



City of Bristol Comprehensive Zoning Update

Date: 8/12/2024

Recommendation 11a: Provide reference to the Aquifer Protection Area Regulations

Purpose: Ensure that projects comply with the City's Aquifer Protection Regulations.

Description: Provide a reference to the Aquifer Protection Regulations within the Zoning Regulations and require that Site Plans indicate the status of a property located within an aquifer protection area.

Geographic Extents: Aquifer Protection Areas as indicated on the City's Zoning Map.

Potential Impacts: May increase compliance with the Aquifer Protection Regulations.

Context: Aquifer Protection Areas are delineated by the State and define the land area that contributes ground water to active public water supply wells (or well fields) that serve more than 1,000 people. Bristol's Aquifer Protection Area is shown on its zoning map, which comprises of a large area in the northeastern part of town. Mapping provided by the state also indicates that there is an Aquifer Protection Area on the west side of the City that is primarily located within Plymouth but extends into Bristol in proximity of Mathews Street.

Recommended Zoning Amendments:

1. Add a new section, Section 15.7 Aquifer Protection Areas as follows:

15.7 Aquifer Protection Areas

Properties located in the Aquifer Protection Area (the Final Adopted Level A Aquifer Protection Area (APA) mapped by CT DEEP and as amended) shall be subject to the Aquifer Protection Area Regulations of the City of Bristol.

2. Add a requirement to Section 16.3.5 Site Plan Requirements, Item A, that the Site Plan survey identify whether the site is located within an Aquifer Protection Area (APA) and if partially located within an APA, provide the boundaries of such on the Site Plan survey as follows:

16.3.5 Site Plan Requirements

- A. The Site Plan shall be based upon an accurate and up-to-date Class A-2 survey of the property prepared in accordance with the standards as defined in the Code of Recommended Practice for Standards of Accuracy of Surveys and Maps, as prepared and adopted by the Connecticut Association of Land Surveyors, Inc., on September 13, 1984, as may be amended. The survey map shall be certified, signed and sealed by a registered land surveyor licensed to conduct business in Connecticut. If a separate survey map is used, a copy shall be attached to the Site Plan. **The survey shall identify if a property is located within an aquifer protection area and shall delineate an aquifer protection area boundary that traverses the property (if applicable).**



City of Bristol Comprehensive Zoning Update

Date: 8/12/2024

Recommendation 11b: Establish an Aquifer Protection Overlay Zone

Purpose: Ensure that projects comply with the City's Aquifer Protection Regulations.

Description: Provide a reference to the Aquifer Protection Regulations within the Zoning Regulations and require that Site Plans indicate the status of a property located within an aquifer protection area.

Geographic Extents: Aquifer Protection Areas as indicated on the City's Zoning Map.

Potential Impacts: May increase compliance with the Aquifer Protection Regulations.

Context: Aquifer Protection Areas are delineated by the State and define the land area that contributes ground water to active public water supply wells (or well fields) that serve more than 1,000 people. Bristol's Aquifer Protection Area is shown on its zoning map, which comprises of a large area in the northeastern part of town. Mapping provided by the state also indicates that there is an Aquifer Protection Area on the west side of the City that is primarily located within Plymouth but extends into Bristol in proximity of Mathews Street.

Recommended Zoning Amendments:

1. Establish a new overlay district (Aquifer Protection Overlay District) and add a new section (Section 9.4 aquifer Protection Overlay District) to the Regulations.
2. Provide the existing Aquifer Protection Area Regulations within Section 9.4 of the Zoning Regulations.
3. Update the Aquifer Protection Area Regulations to ensure consistency with the 2010 CT DEEP Model Municipal Regulations for Aquifer Protection Areas.



City of Bristol Comprehensive Zoning Update

Date: 8/12/2024

Recommendation 12: Increase the permitted height of Ground Mounted Solar Energy Systems.

Purpose: Increase the maximum height of ground mounted solar energy systems to allow for their use over parking areas.

Description: Ground mounted solar energy collection systems are a permitted accessory use, but ground mounted systems are limited in height to 14 feet, which restricts their use above parking areas. This recommendation would allow ground mounted systems to be up to 20 feet in height to allow for use over parking areas.

Geographic Extents: All zoning districts.

Potential Impacts: The deployment of ground mounted systems of large parking areas may have an adverse visual impact in some contexts.

Context: Ground mounted solar energy systems are increasingly being deployed over larger parking areas. According to a 2021 study published in the official journal of the International Solar Energy Society, Connecticut could generate more than one third of the state's annual electricity consumption with solar canopies built over large, existing parking lots. Examples in Connecticut include at Westfarms Mall, which recently constructed a four-acre array over an existing parking lot.

Recommended Zoning Amendments:

Amend Section 5.4.9.C as follows:

C. Shall not exceed **twenty (20) feet** in height including all supporting structures.



City of Bristol Comprehensive Zoning Update

Date: 8/12/2024

Recommendation 13: Strengthen regulations for the protection and planting of trees.

Purpose: Protect Bristol's tree cover and native trees and provide tree cover over areas of impervious surface to reduce urban heat-island effects.

Description: This recommendation seeks to strengthen the requirements for the preservation of trees, replacement of trees, and planting of new trees.

Geographic Extents: All zoning districts

Potential Impacts: Planting of trees adds a marginal amount to development costs and increases maintenance costs (watering of trees, leaf removal, pruning, etc.).

Context: A mature tree canopy is characteristic of New England communities. Preserving that canopy and replacing trees lost to development important to preserving the identity of Bristol. Trees also play an important role in mitigating the causes and effects of climate change by absorbing carbon dioxide and replenishing oxygen and cooling the local environment. Tree replacement requirements are common to zoning regulations. Payment in-lieu-of programs and tree funds are more commonly used in large cities such as New York City, which has a Parks Tree Fund that receives payments from those required to plant new street trees by the City's zoning regulations but cannot plant on-site. The City of Hartford has a tree ordinance that requires the inch-per-inch replacement of trees 13 inches or more or payment into a tree account.

Recommended Zoning Amendments:

- By municipal ordinance, create a tree fund for receipt of payment in-lieu-of planting with funds used exclusively for the planting and maintenance of trees in rights-of-way and on City land.
- Revise Section 11.1 Landscaping Requirements as follows:

11.1.2 General Requirements

- ~~K. Where feasible, existing trees shall be saved; if grading is required in their vicinity, trees shall be appropriately welled or mounded to protect them from damage.~~
- ~~L. No trees five inches or greater in caliper as measured three feet above ground level shall be removed unless so approved by the Commission.~~
- K. Existing non-invasive trees in good condition over 12 inches in caliper shall be preserved unless approved for removal by the Land Use Department. If such tree or trees are removed, the tree(s) shall be replaced with native trees (per UCONN's Native Tree and Shrub Availability List) on one-for-one basis. Replacement trees shall be planted on-site. If on-site planting is demonstrated to be partially or wholly infeasible, required trees may be planted off-site. Newly planted trees shall be a minimum of 2 inches in caliper (if deciduous) or 6 feet tall (if evergreen) and shall be maintained until successfully established. Trees that are not successfully established within one year of planting shall be replaced with a tree of the same or greater caliper or height. Trees planted as required by other sections of these regulations may be counted towards this requirement.
- L. Payment in-lieu-of planting may be provided if the required planting of replacement trees cannot fully or partially be conducted on-site, or if planting cannot be conducted at an off-site location. A payment of \$500 per required tree not planted shall be provided to the City of Bristol.



City of Bristol Comprehensive Zoning Update

Date: 8/12/2024

Recommendation 14: Provide a Sustainability Incentive

Purpose: Provide an incentive for sustainable development to conserve resources, reduce stormwater runoff, reduce light pollution, reduce urban heat island effect, and encourage low-carbon forms of transportation.

Description: This recommended amendment would provide a coverage incentive for a non-single-family or duplex development that scores above a specified level by providing sustainable features.

Geographic Extents: All zoning districts

Potential Impacts: No adverse impacts

Context: Connecticut General Statutes Section 8-2(c)(4) enables municipalities to provide incentives in their zoning regulations for: solar and other renewable forms of energy; combined heat and power; water conservation, including demand offsets; and energy conservation techniques.

Recommended Zoning Amendments:

- Add Section 15.9 Sustainability Incentives as follows (see next page):



15.9 Sustainability Incentives

The inclusion of sustainable elements may be applied to increase the maximum lot coverage permitted.

15.9.1 Eligibility

All proposed uses except for single-family and duplex uses that are not included in a subdivision application shall be eligible for a lot coverage increase as permitted by this section.

15.9.2 Review

The review of project scoring and awarding of the incentive shall be conducted by the reviewing authority (Commission or Zoning Enforcement Officer) for the permit or application type required for the proposed use.

15.9.3 Coverage Increase

The maximum lot coverage shall be increased by the following amount based upon a project's score:

Points Earned	Coverage Increase Permitted
500-999	5%
1,000-1,499	10%
1,500-1,999	15%
2,000-2,499	20%
2,500+	25%

15.9.4 Maintenance and Improvements

- A. Projects shall be built and maintained in good faith. Elements of the project receiving points shall be maintained for the life of the project but may be improved to a higher, more sustainable standard.
- B. Failure to maintain elements of a project awarded points shall result in the project being non-conforming with the coverage standards of these regulations if the project exceeds the coverage limit of the zoning district in which it is located.
- C. Projects shall be subject to periodic inspection by the Zoning Enforcement Officer to ensure adequate maintenance of sustainable elements for which points have been awarded.

15.9.5 Scoring

- A. Calculation of Score: Scoring shall be conducted in accordance with the table below. Points earned shall be multiplied by the sustainability factor, which shall equal the score for each item. The award is based upon the total score, which is a sum of the score for each item.
- B. Documentation: The applicant is responsible for providing documentation that confirms the performance of the proposal in accordance with the scoring matrix and shall submit a scoring matrix with calculations completed. The Commission or Zoning Enforcement Officer may request additional data, calculations, or professional certification to confirm the score(s) provided by the applicant prior to increasing the permitted lot coverage.



Sustainability Element	Points	Sustainability Factor (multiply points by this factor to determine score)
LEED	Points shall be awarded in accordance with projects designed to meet the following LEED certification levels: Certified=70, Silver=80, Gold=90, Platinum=100	5
Tree Cover	1 point for each 1% of lot area with contiguous tree cover	5
Native Plants	1 point for each 1% of shrubs and trees that are CT native plants as listed on the UCONN Plant Database	1
On-Site Capture of Stormwater	1 point for each 1% of stormwater captured on-site during ten-year storm event.	2
On-Site Solar	1 point for each 1% of energy use to be supplied by solar	2
Geothermal Heating and Cooling	1 point for each 1% of heating and cooling to be supplied by a geothermal source.	2
Gray Water	1 point for each 1% of site water use provided by gray water	2
Pervious, Porous, or Permeable Pavement*	1 point for each 1% of pavement surface comprised of pervious, porous, or permeable pavement.	1
Green Roof*	1 point for each 1% of roof area covered by a green roof	1
Electric Vehicle Charging	1 point for each 1% of parking spaces provided with an electric vehicle charger	2
Bicycle Parking	1 point for each 1% of bicycle parking spaces (indoor or outdoor) relative to vehicular parking spaces (for example, if 100 parking spaces are provided and 10 bicycle spaces are provided, 10 points are awarded)	2
Public Sidewalks	1 point for each 1% of frontage with public sidewalks (includes driveway crossing if sidewalks remain at grade and the sidewalk material continues across the driveway)	1
Dark Sky Compliance	1 point for each 1% of outdoor fixtures that are Dark Sky Approved by Dark Sky International	1

*Projects claiming a coverage offset as permitted by Sections [insert reference to green roof and pervious surface coverage offsets if approved] shall not be awarded points for green roofs or pervious, porous, or permeable pavement.



City of Bristol Comprehensive Zoning Update

Date: 8/12/2024

Recommendation 15: Provide Riparian Corridor Protection Regulations

Purpose: Expand protections for riparian corridors and to better protect those resources, the associated habitats, and water quality of the Long Island Sound.

Description: The intent of this regulation is to better regulate and prohibit development in close proximity of the City's rivers, brooks, and streams such as the Pequabuck River, Copper Mine Brook, Polkville Avenue Brook, Birge Pond Brook, etc.

Geographic Extents: All zoning districts

Potential Impacts: Multiple properties/structures will become non-conforming thus limiting expansion of those properties within riparian zones. The improvement of existing structures that do not expand ground area coverage within the riparian zone would be permitted.

Context: The State of Connecticut requires that communities take action to protect the water quality of the Long Island Sound and waterbodies with connections to the Sound. WestCOG's "The Case for Riparian Corridor Protection" documents the importance of protecting riparian zones and their role in the water quality of the Long Island Sound. In other states, such as Massachusetts, the Massachusetts Rivers Act establishes a 200-foot-wide riparian zone on each side of rivers and streams that restricts development in those areas with the exception of single-family homes and associated accessory uses. The riparian zone is 25 feet in a small number of urban communities.

Recommended Zoning Amendments:

1. Provide a new section: Section 15.8 Riparian Corridor Protection (see next page).



15.8 Riparian Corridor Protection

These regulations establish riparian zones along riparian corridors in the City to protect the water quality of those waterbodies and the habitats associated with them. Properties and projects subject to these regulations may also be subject to the Inland Wetlands and Watercourses Regulations of the Conservation Commission of the City of Bristol.

15.8.1 Applicability

- A. A riparian zone shall be provided adjacent to brooks, streams, and rivers.
- B. Intermittent streams and brooks shall not be subject to these regulations.

15.8.2 Riparian Zone Establishment

The riparian zone shall be 25 feet as measured from the mean annual high-water line or from the visible edge of the waterbody if a mean annual high-water line cannot be determined.

15.8.3 Prohibited Uses in Riparian Zone

The following uses shall be prohibited within the riparian zone:

- A. Principal buildings, additions to existing buildings, or detached accessory buildings including but not limited to garages and sheds.
- B. Impervious surfaces including but not limited to paved parking areas, driveways, athletic courts, terraces, and pools.

15.8.4 Permitted Uses in Riparian Zone

The following uses shall be permitted in the riparian zone provided that the zone is not disturbed, filled, or improved except in support of the permitted use:

- A. Any activity for the purposes of environmental impact mitigation or restoration activities including, but not limited to, stormwater management, habitat management, riparian zone restoration or wetland restorations.
- B. Boat facilities, public trails, and greenways.
- C. Agricultural activities permitted by Connecticut General Statutes Section 22a-40.
- D. Construction and operation, by water companies (as defined by Section 16-1 of Connecticut General Statutes) or by municipal water supply systems (as provided for in Chapter 102 of the Connecticut General Statutes) of dams, reservoirs and other facilities necessary to the impounding, storage and withdrawal of water in connection with public water supplies except as provided in Sections 22a-401 through 22a-410 of the Connecticut General Statutes.

15.8.5 Existing Uses

Uses and structures within the riparian zone existing as of [insert date of adoption] shall be non-conforming to these regulations and may not be expanded in ground area within the riparian zone.



City of Bristol Comprehensive Zoning Update

Date: 8/12/2024

Recommendation 16: Update Soil and Erosion Control Regulations.

Purpose: Update the regulations to provide references to current State guidelines.

Description: Provide updated references to the 2024 Connecticut Guidelines for Soil Erosion and Sediment Control. Remove references to the Connecticut Stormwater Quality Manual, which is not directly applicable to this section.

Geographic Extents: All zoning districts

Potential Impacts: None

Context: The State has recently updated its Guidelines for Soil Erosion and Sediment Control, which became effective in 2024.

Recommended Zoning Amendments:

1. Update Section 15.1.1 as follows:

15.1.1 Purpose

This Section is designed to further the purposes set forth in Section ~~22a-326~~ **22a-329** of the Connecticut General Statutes relative to soil conservation in the State of Connecticut

2. Update Section 15.1.5 as follows and remove reference to the Stormwater Quality Manual as it contains no guidance on soil erosion and sediment control.

15.1.5 Erosion and Sediment Control Plan

A Soil Erosion and Sediment Control Plan (hereinafter referred to as a "Control Plan") shall contain proper provisions to adequately control accelerated erosion and sedimentation and to reduce the danger from storm water runoff on the proposed site based on the best available technology. For methods and practices necessary for certification, **Chapter 3 of** the "Connecticut Guidelines for Soil Erosion and Sediment Control (~~2002~~) **(2024)**" as amended, published by the Connecticut Council on Soil and Water Conservation, as well as the "Connecticut Stormwater Quality Manual (2004)", as may be amended, shall be utilized.



City of Bristol Comprehensive Zoning Update

Date: 8/12/2024

Recommendation 17: Amend Removal of Earth Materials and Filling of Land Regulations.

Purpose: Improve language of the regulations for removal of earth materials and filling of land to provide more clarity.

Description: Amend multiple items in Section 15.2 Removal of Earth Materials and Section 15.3 Filling of Land.

Geographic Extents: All zoning districts

Potential Impacts: None

Context: N/A

Recommended Zoning Amendments:

1. Amend Section 15.2.2 General Provisions as follows to provide more clarity:

- ~~A. Except as otherwise provided herein, there shall be no removal of earth materials from any property in any zoning district.~~
- A. The removal of earth materials shall be conducted in accordance with Sections 15.2.3 through Section 15.2.7 below.

2. Amend Section 15.2.3 as follows to refer to the proper permit type:

15.2.3 ~~Temporary~~ Zoning Permit for Earth Removal up to 400 Cubic Yards

- B. Where a bona fide construction project, as evidenced by an approved Site Plan, an approved subdivision plan or a valid Building Permit, requires the removal from the property of not more than 400 cubic yards of earth materials, the Zoning Enforcement Officer may issue without a bond a ~~temporary~~ Zoning Permit for earth removal. Such permit shall be valid for a period of 60 days. Such time period may be extended once by the Zoning Enforcement Officer for an additional period of 60 days.
 - C. The Zoning Enforcement Officer may issue without a bond, a ~~temporary~~ Zoning Permit to excavate and move up to 1,500 cubic yards of earth materials in any zoning district to an adjacent property, provided public roads shall not be used. Such permit shall be valid for a period of 60 days.
3. Amend Section 15.2.5.B as follows to apply the buffer area requirement only to earth removal operations, not to the removal of earth material associated with site development:

- D. Buffer ~~Areas~~ area requirement for Earth Removal Operations.



4. Amend Section 15.2.6.E to require reporting over a full 12-month period and refer to proper permit type.

E. Every 12 months after the approval of a Special Permit for earth removal, the applicant shall submit to the Commission information prepared, signed and sealed by a surveyor and an engineer registered and licensed to practice in the State regarding the progress of the operation, including the amount of material removed, existing contours and cross-sections in the area excavated during the preceding ~~six month~~ **12-month** period. Failure of the applicant to provide the Commission with such information within 30 days after the end of the 12-month period shall be deemed sufficient cause for the Commission to revoke the ~~Temporary~~ **Zoning** Permit.

5. Amend Section 15.3.1 General Provisions as follows to provide clarity regarding the requirement for filling of land:

A. The filling of land shall require ~~the~~ **a Site Plan application and Site Plan** approval ~~of~~ **by** the Commission unless the filling shall be for the express purpose of preparing the land for immediate development in accordance with an approved subdivision plan or an approved Site Plan, or the amount of fill to be deposited shall be less than 400 cubic yards in any 12-month period, or the deposit shall be one of topsoil for the purpose of improving an agricultural use.



City of Bristol Comprehensive Zoning Update

Date: 8/12/2024

Recommendation 18: Update Stormwater Management Regulations

Purpose: Update regulations to provide updated references, more clarity regarding process, and provide updates recommended by the City's Stormwater Management Plan.

Description: Provide references to the 2024 Connecticut Stormwater Quality Manual and add maintenance plan requirements as recommended by the City's Stormwater Management Plan.

Geographic Extents: All zoning districts

Potential Impacts: None

Context: The State has recently updated its Stormwater Quality Manual, which became effective in 2024.

Recommended Zoning Amendments:

1. Update Section 15.5.3 as follows to reference the 2024 Connecticut Stormwater Quality Manual:

15.5.3 Requirements

A. Unless modified by the Commission by Special Permit as provided for in Section 15.5.4 below, any development within the City of Bristol shall implement the following provisions of Chapter 7 of the ~~2004~~ **2024** Connecticut Stormwater Quality Manual (CSQM), as may be amended:

1. Pollutant Reduction as provided in ~~Section 7.4~~ **Standard 1** of the CSQM.
2. Groundwater Recharge and Runoff Volume Reduction as provided in ~~Section 7.5~~ **Standard 1** of the CSQM.
3. Peak Flow Control for the 2-year, 10-year, 25-year, 50-year, and 100-year storm events as provided in ~~Section 7.6~~ **Standard 2** of the CSQM ~~(and the LID appendices)~~ **and Chapter 5**.

B. In the design of a stormwater management system, design professionals may utilize low impact development techniques as contained in the Connecticut Stormwater Quality Manual ~~(2004)~~ **(2024)**, as may be amended.

2. Add the following items recommended by the City's Stormwater Management Plan, to Section 15.5.3 Requirements:

- C. All Site Plan and Special Permit applications involving stormwater infrastructure shall provide and require compliance with a long-term maintenance plan and schedule to ensure the performance and pollutant removal efficiency of privately owned retention ponds, detention ponds and other stormwater basins that discharge to or receive discharge from Bristol's municipal separate storm system (MS4) including short-term and long-term inspection and maintenance measures to be implemented by the property owner.
- D. The City is authorized to carry out all inspections, surveillance and monitoring procedures necessary to determine compliance with these regulations and the requirements of the City's MS4 program.



3. Revise Section 15.5.4 Modifications to improve clarity regarding required process.

15.5.4 Modifications

The Commission may, ~~by Special Permit~~ **in the course of a Site Plan or Special Permit approval**, modify the requirements of this Section provided that adequate information has been submitted by the applicant to evaluate the request and: