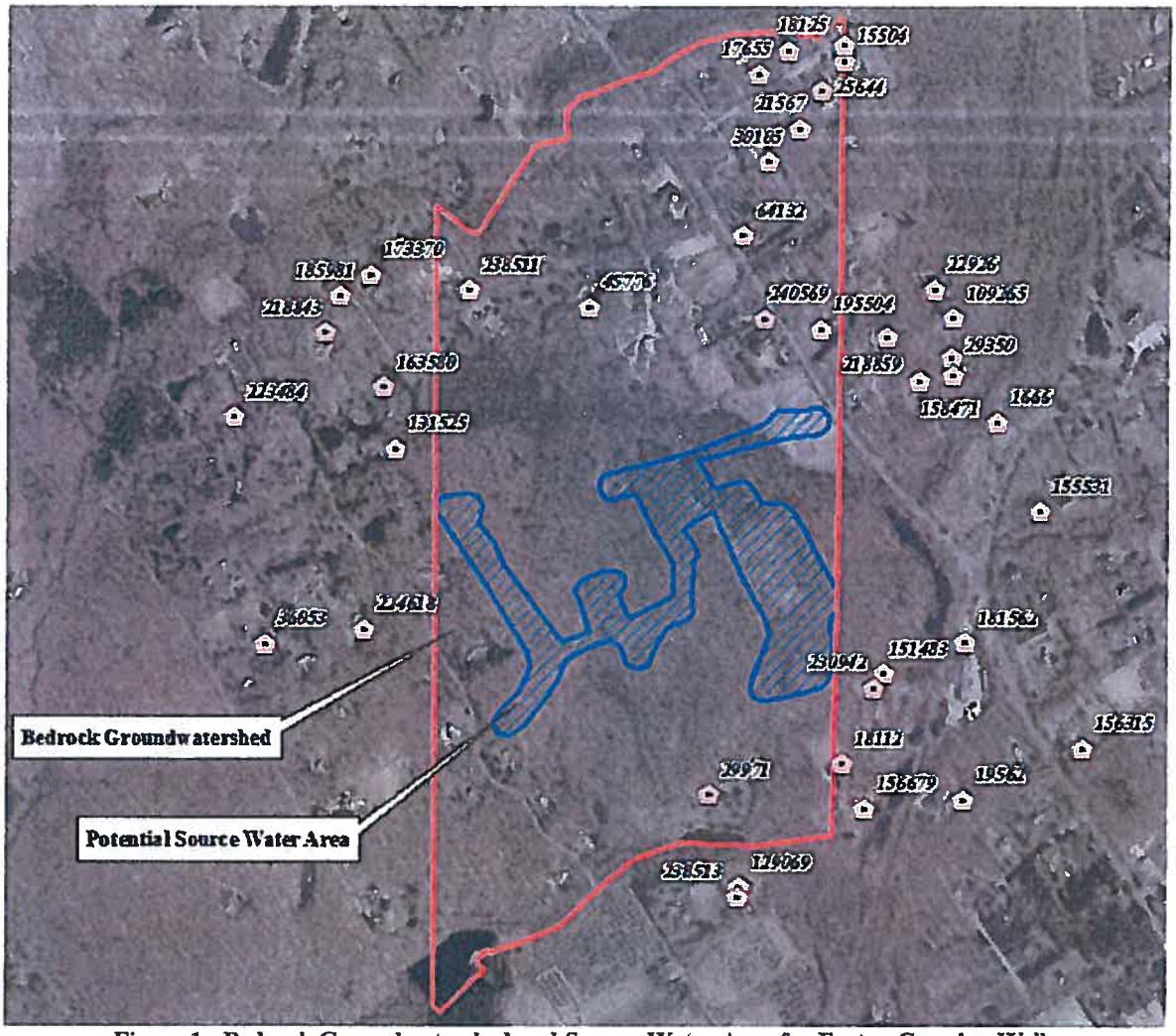


Figure 1: Bedrock Groundwatershed and Source-Water Area for Easton Crossing Wells

Assuming the bedrock area beneath these 251 acres is recharged at a rate of 7 inches per year (per the USGS[3]), the recharge of the bedrock will occur at a rate of 90.8 gpm. **The average daily water demand of the Easton Crossing site (21,000 gpd, or 14.58 gpm) is only 16.1 percent of the recharge rate for this bedrock aquifer.**

Approximately 34 existing homes lie within the 251-acre groundwatershed based on recent aerial photography of the area available from Microsoft. The average water demand for these 34 homes is estimated to be 7,523 gpd (5.22 gpm)[4]. This is equivalent to 5.7 percent of the recharge rate for the bedrock aquifer. The Easton Crossing development will increase the amount of water withdrawn from the aquifer to 21.8 percent of its recharge. This will likely be smaller as

[4] DPH standard water usage of 75 gallons per person per day * 2010 U.S. Census average household size for Town of Easton of 2.95 * 34 homes [water supply planning allows for application of census data].

the design population and design per-capita daily water usage values utilized herein are conservative. Furthermore, it is important to understand that the majority of the groundwater withdrawn for potable supply will be returned on site via septic systems and, therefore, will not be exported out of the groundwatershed.

Given the relatively small percentage of withdrawal in comparison to the bedrock groundwatershed area and the fact that most of this water will be returned to the subsurface, there is ample groundwater available to serve the proposed development without impacting neighboring wells in the overall groundwatershed. Furthermore, due to the low pumping rates of the residential wells, the on-site wells will have little to no effect on each other.

Summary

Based on the water budgets described in this memo, an adequate quantity of water is available to serve the new homes as well as to continue serving the existing homes in the area. Furthermore, the high yield of the aquifer minimizes the chance that mutual interference effects such as well drawdowns may occur. Finally, the majority of the groundwater withdrawn for potable supply will be returned on site via septic systems and, therefore, will not be exported out of the groundwatershed.

Attachment

2683-01-27-n314-imemo

Table 1. Well Logs for Properties Nearby Easton Crossing

Road	Depth to Bedrock	Depth of Well	Bedrock Type	Permit Number	Yield (GPM)	Year Drilled	Overburden Geology	Comment
Church Road	75	200	mixed ledge	1666	7	1970	dirt gravel	
Wimbleton Lane	15	152	granite, brown sand stone	15504	11	1973	stone dirt	
Wimbleton Lane	29	158	grey soft granite, mica-graphite	18125	15	1973	top soil, dirt- stone	
Wimbleton Lane	40	173	hardpan, brown sandstone, gray granite	17655	15	1973	hardpan	
Sport Hill Road	11	123	blue white and grey granite	22926	8	1974	sand-gravel	
Westport Road	7	100	bedrock	19562	25	1974	gravel	
Bibbins Road	4	68	hard pan, gray rock	18112	3	1973	sand-rocks	
Wimbleton Lane	25	170	soft gray granite, brown sandstone	21567	20	1974	hardpan	
Wimbleton Lane	60	175	mica	30105	18	1975	gravel	
Church Road	15	150	bedrock	29350	12	1975	soil	
Bibbins Road	31	385	mica	29971	14	1975	hardpan	
Cedar Hill Lane	3	155	black and white granite	36053	20	1976	dirt	
Silver Hill Road	18	300	bedrock	45776	5	1979	soil	
Sport Hill Road	29	325	mica, granite	64132	10	1980	gravel	
Cedar Hill Road	4	450	bedrock	131525	8	1988	soil	
Bibbins Road	12	160	grey granite, grey and white granite	129069	2	1988	dirt	
Wimbleton Lane	30	400	bedrock	145063	5	1991	soil	
Westport Road	14	303	light gray soft rock	151483	10	1992	dirt, clay and gravel	
Church Road	50	280	granite	158471	10	1993	topsoiled sand and gravel	
Church Road	12	145	white granite, black and white granite	109265	15	1986	dirt and stones	
Sport Hill Road	10	196	grey shale, grey granite	156315	4	1993	dirt	
Bibbins Road	14	200	soft gray shale	156679	10	1993	gravel and clay	
Sport Hill Road	9	262	gray shale	240569	15	2008	dirt	
Silver Hill Road	25	220	grey shale	238511	20	2008	sand	
Bibbins Road	11	215	grey shale	238513	20	2008	dirt	Replaced #129069
Cedar Hill Lane	6	220	grey granite	224618	20	2005	dirt	
Silver Hill Road	40	272	brown sandstone, grey shale	223484	8	2005	hardpan	
Westport Road	6	605	bedrock	230942	2	2005	soil	Replaced #151483
Sport Hill Road	0	180	grey shale	218859	20	2004	Redrilled existing well	
Silver Hill Road	7	265	grey shale	218843	5	2004	dirt	
Sport Hill Road	6	220	grey shale	195504	20	2000	dirt	
Westport Road	44	200	soft brown rock, light grey rock	181562	16	1997	sand, gravel and clay	
Church Street	7	185	grey shale	172364	30	1997	dirt	Replaced # 29350
Silver Hill Road	8	235	grey shale	185981	9	1998	dirt	
80 Silver Hill Road	15	218	brown sandstone and grey shale	173370	6	1996	hardpan	
Silver Hill Road	45	230	brown sandstone and grey shale	163580	5	1995	sand	
Stepney Road	14	285	soft seamy schist, schist	155531	3	1993	sand and gravel	

Engineering, Planning,
Landscape Architecture
and Environmental Science

MILONE & MACBROOM®

December 12, 2016

Matthew Ranelli, Esq.
Shipman & Goodwin, LLP
265 Church Street
Suite 1207
New Haven, CT 06510

RE: Easton Crossing
Easton, Connecticut
DPH #2014-0188
MMI #2683-01-29

Dear Attorney Ranelli:

Milone & MacBroom, Inc. (MMI) is in receipt of a memorandum addressed to the Easton Planning and Zoning Commission, dated November 18, 2016, from Chief Shaw of the Easton Police Department. To the comments provided in this memorandum, we offer the following responses:

C1. A possible concern may be the movement of construction traffic through the various surrounding residential areas and an obvious increase in the traffic once construction is complete.

R1. The construction traffic will be the same as proposed in the 2014 plan, which was reviewed by Police Chief James Candee. All construction traffic will enter and exit from Sport Hill Road. All construction traffic approaching or leaving the site will utilize either State Route 136 or State Route 59, located one-quarter mile to the south via Sport Hill Road. Construction traffic will not be allowed to enter or exit onto Cedar Hill Road unless the police chief recommends otherwise.

C2. Proper signage would also need to be studied and approved by Town Engineer Edward Nagy and the P&Z commission.

R2. Typical stop signs, stop bars, and street signs will be added to the final plans consistent with Mr. Nagy's comments in 2014.

Please feel free to contact me should you need any further information.

Very truly yours,

MILONE & MACBROOM, INC.

Ted Hart

Ted Hart, P.E., Vice President
Director of Civil Engineering

2683-01-29-d116-3-ltr

Engineering, Planning,
Landscape Architecture
and Environmental Science

MILONE & MACBROOM®

December 12, 2016

Matthew Ranelli, Esq.
Shipman & Goodwin, LLP
265 Church Street
Suite 1207
New Haven, CT 06510

RE: Easton Crossing
Easton, Connecticut
DPH #2014-0188
MMI #2683-01-29

Dear Attorney Ranelli:

Milone & MacBroom, Inc. (MMI) is in receipt of a letter addressed to Robert Maquat, dated November 28, 2016, from Lori Mathieu, Public Health Section Chief, Drinking Water Section (DWS) of the Connecticut Department of Public Health (DPH). Ms. Mathieu notes that "...this project does not vary significantly from the 2014 proposal." She goes on to state, "the comments in the previous DWS correspondence remain valid for this application," and she has attached the September 16, 2014 comment letter from her coworker, Eric McPhee. To the comments provided in the letter from Eric McPhee, we offer the following responses:

C1. If the storm water management system will not be owned and operated by the Town of Easton, a provision should be developed to ensure that the system is operated as designed and maintained to ensure protection of the sources of public drinking water.

R1. Saddle Ridge is willing to turn the stormwater system over to the town if that is the town's preference. Otherwise, the homeowners' association will have a maintenance policy that requires maintenance of the catch basins and storm drainage system.

C2. The proposed subdivision includes installation of 48 individual subsurface sewage disposal systems. Regular maintenance of subsurface sewage disposal systems including pumping and inspecting the tanks every three to five years is recommended for all septic systems. Many Towns within public drinking water supply watersheds have enacted town-wide septic pump out ordinances as a proactive approach to protect sources of public drinking water supply and save homeowners money in the long run by avoiding expensive repairs. It is recommended that the Town of Easton consider enacting such an ordinance if there is not one currently in place.

R2. The homeowners' association will require homeowners to pump out and inspect their septic tanks at least once every 3 to 5 years.

C3. The application states that total impervious surface for the entire development is less than the ten percent figure that current research indicates is the threshold for water quality impairment.

In order to ensure that the impervious surface of the total parcel remains below ten percent, it is recommended that a mechanism is in place to ensure that the Open Space Areas remain protected from future development and are preserved to maintain public drinking water quality.

R3. **As designed, the impervious surface for the total parcel is well below 10 percent. The project area is 110.6 acres, which would allow up to 11.06 acres of impervious coverage on the lots. The main mechanism to ensure that a large portion of the site will remain pervious is that 42.5 acres of open space will be deed restricted to prohibit future development. Saddle Ridge will agree to the DPH recommended condition and is willing to work with DPH on an acceptable second mechanism to restricted impervious coverage for the total project area (110.6 acre) to 10 percent.**

C4. The attached Construction Best Management Practices should be adhered to in order to minimize the potential for accidental contamination of the public drinking water source of supply due to construction activities.

R4. **The "General Construction Best Managements Practices for Sites within a Public Drinking Water Supply Area" will be placed on the final plans.**

Please feel free to contact me should you need any further information.

Very truly yours,

MILONE & MACBROOM, INC.

Ted Hart

Ted Hart, P.E., Vice President
Director of Civil Engineering

2683-01-29-d116-1-ltr

Engineering, Planning,
Landscape Architecture
and Environmental Science

MILONE & MACBROOM®

December 12, 2016

Matthew Ranelli, Esq.
Shipman & Goodwin, LLP
265 Church Street, Suite 1207
New Haven, CT 06510

RE: Easton Crossing
Easton, Connecticut
DPH #2014-0188
MMI #2683-01-29

Dear Attorney Ranelli:

Milone & MacBroom, Inc. (MMI) is in receipt of a letter from Brian Roach of Aquarion Water Company dated November 15, 2016.

Mr. Roach claims that the current Easton Crossing proposal is "inappropriate within this public drinking water supply watershed area." He also claims that the developer has sought "to develop the property at densities higher than those that are widely accepted as the maximum allowable..." Mr. Roach fails to note that the previous state Plan of Conservation and Development (POCD) that recommended a development density of one house per 2 acres of developable land in a water supply watershed has been superseded, and the new 2013-2018 POCD no longer contains that policy. When the State of Connecticut revised the POCD, it deleted the general recommendation that Mr. Roach relies on and replaced it with a policy that development within a water supply watershed should be limited to a maximum coverage of 10 percent. The current plans for Easton Crossing meet this policy with a proposed impervious coverage of 6.7 percent.

Lori Mathieu, Public Health Section Chief, Drinking Water Section of the Connecticut Department of Public Health (DPH) and Eric McPhee, Supervising Environmental Analyst, Source Assessment and Protection Unit of the DPH Drinking Water Section both reviewed the Easton Crossing Plan and did not note any inconsistency with the state POCD but rather offered suggested conditions of approval concerning management and maintenance items in the event the commission chose to approve the application.

The general density recommendation that Mr. Roach relies on does not reflect the current state of engineering required for modern stormwater management and septic design. At the time that the recommendation was included in Department of Energy & Environmental Protection (DEEP) Bulletin 11 and other documents of that era (i.e., late 1980s and early 1990s), the DEEP *Stormwater Manual* did not exist, and most stormwater relied upon for literature reviews such as Bulletin 11 involved areas that lacked stormwater controls. The public health code requirements for on-site septic systems have also been upgraded significantly from the time of those studies. When the commission's consultant in 2014, GHD, reviewed the plans, it agreed that the one unit per two acre recommendation "was based upon

documentation of watershed development that did not likely including any substantial design measures for stormwater quantity control and stormwater quality treatment, and that septic system design standards at the time were not as advances as they are under the current code standards of the Department of Public Health." GHD found that the density proposed in 2014 combined with the advanced protective measures included in Saddle Ridge's plans complied with the *Stormwater Manual* and was protective of the watershed. Saddle Ridge's current plans include all the same protective measures agreed to by GHD with slightly fewer units, fewer bedrooms, and fewer impervious surfaces.

The recommendations of DPH and GHD reflect the changes to the POCD and current stormwater and septic practices. Mr. Roach does not acknowledge or address these changed circumstances or identify any specific harm if the proposed development is constructed.

Very truly yours,

MILONE & MACBROOM, INC.

Ted Hart

Ted Hart, P.E., Vice President
Director of Civil Engineering

2683-01-29-d616-ltr

Engineering, Planning,
Landscape Architecture
and Environmental Science

MILONE & MACBROOM®

December 12, 2016

Matthew Ranelli, Esq.
Shipman & Goodwin LLP
265 Church Street
Suite 1207
New Haven, CT 06510

RE: Easton Crossing
Easton, Connecticut
DPH #2014-0188
MMI #2683-01-29

Dear Attorney Ranelli:

Milone & MacBroom, Inc. (MMI) is in receipt of an email addressed to the Easton Planning and Zoning Commission, dated November 17, 2016, from the Easton Building Official, Anthony C. Ballaro. To the comments provided in this email, we offer the following response:

C1. On or about 10/25/2016 I received a few drawings for single and 2 family homes. I was asked to review the drawings and give my opinion on the buildings. There are no dimensions for any dwelling or any space with in the structure. The drawings seem to be a generic plan for almost any size home. The drawings are terribly incomplete as there are no details regarding structure or Building Code issues, also for "affordable" homes there seems to be a lot of wasted spaces with 2 story rooms and cathedral ceilings. Seems to me you would try to utilize all of the available space for living area as possible in affordable housing. I will be able to give a better review and opinion should I get a set of plans that include all necessary information. Thank You, Anthony C. Ballaro, Building Official.

R1. At this time, the houses depicted in the submitted architecture are examples of the style of houses to be used throughout the development; however, they are not the final or only architectural plans that may be used. Any proposed future architecture would be required to fit into the 40' by 50' footprint shown on the plans. Final architecture and plot plans will be submitted for each lot when the builder submits for a building permit prior to construction.

Please feel free to contact me should you need any further information.

Very truly yours,

MILONE & MACBROOM, INC.

Ted Hart

Ted Hart, P.E., Vice President
Director of Civil Engineering

Enclosures

2683-01-29-d116-2-ltr

Ranelli, Matt

From: Santoro, Michael C <Michael.Santoro@ct.gov>
Sent: Friday, December 09, 2016 10:03 AM
To: Ranelli, Matt
Subject: Easton Affordable Housing Application

Attorney Ranelli:

My apologies for the delay in responding. It has been a fairly hectic week.

As we have discussed, I do need to remind you that the State of Connecticut Department of Housing does not have any authority with regard to a determination of applicability under the provisions of the Affordable Housing Land Use Appeal, Chapter 126a of the general statutes . Ultimately, it is the judicial branch of state government that is the final arbiter relative to this statute. However the Department is responsible for the provision of technical assistance and guidance relative to the provisions of this statute, and as the agency primarily responsible for the creation and preservation of affordable housing, as well as the lead agency for all housing matters in the State, I am happy to provide assistance on this topic.

Based on the materials provided, and our discussion on Tuesday, December 6, 2016, the proposal does appear to meet the statutory and regulatory provisions of the Affordable Housing Land Use Appeal, Chapter 126a of the general statutes. The affordable unit mix appears to meet the requirements relative to income targeting, comparability of the units relative to size, type, access to amenities, unit distribution within the development, and construction schedule.

With regard to the sample calculation, you had indicated that the developer intended to update those calculations after construction to provide a more accurate estimate of the costs, either for ownership or rental, depending on the final determination, and to certify that such units would be sold or rented in accordance with the statutory/regulatory obligations relative to affordability. I would agree that the formula you used to complete the sample calculation is the one recommended in the statute and regulations, and that it is reasonable to update this calculation immediately prior to first occupancy. I would advise the Town that a condition of approval should be that the final calculations must be submitted for review and approval by the Town prior to the first sale or rental.

I hope this information is useful to you, and should you care to discuss this project further, please do not hesitate to contact me.

Michael C. Santoro
CD Specialist
Office of Policy, Research and Housing Support
Department of Housing
505 Hudson Street
Hartford, CT 06106-7106

860-270-8171
860-706-5741 (fax)
860-913-8361 (cell)

CONNECTICUT
Department of Housing

From: Ranelli, Matt [mailto:MRanelli@goodwin.com]
Sent: Wednesday, December 07, 2016 12:52 PM
To: Santoro, Michael C <Michael.Santoro@ct.gov>
Subject: RE: Easton Affordable Housing Application

Hi Mike,

Thank you for meeting with me yesterday regarding Saddle Ridge's 2016 affordable housing application pending before the PZC in Easton. As per our conversation, I am writing to confirm our discussion that you are satisfied that the changes Saddle Ridge made to the affordable units addresses your concern regarding compatibility of unit sizes and (2) that the plan is compatible with the a set aside development application under Section 8-30g (subject to items that would have to be finalized upon approval and prior to actual rentals). I have attached the portions of the application packet that we went over at the meeting.

I realize that it may be unusual for you to be drawn into commenting on a pending application but, as you are aware there is resistance to affordable housing proposals in Easton and given the solicitation of your involvement in our prior application by opponents, the issue was bound to arise whether your comments are addressed by our new proposal. By way of background, in 2014 we applied to the Easton PZC using affordable accessory apartments because the PZC had indicated that affordable accessory apartments were preferable and their existing regulations allowed accessory apartments. As you know, under Section 8-30g(k) an affordable accessory apartment is required to be smaller than the main unit to which it is attached. Notwithstanding the preference for affordable accessory units, very near the end of the 2014 public hearing, your input was solicited by the opponents of the application and the concerns that you expressed regarding the disparity in size between the affordable accessory apartments and the main units became the PZC reason for denial.

To address the concern regarding the smaller size of the affordable accessory units proposed in 2014, Saddle Ridge has re-applied to the Easton PZC for substantially the same plan as 2014 but has used duplex units rather than affordable accessory apartments. In the 2016 plans, all of the proposed duplex units are equal in size as their market rate counterparts (the same is true of the proposed single family homes too). Please confirm that this change addresses the concern regarding the smaller size of the affordable accessory units proposed in 2014.

As we discussed, the proposal (as with the 2014) proposal has all the other elements for a proposed set aside development. The application proposes to set aside (i.e., deed restrict) 30 percent of the units as affordable for 40 years in accordance with Section 8-30g of the General Statutes. Each category of housing proposed (i.e., single family homes and duplex homes) have 30 percent set aside (and the set aside units are further divided between residents earning less than 60 and less than 80 percent of median income).

As we calculated in your office we are proposing:

- 48 subdivided lots (the same as 2014);
- Of the 48 lots, 30 will have single family homes and 18 will have duplex homes;
- Of the 30 single family homes, nine will be set aside for 40 years as affordable (five at the 80 percent level and four at the 60 percent level);
- Of the 36 duplex units on 18 lots, 11 will be set aside for 40 years as affordable (five at the 80 percent level and six at the 60 percent level);

- In total there are 66 units (two less than 2014), twenty of which will be set aside as affordable in accordance with section 8-30g; and

- The units are disbursed through throughout the site plan and build on a pro rata schedule.

We also discussed the "sample rent calculation" for the units which follows the formula in Section 8-30g. As we discussed the numbers included in our sample calculations are estimates for the sample computation. The affordability plan would have to be updated and reviewed with actual rent computations prior to actual rental based on conditions at that time in the future. As I mentioned Easton does not have a housing authority to provide utility estimates like other towns. We have included utility estimates that we have used in a number of other sample calculations based on similar bedroom counts and clearly labeled them as "samples computations." You noted that there are at least three options for reasonable utility expense (1) actual housing cost (2) information from utilities and (3) published standards such as HUD Section Utility Allowance Schedules (and you provided me with the HUD estimates of $187 and $294 respectively). We agreed that to the extent our sample estimates in the draft plan turn out to be low, the result would be that the rent in the final computation in the final affordability plan would be even less expensive at the time of rental. Based on our meeting and the above, please confirm the affordable units count is correct for a set aside development (i.e., 30 percent) and the affordability formula for the 80 and 60 percent unit numbers is the statutory formula under 8-30g (provided the utility estimates would have to reflect reasonable costs at the time of rental based on unit type).

Easton has an acute need for affordable housing. Only 0.55 percent of its homes qualified as affordable under the DECD 2015 Affordable Housing Appeals List. That number has remained essentially the same roughly two decades. By addressing the PZC's reason for denial, Saddle Ridge thinks it is providing a great opportunity for Easton to make some progress on meeting the need for affordable housing (by more than doubling the number of affordable units available).

Please give me a call if you would like to discuss. Thank you again for meeting with me.

Best regards,
Matt

Shipman & Goodwin
LLP
COUNSELORS AT LAW

Matthew Ranelli
Partner
265 Church Street - Suite 1207
New Haven, CT 06510-7013

Tel (203) 836-2805
Fax (203) 836-2802
mranelli@goodwin.com
www.shipmangoodwin.com

-----Original Appointment-----
From: Santoro, Michael C [mailto:Michael.Santoro@ct.gov]
Sent: Monday, December 05, 2016 12:16 PM
To: Santoro, Michael C; Ranelli, Matt
Subject: Easton Affordable Housing Application
When: Tuesday, December 13, 2016 8:30 AM-9:30 AM (UTC-05:00) Eastern Time (US & Canada).
Where: Mike's Office -

2nd Floor
505 Hudson Street
Hartford, CT 06106

SHEET NO. LA-R

PROJECT NO. 2683-01

DATE MAY 19, 2014

SCALE 1"=100'

DESIGNED CEH

DRAWN CEH

CHECKED EAH

SITE PLAN - SUBDIVISION

EASTON CROSSING

SPORT HILL ROAD, SILVER HILL ROAD,
CEDAR HILL ROAD & WESTPORT ROAD
EASTON, CONNECTICUT

REVISIONS

2014-10-21	OPEN SPACE LABEL
2016-11-8	SCALE REVISED TO 80
2016-09-08	REVISED

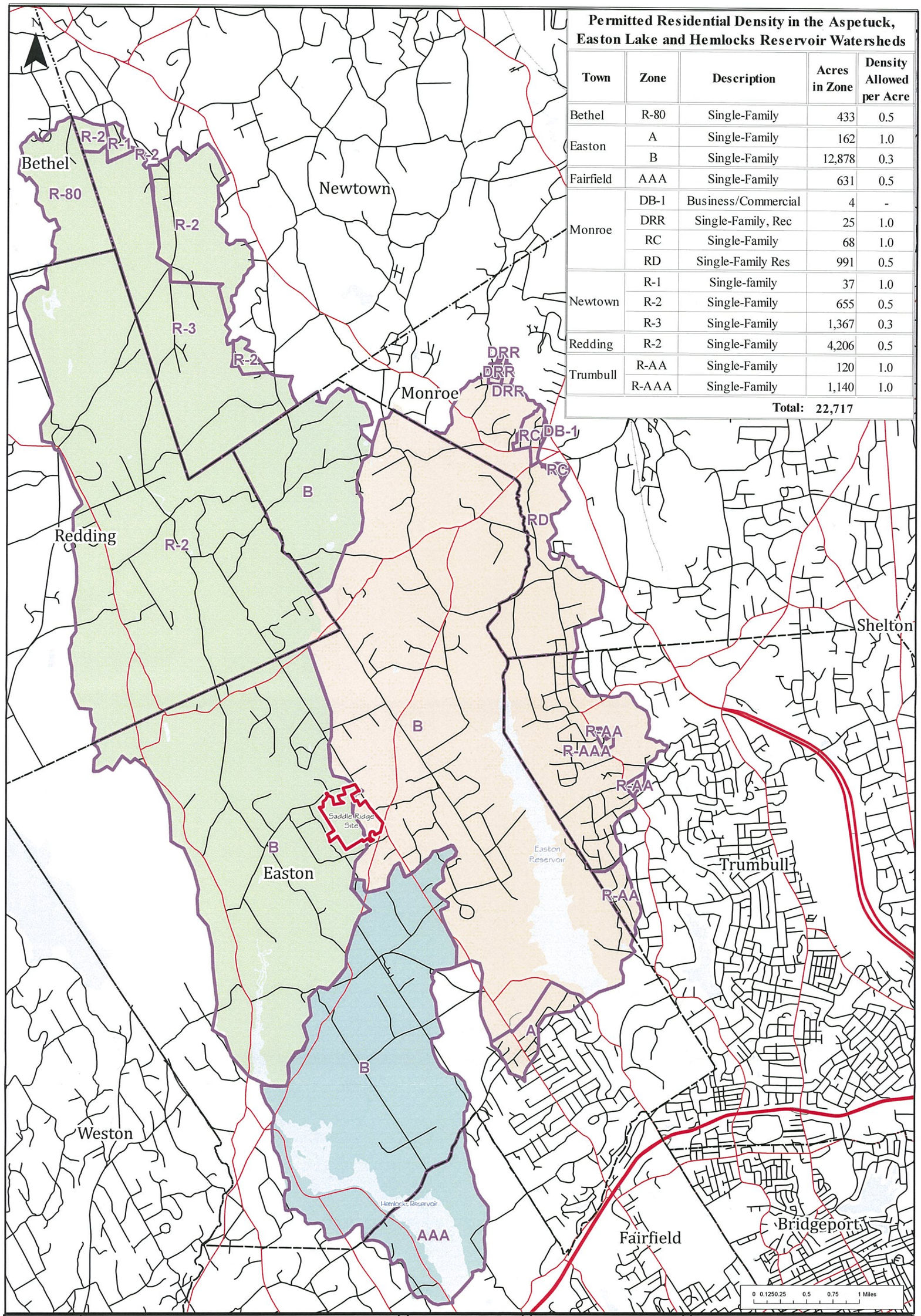
Engineering, Landscape Architecture and Environmental Science

MILONE & MACBROOM®

99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773 Fax (203) 272-9733
www.milonandmacbroom.com

0 100 200 400

W N E S



Permitted Residential Density in the Aspetuck, Easton Lake and Hemlocks Reservoir Watersheds

Town	Zone	Description	Acres in Zone	Density Allowed per Acre
Bethel	R-80	Single-Family	433	0.5
Easton	A	Single-Family	162	1.0
	B	Single-Family	12,878	0.3
Fairfield	AAA	Single-Family	631	0.5
Monroe	DB-1	Business/Commercial	4	-
	DRR	Single-Family, Rec	25	1.0
	RC	Single-Family	68	1.0
	RD	Single-Family Res	991	0.5
Newtown	R-1	Single-family	37	1.0
	R-2	Single-Family	655	0.5
	R-3	Single-Family	1,367	0.3
Redding	R-2	Single-Family	4,206	0.5
Trumbull	R-AA	Single-Family	120	1.0
	R-AAA	Single-Family	1,140	1.0
		Total:	**22,717**	

DESIGNED | RA DRAWN | MZ CHECKED

DATE: OCTOBER 20, 2010

PROJECT NO: 2683-01-17

MAP NAME:

SHEET NO.

SADDLE RIDGE DEVELOPMENT

ZONING ANALYSIS

EASTON, CONNECTICUT

REVISIONS

April 28, 2011

Engineering, Landscape Architecture and Environmental Science

MILONE & MACBROOM®

99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773 Fax (203) 272-9733
www.miloneandmacbroom.com

Aspetuck Reservoir
Easton Lake Reservoir
Hemlocks Reservoir
Zoning
Town Boundary

Income & Jobs in Connecticut

Many Working Households Struggle to Get By

Changes in the economy and in household formation leave many in Connecticut struggling to afford housing. Many jobs pay less than the state's median household income of **$70,048** annually and have an hourly wage that is less than the housing wage (what one needs to afford a typical 2-BR apartment) of **$24.29**.

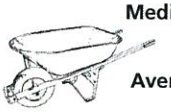
- The median annual income of the state's 730 occupations is **$43,812**, 63% of the state median household income.
- The median annual income of **72%** of occupations is less than 100% of the state median households income.
- The median annual income of **22%** of occupations is less than 50% of the state median households income.
- The average hourly wage of **47%** of occupations is less than the state housing wage.

Here are some examples of occupations where median annual income is...

0% to 30% of Median Household Income

WAITERS & WAITRESSES	FOOD PREPARATION & SERVING WORKERS, INCLUDING FAST FOOD	CASHIERS
		
Median Annual Income: **$19,558**	Median Annual Income: **$19,998**	Median Annual Income: **$21,260**
Average Hourly Wage: **$10.92**	Average Hourly Wage: **$10.92**	Average Hourly Wage: **$11.29**

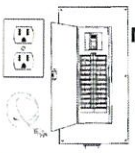
30% to 50% of Median Household Income

HAIRDRESSERS, HAIRSTYLISTS, & COSMETOLOGISTS	LANDSCAPING & GROUNDSKEEPING WORKERS	PRESCHOOL TEACHERS, EXCEPT SPECIAL EDUCATION
		
Median Annual Income: **$24,289**	Median Annual Income: **$30,870**	Median Annual Income: **$30,926**
Average Hourly Wage: **$14.24**	Average Hourly Wage: **$15.87**	Average Hourly Wage: **$17.60**

50% to 80% of Median Household Income

DENTAL ASSISTANTS	EMERGENCY MEDICAL TECHNICIANS & PARAMEDICS	AUTOMOTIVE SERVICE TECHNICIANS & MECHANICS
		
Median Annual Income: **$41,508**	Median Annual Income: **$41,228**	Median Annual Income: **$41,264**
Average Hourly Wage: **$20.04**	Average Hourly Wage: **$20.66**	Average Hourly Wage: **$21.00**

80% to 100% of Median Household Income

LICENSED PRACTICAL & VOCATIONAL NURSES	ELECTRICIANS	FIRE FIGHTERS
		
Median Annual Income: **$56,113**	Median Annual Income: **$56,790**	Median Annual Income: **$61,658**
Average Hourly Wage: **$26.90**	Average Hourly Wage: **$27.56**	Average Hourly Wage: **$28.64**

Turn this page over for more examples →

Sources: State Median Household Income - U.S. Census Bureau, 2014 1-Year American Community Survey; Housing wage data - National Low Income Housing Coalition, Out of Reach 2015; Occupations data - CT Dept. of Labor, Labor Market Information, Statewide Wages, 1Q 2015

HOMECONNECTICUT
For Our Economy, Our Families, Our Future
a campaign of the Partnership for Strong Communities

FOR MORE INFORMATION, CONTACT:
DAVID FINK, POLICY DIRECTOR
DAVID@PSCHOUSING.ORG

PARTNERSHIP FOR STRONG COMMUNITIES
860.244.0066
WWW.PSCHOUSING.ORG
PARTNERSHIP FOR STRONG COMMUNITIES

More occupations where the median annual income is less than the state median household income:

Occupation	Median Annual Income	% of State Median Household Income	Average Hourly Wage	% of State's Housing Wage
Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	$19,568	28%	$9.88	39%
Bartenders	$19,620	28%	$11.28	39%
Manicurists and Pedicurists	$19,660	28%	$10.67	39%
Transportation Attendants, Except Flight Attendants	$20,374	29%	$10.50	40%
Nonfarm Animal Caretakers	$21,919	31%	$11.68	43%
Food Preparation Workers	$22,184	32%	$11.82	44%
Retail Salespersons	$23,786	34%	$13.72	47%
Laundry and Dry-Cleaning Workers	$24,163	34%	$12.51	48%
Personal and Home Care Aides	$25,260	36%	$12.62	50%
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	$27,386	39%	$14.77	54%
Packaging and Filling Machine Operators and Tenders	$28,438	41%	$14.73	56%
Laborers and Freight, Stock, and Material Movers, Hand	$28,559	41%	$14.95	57%
Team Assemblers	$29,629	42%	$15.67	59%
Tellers	$29,683	42%	$14.81	59%
Production Workers, All Other	$30,657	44%	$16.86	61%
Landscaping and Groundskeeping Workers	$30,870	44%	$15.87	61%
Receptionists and Information Clerks	$32,190	46%	$15.85	64%
Healthcare Support Occupations	$32,433	46%	$16.63	64%
Office Clerks, General	$34,625	49%	$17.27	69%
Medical Assistants	$34,743	50%	$17.37	69%
Library Technicians	$36,807	53%	$19.16	73%
Veterinary Technologists and Technicians	$36,827	53%	$18.82	73%
Social and Human Service Assistants	$37,466	53%	$18.93	74%
Customer Service Representatives	$37,913	54%	$19.27	75%
Bus Drivers, Transit and Intercity	$38,695	55%	$19.83	77%
Secretaries, Except Legal, Medical, and Executive	$39,557	56%	$19.63	78%
Automotive Service Technicians and Mechanics	$41,264	59%	$21.00	82%
Dental Assistants	$41,508	59%	$20.04	82%
Construction Laborers	$42,744	61%	$21.28	85%
Computer-Controlled Machine Tool Operators, Metal and Plastic	$42,749	61%	$21.30	85%
Maintenance and Repair Workers, General	$43,231	62%	$21.50	86%
First-Line Supervisors/Managers of Retail Sales Workers	$44,847	64%	$23.31	89%
Machinists	$45,487	65%	$21.90	90%
Truck Drivers, Heavy and Tractor-Trailer	$46,066	66%	$22.68	91%
Fitness Trainers and Aerobics Instructors	$46,586	67%	$23.68	92%
Medical and Clinical Laboratory Technicians	$48,204	69%	$24.24	95%
Carpenters	$50,051	71%	$24.65	99%
Paralegals and Legal Assistants	$52,199	75%	$25.62	103%
Construction and Extraction Occupations	$52,361	75%	$25.85	104%

Sources: State Median Household Income - U.S. Census Bureau, 2014 1-Year American Community Survey; Housing wage data - National Low Income Housing Coalition, Out of Reach 2015; Occupations data - CT Dept. of Labor, Labor Market Information, Statewide Wages, 1Q 2015

SOURCE WATER ASSESSMENT REPORT

AN EVALUATION OF THE SUSCEPTIBILITY OF PUBLIC DRINKING WATER SOURCES TO POTENTIAL CONTAMINATION

CT0150011

Aquarion Water Company of Connecticut
Easton Reservoir System

The State of Connecticut Department of Public Health (DPH) in cooperation with the Department of Environmental Protection (DEP) recently completed an initial assessment of the Easton Reservoir System, which is a source of public drinking water that is maintained and operated by the Aquarion Water Company of Connecticut. This one-time assessment is part of a nationwide effort mandated by Congress under the Safe Drinking Water Act Amendments of 1996 to evaluate the susceptibility of all public drinking water sources in Connecticut to potential sources of contamination. DPH began working in partnership with the DEP in 1997 to develop Connecticut's Source Water Assessment Program, which was approved by the U.S. Environmental Protection Agency in 1999. Sources of potential contamination that are of concern to public drinking water supplies here in Connecticut are generally associated with historic waste disposal or commercial, industrial, agricultural and residential properties that store or use hazardous materials like petroleum products, solvents or agricultural chemicals.

The assessment is intended to provide Aquarion Water Company of Connecticut consumers with information about where their public drinking water comes from, sources of potential contamination that could impact it, and what can be done to help protect it. This initial assessment complete will also assist the public water supply system, regional planners, local government, public health officials and state agencies in evaluating the degree to which the Easton Reservoir System may be at risk from potential sources of contamination. The assessment can be used to target and implement enhanced source water protection measures such as routine inspections, protective land use regulations, acquisition of critical land, proper septic system maintenance, and public education. General sources of contamination with the potential to impact the Easton Reservoir System include properties with underground fuel storage tanks, improperly maintained on-site septic systems, improper waste disposal, or commercial/industrial sites that store or use chemicals or generate hazardous wastes.

Easton Reservoir System Source Water Assessment Summary

STRENGTHS

Point source pollution discharge points not present in this watershed area

More than 30% of the watershed area is owned by the public water system

More than 30% of the land in the watershed area exists as preserved open space

Public water system has a comprehensive source protection program.

POTENTIAL RISK FACTORS

Potential contaminant sources present in the watershed

Local regulations or zoning initiatives for the protection of public drinking water sources do not exist

Susceptibility Rating

Rating	Environmental Sensitivity	Potential Risk Factors	Source Protection Needs
Low	X		X
Moderate		X	
High			

Overall Susceptibility Rating: Low

This rating indicates susceptibility to potential sources of contamination that may be in the source water area and does not necessarily imply poor water quality.

Detailed information about the specific factors and information used in establishing this rating can be found in Table 2. Information about opportunities to improve protection in the Easton Reservoir System is also presented in Table 2.

DEPARTMENT OF PUBLIC HEALTH

Keeping Connecticut Healthy

State of Connecticut Department of Public Health
Drinking Water Division
410 Capitol Avenue – MS# 51WAT
P.O. Box 340308 Hartford, CT 06134
(860) 509-7333

Produced With Funding Provided By The United States Environmental Protection Agency - May 2003

OVERVIEW - The Easton Reservoir System watershed encompasses some 10,766 acres of land in Easton, Monroe, Newtown, Redding, and Trumbull. Approximately 31.6% of this watershed is owned by the Aquarion Water Company of Connecticut. Public drinking water sources in this system include Easton Lake Reservoir and West Pequonnock Diversion. State-wide satellite imagery developed by the University of Connecticut indicates that undeveloped land and residential properties presently account for approximately 86.7% percent of the land cover in the Easton Reservoir System. Commercial development at 3.4% and agricultural land use at 9.9% account for the remainder of the land coverage in the source water area. Approximately 36.4% of the land in the watershed area is preserved including all watershed land owned by the Aquarion Water Company of Connecticut, state forest and parklands, and municipally or privately held land designated as open space. Information about drinking water quality and treatment is available in the Aquarion Water Company of Connecticut's annual Consumer Confidence Report.

ASSESSMENT METHODS.

The drinking water source assessment methods used by the Department of Public Health Drinking Water Division to evaluate the susceptibility of public drinking water sources to contamination are based on criteria individually tailored to surface water and groundwater sources. The criteria are keyed to sanitary conditions in the source water area, the presence of potential or historic sources of contamination, existing land use coverage's, and the need for additional source protection measures within the source water area. Source-specific data for community and non-community systems were used to determine whether a particular criterion should be rated as low, moderate or high, relative to the risk of potential contamination at the drinking water source. Further, a ranking system was used to compute an average rank for each community drinking water source based on its environmental sensitivity, potential risk of contamination and source protection needs. Watersheds and reservoirs rated as having a low, moderate or high susceptibility to potential sources of contamination generally exhibit the characteristics summarized in Table 1.

Table 1 – General Watershed Area Characteristics and Susceptibility Ratings

Susceptibility Rating	General Characteristics of the Watershed Area*
Low	Low density of potential contaminant sources Lower intensity of land development
Moderate	Low to moderate density of potential contaminant sources Moderate intensity of land development
High	Moderate to high density of potential contaminant sources Higher intensity of land development No local watershed protection regulations Detectable nitrates and/or volatile organic chemicals in the untreated source water during the past three years that are below the maximum contaminant levels allowed by state and federal drinking water regulations

** Note: Not all characteristics may be present for a given susceptibility rating*

Readers of this assessment are encouraged to use the attached glossary to assist in the understanding of the terms and concepts used throughout this report.

Maps representing the location and features of the Easton Reservoir System source water area have not been included with this assessment report because of homeland security concerns.

EASTON RESERVOIR SYSTEM ASSESSMENT RESULTS.

Based on a combination of current reservoir and watershed area conditions, existing potential contaminant sources, and the level of source protection measures currently in place, the source water assessment for this watershed system indicates that it has an overall Low risk of contamination from any identified potential sources of contamination. The assessment findings for the Easton Reservoir System are summarized in Table 2, which lists current conditions in the source water area and recommendations or opportunities to enhance protection of this public drinking water source. A listing of potential contaminant source types in the area, if present, can be found in Table 3. A summary of source water area features is shown in Table 4. It should be noted that this rating does not necessarily imply poor water quality or ongoing violations of the Connecticut Public Health Code.

The assessment of this and other comparable watershed areas throughout Connecticut generally finds that adopting recommendations similar to those presented in Table 2 could reduce the susceptibility of most surface water sources to potential sources of contamination.

Table 2 **Source Water Assessment Findings and Source Protection Opportunities For the Easton Reservoir System**

Assessment Category	Conditions as of June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	Predominant watershed topography characterized by gentle slopes Reservoirs have moderate capacity to support excessive growths of algae and plankton	Monitor runoff during heavy precipitation events Monitor reservoir nutrient levels for source waters classified as eutrophic or mesotrophic.
Contaminants Detected in Untreated Source Water	None Click here to review EPA's current drinking water standards	Encourage homeowners to adopt residential best management practices that minimize the use of hazardous materials or generation of hazardous waste in the watershed.
Potential Risk Factors	Potential contaminant sources present in the watershed More than 50% of land for this source water area is undeveloped, which could present a risk if developed inappropriately. Major state or interstate roadways present in the watershed Known contaminant release points present in the watershed	Periodically inspect these sites and maintain a water quality monitoring program consistent with the level of potential risk Proactively work with local officials and developers to insure that only low-risk development occurs within the watershed area Monitor road salt and herbicide usage along these roadways and address potential for hazardous material spills resulting from vehicular accidents Maintain an adequate level of surveillance around contaminant release point sites to insure that surface water contamination is not occurring Encourage residential property owners to inspect and regularly cleanout onsite septic systems and replace underground fuel storage tanks with above ground tanks.
Source Protection Needs Factors	More than 30% of the watershed area is owned by the public water system Local regulations or zoning initiatives for the protection of public drinking water sources do not exist Comprehensive plans and policies for the protection of public drinking water sources do not exist at the local government level Point source pollution discharge points not present in this watershed area	Establish local watershed protection regulations to protect public drinking water sources Develop or enhance local governmental plans and policies that favor the protection of public drinking water sources Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources present in the Easton Reservoir System source water area are listed in Table 3. While these facilities, if present, have the potential to cause surface water contamination; there is no indication that they are doing so at this time.

Table 3 – Summary of Significant Potential Contaminant Types in the Easton Reservoir System Source Water Area

Category	Subcategory	Number of SPCS Types
Waste Storage, Handling, Disposal	Hazardous Waste Facilities	8
	Solid Waste Facilities	0
	Miscellaneous	3
Bulk Chemical, Petroleum Storage	Underground Storage Tanks	0
	Tank Farms	0
	Warehouses	1
Industrial Manufacturing / Processing	Chemical & Allied Production	0
	Chemical Use Processing	1
	Miscellaneous	0
Commercial Trades and Services	Automotive and Related Services	4
	Chemical Use Services	0
	Miscellaneous	0
Miscellaneous	No Identifiable SPCS Type	0
Agricultural Operations	Animal or Livestock Waste Handling	1
	Pesticide Storage or Application	1
Total Number of Contaminant Types		19

Prominent features of the Easton Reservoir System source water area are summarized in Table 4.

Table 4 - Features of the Easton Reservoir System

Location of Watershed Area	Easton, Monroe, Newtown, Redding, and Trumbull
Name of Reservoir(s) and Diversion(s)	Easton Lake Reservoir and West Pequonnock Diversion
Number and Type of Public Drinking Water Reservoirs or Diversions in the Watershed	1 Distribution and 1 Transfer
Trophic Status of Reservoir(s)	2 Mesotrophic
DEP Surface Water Classification	AA
Watershed Area (total acreage)	10,766 acres
Preserved Land in the Watershed [a]	3,919 acres
Predominant Watershed Topography	gentle slopes
General Land Use and Land Cover in the Watershed [b]	
-Urban - Commercial or Industrial	3.4%
-Urban - Residential	11.3%
-Agricultural	9.9%
-Undeveloped Land	75.4%
Significant Potential Contamination Sources	
-Number of inventoried facilities in source water area [c]	20
-Count of inventoried facilities per square mile	1.19 per sq mile
-Number of contaminant types within inventoried facilities	19
Number of Contaminant Release Points Inventoried by CTDEP [d]	1

[a] Preserved land includes any combination of land owned by the public water supply, state forest and parklands, and municipally or privately held land designated as open space.

[b] Based on statewide data layer of land use and land cover developed by UCONN Dept of Natural Resource Management Engineering and Connecticut DEP satellite imagery averaged across the entire watershed.

[c] Inventoried facilities reflect the actual number of SPCS sites present in the source water area, which may have more than 1 type of contaminant present at the facility.

[d] Sites or locations with documented accidental spills, leaks or discharges. While these sources, which are cataloged and tracked by the Connecticut DEP, may fall within a public drinking water supply source water area, they may or may not presently be discharging to the environment or causing contamination of a public drinking water source.

SOURCE WATER ASSESSMENT REPORT

AN EVALUATION OF THE SUSCEPTIBILITY OF PUBLIC DRINKING WATER SOURCES TO POTENTIAL CONTAMINATION

CT0150011

Aquarion Water Company of Connecticut
Hemlocks Reservoir System

The State of Connecticut Department of Public Health (DPH) in cooperation with the Department of Environmental Protection (DEP) recently completed an initial assessment of the Hemlocks Reservoir System, which is a source of public drinking water that is maintained and operated by the Aquarion Water Company of Connecticut. This one-time assessment is part of a nationwide effort mandated by Congress under the Safe Drinking Water Act Amendments of 1996 to evaluate the susceptibility of all public drinking water sources in Connecticut to potential sources of contamination. DPH began working in partnership with the DEP in 1997 to develop Connecticut's Source Water Assessment Program, which was approved by the U.S. Environmental Protection Agency in 1999. Sources of potential contamination that are of concern to public drinking water supplies here in Connecticut are generally associated with historic waste disposal or commercial, industrial, agricultural and residential properties that store or use hazardous materials like petroleum products, solvents or agricultural chemicals.

The assessment is intended to provide Aquarion Water Company of Connecticut consumers with information about where their public drinking water comes from, sources of potential contamination that could impact it, and what can be done to help protect it. This initial assessment complete will also assist the public water supply system, regional planners, local government, public health officials and state agencies in evaluating the degree to which the Hemlocks Reservoir System may be at risk from potential sources of contamination. The assessment can be used to target and implement enhanced source water protection measures such as routine inspections, protective land use regulations, acquisition of critical land, proper septic system maintenance, and public education. General sources of contamination with the potential to impact the Hemlocks Reservoir System include properties with underground fuel storage tanks, improperly maintained on-site septic systems, improper waste disposal, or commercial/industrial sites that store or use chemicals or generate hazardous wastes.

Hemlocks Reservoir System Source Water Assessment Summary

STRENGTHS

Point source pollution discharge points not present in this watershed area

20 to 30 percent of watershed area is owned by public water system

More than 30% of the land in the watershed area exists as preserved open space

Public water system has a comprehensive source protection program.

POTENTIAL RISK FACTORS

Potential contaminant sources present in the watershed

Local regulations or zoning initiatives for the protection of public drinking water sources do not exist

Susceptibility Rating

Rating	Environmental Sensitivity	Potential Risk Factors	Source Protection Needs
Low	X	X	
Moderate			X
High			

Overall Susceptibility Rating: Low

This rating indicates susceptibility to potential sources of contamination that may be in the source water area and does not necessarily imply poor water quality.

Detailed information about the specific factors and information used in establishing this rating can be found in Table 2. Information about opportunities to improve protection in the Hemlocks Reservoir System is also presented in Table 2.

DEPARTMENT OF PUBLIC HEALTH

Keeping Connecticut Healthy

State of Connecticut Department of Public Health
Drinking Water Division
410 Capitol Avenue – MS# 51WAT
P.O. Box 340308 Hartford, CT 06134
(860) 509-7333

Produced With Funding Provided By The United States Environmental Protection Agency - May 2003

OVERVIEW - The Hemlocks Reservoir System watershed encompasses some 36,946 acres of land in Bethel, Danbury, Easton, Fairfield, Newtown, Redding, Ridgefield, and Weston. Approximately 25.7% of this watershed is owned by the Aquarion Water Company of Connecticut. Public drinking water sources in this system include Aspetuck, Hemlocks, and Saugatuck reservoirs and the Morehouse Brook Diversion. State-wide satellite imagery developed by the University of Connecticut indicates that undeveloped land and residential properties presently account for approximately 87.6% percent of the land cover in the Hemlocks Reservoir System. Commercial development at 0.5% and agricultural land use at 11.9% account for the remainder of the land coverage in the source water area. Approximately 36.8% of the land in the watershed area is preserved including all watershed land owned by the Aquarion Water Company of Connecticut, state forest and parklands, and municipally or privately held land designated as open space. Information about drinking water quality and treatment is available in the Aquarion Water Company of Connecticut's annual Consumer Confidence Report.

ASSESSMENT METHODS.

The drinking water source assessment methods used by the Department of Public Health Drinking Water Division to evaluate the susceptibility of public drinking water sources to contamination are based on criteria individually tailored to surface water and groundwater sources. The criteria are keyed to sanitary conditions in the source water area, the presence of potential or historic sources of contamination, existing land use coverage's, and the need for additional source protection measures within the source water area. Source-specific data for community and non-community systems were used to determine whether a particular criterion should be rated as low, moderate or high, relative to the risk of potential contamination at the drinking water source. Further, a ranking system was used to compute an average rank for each community drinking water source based on its environmental sensitivity, potential risk of contamination and source protection needs. Watersheds and reservoirs rated as having a low, moderate or high susceptibility to potential sources of contamination generally exhibit the characteristics summarized in Table 1.

Table 1 – General Watershed Area Characteristics and Susceptibility Ratings

Susceptibility Rating	General Characteristics of the Watershed Area*
Low	Low density of potential contaminant sources Lower intensity of land development
Moderate	Low to moderate density of potential contaminant sources Moderate intensity of land development
High	Moderate to high density of potential contaminant sources Higher intensity of land development No local watershed protection regulations Detectable nitrates and/or volatile organic chemicals in the untreated source water during the past three years that are below the maximum contaminant levels allowed by state and federal drinking water regulations

* ***Note: Not all characteristics may be present for a given susceptibility rating***

Readers of this assessment are encouraged to use the attached glossary to assist in the understanding of the terms and concepts used throughout this report.

Maps representing the location and features of the Hemlocks Reservoir System source water area have not been included with this assessment report because of homeland security concerns.

HEMLOCKS RESERVOIR SYSTEM ASSESSMENT RESULTS.

Based on a combination of current reservoir and watershed area conditions, existing potential contaminant sources, and the level of source protection measures currently in place, the source water assessment for this watershed system indicates that it has an overall Low risk of contamination from any identified potential sources of contamination. The assessment findings for the Hemlocks Reservoir System are summarized in Table 2, which lists current conditions in the source water area and recommendations or opportunities to enhance protection of this public drinking water source. A listing of potential contaminant source types in the area, if present, can be found in Table 3. A summary of source water area features is shown in Table 4.

The assessment of this and other comparable watershed areas throughout Connecticut generally finds that adopting recommendations similar to those presented in Table 2 could reduce the susceptibility of most surface water sources to potential sources of contamination.

Table 2 Source Water Assessment Findings and Source Protection Opportunities For the Hemlocks Reservoir System

Assessment Category	Conditions as of June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	Predominant watershed topography characterized by moderate slopes Reservoirs have moderate or unknown capacity to support excessive growths of algae and plankton	Monitor runoff during heavy precipitation events Monitor reservoir nutrient levels in eutrophic or mesotrophic sources and determine trophic status of source waters listed as unknown
Contaminants Detected in Untreated Source Water	None Click here to review EPA's current drinking water standards	Encourage homeowners to adopt residential best management practices that minimize the use of hazardous materials or generation of hazardous waste in the watershed.
Potential Risk Factors	Potential contaminant sources present in the watershed More than 50% of land for this source water area is undeveloped, which could present a risk if developed inappropriately. Major state or interstate roadways present in the watershed Known contaminant release points present in the watershed	Periodically inspect these sites and maintain a water quality monitoring program consistent with the level of potential risk Proactively work with local officials and developers to insure that only low-risk development occurs within the watershed area Monitor road salt and herbicide usage along these roadways and address potential for hazardous material spills resulting from vehicular accidents Maintain an adequate level of surveillance around contaminant release point sites to insure that surface water contamination is not occurring Encourage residential property owners to inspect and regularly cleanout onsite septic systems and replace underground fuel storage tanks with above ground tanks.
Source Protection Needs Factors	20 to 30 percent of watershed area is owned by public water system Local regulations or zoning initiatives for the protection of public drinking water sources do not exist Comprehensive plans and policies for the protection of public drinking water sources do not exist at the local government level Point source pollution discharge points not present in this watershed area	Establish local watershed protection regulations to protect public drinking water sources Develop or enhance local governmental plans and policies that favor the protection of public drinking water sources Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources present in the Hemlocks Reservoir System source water area are listed in Table 3. While these facilities, if present, have the potential to cause surface water contamination; there is no indication that they are doing so at this time.

SOURCE WATER ASSESSMENT REPORT

AN EVALUATION OF THE SUSCEPTIBILITY OF PUBLIC DRINKING WATER SOURCES TO POTENTIAL CONTAMINATION

CT0150011

Aquarion Water Company of Connecticut
Trap Falls Reservoir System

The State of Connecticut Department of Public Health (DPH) in cooperation with the Department of Environmental Protection (DEP) recently completed an initial assessment of the Trap Falls Reservoir System, which is a source of public drinking water that is maintained and operated by the Aquarion Water Company of Connecticut. This one-time assessment is part of a nationwide effort mandated by Congress under the Safe Drinking Water Act Amendments of 1996 to evaluate the susceptibility of all public drinking water sources in Connecticut to potential sources of contamination. DPH began working in partnership with the DEP in 1997 to develop Connecticut's Source Water Assessment Program, which was approved by the U.S. Environmental Protection Agency in 1999. Sources of potential contamination that are of concern to public drinking water supplies here in Connecticut are generally associated with historic waste disposal or commercial, industrial, agricultural and residential properties that store or use hazardous materials like petroleum products, solvents or agricultural chemicals.

The assessment is intended to provide Aquarion Water Company of Connecticut consumers with information about where their public drinking water comes from, sources of potential contamination that could impact it, and what can be done to help protect it. This initial assessment complete will also assist the public water supply system, regional planners, local government, public health officials and state agencies in evaluating the degree to which the Trap Falls Reservoir System may be at risk from potential sources of contamination. The assessment can be used to target and implement enhanced source water protection measures such as routine inspections, protective land use regulations, acquisition of critical land, proper septic system maintenance, and public education. General sources of contamination with the potential to impact the Trap Falls Reservoir System include properties with underground fuel storage tanks, improperly maintained on-site septic systems, improper waste disposal, or commercial/industrial sites that store or use chemicals or generate hazardous wastes.

Trap Falls Reservoir System Source Water Assessment Summary

STRENGTHS

Point source pollution discharge points not present in this watershed area

Public water system has a comprehensive source protection program.

POTENTIAL RISK FACTORS

Potential contaminant sources present in the watershed

Less than 20% of watershed area owned by public water system

Local regulations or zoning initiatives for the protection of public drinking water sources do not exist

Susceptibility Rating

Rating	Environmental Sensitivity	Potential Risk Factors	Source Protection Needs
Low	X		
Moderate		X	
High			X

Overall Susceptibility Rating: Moderate

This rating indicates susceptibility to potential sources of contamination that may be in the source water area and does not necessarily imply poor water quality.

Detailed information about the specific factors and information used in establishing this rating can be found in Table 2. Information about opportunities to improve protection in the Trap Falls Reservoir System is also presented in Table 2.

DEPARTMENT OF PUBLIC HEALTH

Keeping Connecticut Healthy

State of Connecticut Department of Public Health
Drinking Water Division
410 Capitol Avenue – MS# 51WAT
P.O. Box 340308 Hartford, CT 06134
(860) 509-7333

Produced With Funding Provided By The United States Environmental Protection Agency - May 2003

OVERVIEW - The Trap Falls Reservoir System watershed encompasses some 9,883 acres of land in Monroe, Shelton, and Trumbull. Approximately 17.6% of this watershed is owned by the Aquarion Water Company of Connecticut. Public drinking water sources in this system include Far Mill, Means Brook and Trap Falls reservoirs. State-wide satellite imagery developed by the University of Connecticut indicates that undeveloped land and residential properties presently account for approximately 86.7% percent of the land cover in the Trap Falls Reservoir System. Commercial development at 1.6% and agricultural land use at 11.6% account for the remainder of the land coverage in the source water area. Approximately 19.7% of the land in the watershed area is preserved including all watershed land owned by the Aquarion Water Company of Connecticut, state forest and parklands, and municipally or privately held land designated as open space. Information about drinking water quality and treatment is available in the Aquarion Water Company of Connecticut's annual Consumer Confidence Report.

ASSESSMENT METHODS.

The drinking water source assessment methods used by the Department of Public Health Drinking Water Division to evaluate the susceptibility of public drinking water sources to contamination are based on criteria individually tailored to surface water and groundwater sources. The criteria are keyed to sanitary conditions in the source water area, the presence of potential or historic sources of contamination, existing land use coverage's, and the need for additional source protection measures within the source water area. Source-specific data for community and non-community systems were used to determine whether a particular criterion should be rated as low, moderate or high, relative to the risk of potential contamination at the drinking water source. Further, a ranking system was used to compute an average rank for each community drinking water source based on its environmental sensitivity, potential risk of contamination and source protection needs. Watersheds and reservoirs rated as having a low, moderate or high susceptibility to potential sources of contamination generally exhibit the characteristics summarized in Table 1.

Table 1 – General Watershed Area Characteristics and Susceptibility Ratings

Susceptibility Rating	General Characteristics of the Watershed Area*
Low	Low density of potential contaminant sources Lower intensity of land development
Moderate	Low to moderate density of potential contaminant sources Moderate intensity of land development
High	Moderate to high density of potential contaminant sources Higher intensity of land development No local watershed protection regulations Detectable nitrates and/or volatile organic chemicals in the untreated source water during the past three years that are below the maximum contaminant levels allowed by state and federal drinking water regulations

** Note: Not all characteristics may be present for a given susceptibility rating*

Readers of this assessment are encouraged to use the attached glossary to assist in the understanding of the terms and concepts used throughout this report.

Maps representing the location and features of the Trap Falls Reservoir System source water area have not been included with this assessment report because of homeland security concerns.

TRAP FALLS RESERVOIR SYSTEM ASSESSMENT RESULTS.

Based on a combination of current reservoir and watershed area conditions, existing potential contaminant sources, and the level of source protection measures currently in place, the source water assessment for this watershed system indicates that it has an overall Moderate risk of contamination from any identified potential sources of contamination. The assessment findings for the Trap Falls Reservoir System are summarized in Table 2, which lists current conditions in the source water area and recommendations or opportunities to enhance protection of this public drinking water source. A listing of potential contaminant source types in the area, if present, can be found in Table 3. A summary of source water area features is shown in Table 4. It should be noted that this rating does not necessarily imply poor water quality or ongoing violations of the Connecticut Public Health Code.

The assessment of this and other comparable watershed areas throughout Connecticut generally finds that adopting recommendations similar to those presented in Table 2 could reduce the susceptibility of most surface water sources to potential sources of contamination.

Table 2 **Source Water Assessment Findings and Source Protection Opportunities For the Trap Falls Reservoir System**

Assessment Category	Conditions as of June 2002	Recommendations and Source Protection Opportunities
Environmental Sensitivity Factors	Predominant watershed topography characterized by gentle slopes Reservoirs have moderate to high capacity to support excessive growths of algae and plankton	Monitor runoff during heavy precipitation events Monitor reservoir nutrient levels for source waters classified as eutrophic or mesotrophic.
Contaminants Detected in Untreated Source Water	None Click here to review EPA's current drinking water standards	Encourage homeowners to adopt residential best management practices that minimize the use of hazardous materials or generation of hazardous waste in the watershed.
Potential Risk Factors	Potential contaminant sources present in the watershed More than 50% of land for this source water area is undeveloped, which could present a risk if developed inappropriately. Major state or interstate roadways present in the watershed Known contaminant release points present in the watershed	Periodically inspect these sites and maintain a water quality monitoring program consistent with the level of potential risk Proactively work with local officials and developers to insure that only low-risk development occurs within the watershed area Monitor road salt and herbicide usage along these roadways and address potential for hazardous material spills resulting from vehicular accidents Maintain an adequate level of surveillance around contaminant release point sites to insure that surface water contamination is not occurring Encourage residential property owners to inspect and regularly cleanout onsite septic systems and replace underground fuel storage tanks with above ground tanks.
Source Protection Needs Factors	Less than 20% of watershed area owned by public water system Less than 20% of the land in the source water area exists as preserved open space Local regulations or zoning initiatives for the protection of public drinking water sources do not exist Comprehensive plans and policies for the protection of public drinking water sources do not exist at the local government level Point source pollution discharge points not present in this watershed area	Increase ownership or control of watershed area whenever land becomes available for purchase or support land acquisition by public or private conservation/preservation organizations Support and encourage the acquisition of open space land within the watershed area Establish local watershed protection regulations to protect public drinking water sources Develop or enhance local governmental plans and policies that favor the protection of public drinking water sources Support environmental awareness and education within the community.

Inventoried significant potential contaminant sources present in the Trap Falls Reservoir System source water area are listed in Table 3. While these facilities, if present, have the potential to cause surface water contamination; there is no indication that they are doing so at this time.

Table 3 – Summary of Significant Potential Contaminant Types in the Trap Falls Reservoir System Source Water Area

Category	Subcategory	Number of SPCS Types
Waste Storage, Handling, Disposal	Hazardous Waste Facilities	4
	Solid Waste Facilities	1
	Miscellaneous	0
Bulk Chemical, Petroleum Storage	Underground Storage Tanks	8
	Tank Farms	0
	Warehouses	0
Industrial Manufacturing / Processing	Chemical & Allied Production	0
	Chemical Use Processing	1
	Miscellaneous	0
Commercial Trades and Services	Automotive and Related Services	2
	Chemical Use Services	0
	Miscellaneous	1
Miscellaneous	No Identifiable SPCS Type	1
Agricultural Operations	Animal or Livestock Waste Handling	0
	Pesticide Storage or Application	1
Total Number of Contaminant Types		19

Prominent features of the Trap Falls Reservoir System source water area are summarized in Table 4.

Table 4 - Features of the Trap Falls Reservoir System

Location of Watershed Area	Monroe, Shelton, and Trumbull
Name of Reservoir(s) and Diversion(s)	Far Mill, Means Brook and Trap Falls reservoirs
Number and Type of Public Drinking Water Reservoirs or Diversions in the Watershed	1 Distribution and 2 Storage
Trophic Status of Reservoir(s)	1 Mesotrophic and 2 Eutrophic
DEP Surface Water Classification	AA
Watershed Area (total acreage)	9,883 acres
Preserved Land in the Watershed [a]	1,948 acres
Predominant Watershed Topography	gentle slopes
General Land Use and Land Cover in the Watershed [b]	
-Urban - Commercial or Industrial	1.6%
-Urban - Residential	19.7%
-Agricultural	11.6%
-Undeveloped Land	67.1%
Significant Potential Contamination Sources	
-Number of inventoried facilities in source water area [c]	13
-Count of inventoried facilities per square mile	0.84 per sq mile
-Number of contaminant types within inventoried facilities	19
Number of Contaminant Release Points Inventoried by CTDEP [d]	2

[a] Preserved land includes any combination of land owned by the public water supply; state forest and parklands, and municipally or privately held land designated as open space.

[b] Based on statewide data layer of land use and land cover developed by UCONN Dept of Natural Resource Management Engineering and Connecticut DEP satellite imagery averaged across the entire watershed.

[c] Inventoried facilities reflect the actual number of SPCS sites present in the source water area, which may have more than 1 type of contaminant present at the facility.

[d] Sites or locations with documented accidental spills, leaks or discharges. While these sources, which are cataloged and tracked by the Connecticut DEP, may fall within a public drinking water supply source water area, they may or may not presently be discharging to the environment or causing contamination of a public drinking water source.