

Cambridge: street design, parking lot and low impact development review

September 2022

The City of Cambridge administers a Stormwater Management Program in conformance with requirements of the Massachusetts General Permit for stormwater discharges from Small Municipal Separate Storm Sewer Systems (MS4). As an element of that program, the City is required to evaluate current street design and parking lot guidelines and other local requirements that affect the creation of impervious cover during Year 4 of the MS4 permit. Section 2.3.6(b) of the permit specifies:

“This assessment shall be used to provide information to allow the permittee to determine if changes to design standards for streets and parking lots can be made to support low impact design options. If the assessment indicates that changes can be made, the assessment shall include recommendations and proposed schedules to incorporate policies and standards into relevant documents and procedures to minimize impervious cover attributable to parking areas and street designs.”

If changes to regulations and design standards/guidelines can be made the City must implement the recommendations in accordance with the schedules contained in the assessment. The assessment must also be included as part of the City’s Stormwater Management Plan.

Similarly, Section 2.3.6(c) of the MS4 permit requires the City to assess existing regulations to determine the feasibility of making certain practices allowable when appropriate site conditions exist. These “low impact development” practices specifically include:

- Green roofs
- Infiltration practices such as rain gardens, porous and pervious pavements, and other designs to manage stormwater using landscaping and structured or augmented soils; and
- Water harvesting devices such as rain barrels and cisterns, and the use of stormwater for non-potable uses.

The purpose of the analysis is to determine if the above low impact development practices are allowed and under what circumstances. If not allowed, what are the circumstances that hinder use of the practices and what changes in regulations are appropriate to optimize use of such practices. As with the street/parking analysis discussed above, the City is to establish recommendations and an implementation schedule.

The City will be responsible for reporting in our MS4 annual report on the implementation status for both assessments including any planned or completed changes to local regulations and guidelines. MS4 annual reporting is a required submittal to US EPA and the Massachusetts Department of Environmental Protection. This report discusses the City’s approach, results, and recommendations of the required evaluations.

Methodology

The City of Cambridge has actively been reviewing its goals, policies and priorities for growth and development through rigorous planning studies and including extensive scientific and engineering

evaluations including Resilient Planning, Climate Change Vulnerability Assessment, Vision Zero, Envision Cambridge and the Urban Forest Master Plan amongst others. The City Manager appointed a Climate Resilience Zoning Task Force (Task Force) representing a variety of community stakeholders and perspectives to work through resiliency elements raised during the planning processes with the input of the appropriate City agencies and departments. Many of these studies have identified low impact development practices as a direct or co-benefit for achieving resiliency goals and what impediments may exist.

The City's planning and development policies include an array of regulations, guidelines, and plans intended to promote sustainability objectives. The ordinances, regulations and planning efforts reviewed for this report are summarized below.

Planning efforts:

- [Envision Cambridge](#): In 2015 the City embarked upon a comprehensive planning process to create a sustainable culture. In 2019 the City released Envision Cambridge, a blueprint for the City's growth and change. The goals and strategies laid out in the *Envision Cambridge* report, and the specific action ideas will guide policymakers, City staff, the Planning Board, and other boards and commissions as they develop area and topical plans, write legislation, craft budgets, consider development proposals, advocate for regional action, design infrastructure, make policy. One of the Strategies to achieve the City's climate and environment goals laid out in the *Envision Cambridge* plan is to restore and grow Cambridge's green infrastructure and tree canopy, and support biodiversity. This plan was released in May 2019.
- [Alewife District Plan](#), this plan aims to set a vision for future development to transform the district into a fully functioning urban neighborhood and advance citywide goals, including economic opportunity, climate change resilience, and walkability. This plan was released in the Fall 2019.
- The [Net Zero Action Plan](#), sets a framework for neutralizing annual greenhouse gas emissions from buildings throughout the City by 2050. [The Net Zero Task Force](#) completed a comprehensive 5-Year Review of the Plan to respond to current scientific, policy, technology, and equity considerations. The [Net Zero Action Plan 5-Year Update Report](#) was completed in December 2021 and presented to City Council in January 2022.
- [Resilient Cambridge Plan](#) and its associated [technical reports](#) are the City's plan to make the city more prepared for and resilient to the impacts of climate change while improving the quality of life and enhancing the city. The Resilient Cambridge Plan released in July 2021 is the City's roadmap to reduce the risks from climate change and prepare the community for impacts that cannot be avoided. The Plan focuses on the threats from increasing temperature, precipitation, and sea level rise. Using projections to 2030 and 2070 based on the best available science, the City conducted a "climate stress test" -- the [Climate Change Vulnerability Assessment](#) (CCVA) -- to understand the potential impacts on the community if no action is taken.
- [GI analysis and UHI modeling](#) This study was completed in November 2017 and was conducted to address the City of Cambridge's questions about the extent to which the natural environment (such as trees) and engineered ecosystems (such as green infrastructure) can be effectively used

to mitigate precipitation flooding and increased urban heat island effects caused by climate change. This technical memorandum presents the methodology and findings related to green infrastructure analysis and urban heat island (UHI) modeling that was conducted for the Alewife area as part of the Climate Change Preparedness and Resiliency (CCPR) Plan. The goals of this analysis are primarily two-fold:

- Identify Green Infrastructure (also referred to as Best Management Practices BMPs) solutions that are most applicable for the Alewife area given the site-specific constraints and the variety of land use types in this area, and assess how these solutions may result in flood mitigation, water quality improvements and urban heat island reduction.
 - Determine how UHI effects under existing and future climate change conditions can be mitigated by increasing urban tree canopy cover and white roofs.
- [Gray and Green Infrastructure Analysis for The Port](#) The City of Cambridge conducted a Climate Change Vulnerability Assessment (CCVA) to identify areas that are more susceptible to climate risks of flooding and extreme heat. From the CCVA report, the City identified Alewife and The Port as two areas to develop pilot neighborhood plans for climate resiliency. This technical report released in May 2019 serves as an appendix to [The Port Preparedness Plan](#) report, summarizing the approaches and assumptions to analyze the performance of gray and green infrastructure strategies suitable for The Port neighborhood in the City of Cambridge. Some of the key questions that this study seeks to answer include what types of gray infrastructure strategies can mitigate present and future flooding in The Port, how can green infrastructure strategies be effectively combined with gray infrastructure to mitigate flooding, and to what extent are these green infrastructure strategies successful in terms of mitigating urban heat island (UHI) effect in The Port and improving water quality.
 - [Urban Forest Master Plan Technical Report](#) (Nov 2019) This study builds upon the findings of the Cambridge Climate Change Vulnerability Assessment (CCVA) and attempts to deepen the City's understanding of the risks to the urban forest in the years ahead. The strategies developed in this study were conceived to support the goals of the Climate Change Preparedness and Resiliency (CCPR) study, specifically building infrastructural, economic, and social resilience that integrates the built and natural environments.
 - [Healthy Forest Healthy City](#) (September 2020) This action plan sets out a 5-year plan to guide City agencies, working together, toward reaching the strategic goals set out in the 2019 Urban Forest Master Plan Technical Report (UFMP).
 - [Climate Resilience Zoning](#) A Climate Resiliency Zoning Task Force was created in 2019 to build upon many of the planning efforts described above to advise on development standards that can be incorporated into the Zoning Ordinance that would result in new development that is more resilient to climate change risks. Some of these evaluations have included how green infrastructure helps the City achieve its goals for resiliency and where other options are more viable. Through the various public planning efforts development obstacles to implementation of resiliency goals were identified and the zoning task force was created to make recommendation

for changes in zoning to facilitate implementation of the goals identified in the reports. A [Final Report](#) was released by the Task Force in February 2022.

- [Bicycle Plan](#) In 2020 the City updated it's 2015 [Cambridge Bicycle Plan](#). The updated plan lays out a framework to enable people of all ages, abilities and identities to bicycle safely and comfortably throughout the City.
- [Open Space Plan](#) in 2021 the City kicked off a planning process to guide future work around all of Cambridge's parks and open spaces. *Draft* goals for the plan include protecting and enhancing natural areas and leveraging parks and open spaces to foster climate resilience, and design and program open spaces with a changing climate.
- [Five Year Sidewalk and Street Reconstruction Plan](#) The Five Year Plan was updated in 2022 and is a comprehensive plan for designing streets that safely accommodates all user- pedestrians, bicyclists, motorists, and public transportation users of all ages and abilities. One of the goals of the Five Year Plan is to improve the water quality of stormwater before discharging to outfalls. The City is incorporating green infrastructure on projects, as conditions and space allow.
- [Ten Year Sewer and Drain Infrastructure Plan](#) The 10 Year Plan was updated in 2022 and is a strategic plan to manage the infrastructure improvements of the sewer and storm water mains, manholes, catch basins, pumping stations and CSO outfalls that carry waste and storm water to treatment plants and discharge locations. This 10-year plan serves as a guidance document to prioritize construction and rehabilitation of these complex systems. Managing stormwater quality and quantity is one of the goals of the plan and green infrastructure and low impact practices are used in design where feasible.
- [Parking Study](#) City staff are currently undertaking a Parking Study to consider updating the City's parking regulations, including zoning along with other parking-related ordinances and policies. The purpose of this study is to make sure that parking regulations fulfill the City's goals for traffic, greenhouse gas emissions, climate resilience, housing, economic development, and equity. Also, the City Council is currently considering adoption of a zoning petition that would eliminate minimum parking requirements. The Council has also discussed establishing new parking maximum parking limitations.

Municipal Codes and Regulations review:

- Tree Protection Ordinance ([Title 8 – Health and Safety Chapter 8.66](#)) establishes tree removal requirements for significant trees including mitigation. Recognizes the importance of Exceptional Trees.
 - [Tree Protection Ordinance Regulations](#) outlines identification of significant trees, how to measure a significant tree, mitigation for removal of a significant tree and tree removal permit requirements.
- [Title 10 – Vehicles and Traffic](#) includes requirements for the construction of commercial parking and requirements to promote alternative modes of transportation and restrict parking in new/redevelopment, specifically:

- Commercial Parking Space Permits ([Chapter 10.16](#))
 - Vehicle Trip Reduction Ordinance ([Chapter 10.17](#))
 - Parking and Transportation Demand Management Planning; Parking Space Registration ([Chapter 10.18](#))
- [Title 12 – Streets, Sidewalks and Public Places](#) includes requirements for street excavations, obstructions, placement of structures on the sidewalks or within the streets generally. It also includes [Chapter 12.22 - Cycling Safety Ordinance](#) which seeks to eliminate fatalities and injuries on City streets in accordance with the City's Vision Zero and transportation mode-shift goals through safety improvements and the construction of a connected network of permanent separated bicycle lanes across the City. The benefits of this Chapter are intended to flow to all roadway users. For every project undertaken pursuant to this Chapter's requirements, the City is committed to a design that best achieves the City's Vision Zero and mode-shift goals, recognizing, in particular, that this will require improving efficiency and reliability for bus users and safety for pedestrians.
- [Title 13 – Public Services](#) includes [Chapter 13.16 Wastewater and Stormwater Drainage Systems](#) which authorizes the Commissioner of Public Works to regulate and promulgate regulations and guidance documents regulating activities related to public and private sewers and drains that connects to the City's sewer or drain system.
 - [Wastewater and Stormwater Drainage Use Regulations](#) ensures proper and safe operation of the City's Sanitary Sewers, Combined Sewers and Stormwater Drains by regulates direct and indirect discharges to these systems.
 - [Land Disturbance Regulations](#) established regulations governing stormwater management standards for land disturbance including but not limited to disturbance from development and redevelopment projects. Low Impact Development site planning and design strategies must be implemented unless Infeasible in order to reduce the discharge of stormwater from development sites.
 - [Wastewater and Stormwater Management Guidance](#) The objective of this document is to provide guidance for construction projects and development and redevelopment projects in the City to ensure that measures are taken throughout the project to address erosion, nonpoint source pollution, and flood control.
- [Title 17 - Zoning](#) – the purpose of this Ordinance to lessen congestion in the streets; conserve health; to secure safety from fire, flood, panic and other danger; to provide adequate light and air; to prevent overcrowding of land; to avoid undue concentration of population; to encourage housing for persons of all income levels; to facilitate the adequate provision of transportation, water supply, drainage, sewerage, schools, parks, open space and other public requirements; to conserve the value of land and buildings, including the conservation of natural resources and the prevention of blight and pollution of the environment; to encourage the most rational use of land throughout the city, including the encouragement of appropriate economic development, the protection of residential neighborhoods from incompatible activities and including the consideration of plans and policies, if any, adopted by the Cambridge Planning Board, and to preserve and increase the amenities of the City. Specifically:
 - [Article 5.000](#) Development Standards include set back, height and open space requirements.

- [Article 6.000 Off Street Parking and Loading Requirements and Nighttime Curfew on Large Commercial Through Trucks](#) in the [Zoning Ordinance](#) establishes a minimum and maximum set of parking spaces for projects based on land use, zoning districts and size of the development. Changes to minimum and maximums established in Article 6.000 are waived or changed within special zoning or overlay districts within the City (see Articles 12.000 through 20.000).
- [Article 22.000 of the Zoning Ordinance](#), promotes environmentally sustainable and energy-efficient design and development practices. The regulations apply to new construction and to renovation projects of a significant size. Specifically:
 - The [Green Building Requirements in Article 22.2](#) ensure that major new projects and substantially rehabilitated buildings in the City of Cambridge are planned, designed and constructed in a sustainable way so as to minimize adverse environmental impacts. This review applies to projects of 25,000 square feet or more.
 - The [Green Roof Requirements in Article 22.3](#) removed potential impediments to the development of green roof systems on new and existing buildings by clarifying that such systems should not count against a building's Gross Floor Area, and by providing for limited access and enjoyment of green roofs by occupants of a building, and to require new buildings of substantial size to include vegetation and/or solar energy roofing systems on much or most of the available roof area.

In addition to the above the City reviewed current practices through a Center for Watershed Protection's evaluation tool for "Highly Urbanized Areas" entitled [The Code and Ordinance Worksheet: A Tool for Evaluating the Development Rules in Your Community](#) (<https://owl.cwp.org>). The matrix is attached to this review as Attachment 1. The City's assessment through this tool was used to gage the City's overall strength/weakness and not to guide changes given the extensive planning and public discourse around development as discussed above generally throughout the City. The City's development practices did however perform well with a score >80%.

Analysis and Recommendations

Low Impact Development

The City of Cambridge is a highly urbanized city of over 118,000 residents. As of 2020 Cambridge had a population density of 18,529 persons per square mile (equivalent to 29 people per acre). As of 2020, Cambridge is the ninth most densely populated city in the United States.

As a densely developed community there are many complex and competing goals for how the land will be used. The City is working to enhance environmental quality for all and decrease its impact on the climate and regional ecosystems. As a highly developed city, redevelopment offers the primary mechanism for change.

Cambridge's policies for land development are aimed to prepare and adapt the City to the effects of climate change, and support best practices for overall environmental performance, which includes the reduction of impervious cover and the use of low impact development practices.

Low impact development practices are considered alongside the city's other goals as discussed throughout the planning processes identified above. In February 2022 the [Climate Resilience Zoning Task Force](#) (Task Force) release a report that includes recommendation for an effective approach to regulating urban development in a way that mitigates the identified impacts and risks of on-going climate change. Specifically, the Task Force was charged with discussing climate change vulnerabilities identified in the Cambridge Climate Vulnerability Assessment, reviewing recommendations from the Climate Change Preparedness and Resilience planning effort and other related initiatives discussed above, and recommending development standards to incorporate into Cambridge's Zoning Ordinance.

One of the key components of the Task Force's recommendations is the use of the performance based Cool Factor. The Cool Factor calculates a weighted score based on site features including mature tree preservation, new tree planting, ground-level vegetation coverage, green roofs, shade structures, and the use of high solar-reflectivity paving materials. Aside from one prerequisite – the use of high-solar-reflectivity roof coverings – property owners are given the flexibility to choose which Cool Factor strategies are most appropriate for their project if they meet the minimum weighted score requirement or "Cool Score" applicable to that site. The Task Force is recommending this strategy because traditional zoning does not adequately encourage overall cooling performance of buildings and sites. In addition, members acknowledged that this approach would work in tandem with Cambridge's other regulations, including existing zoning requirements for open space and permeable area as well as stormwater management regulations that combine green and grey infrastructure.

Street and Parking Lot Design

In 2016 Cambridge adopted a Complete Streets Policy. This includes incorporating Complete Streets principles into all publicly and privately funded projects and requiring all project designs to follow the most up-to-date design guidance from government agencies and nationally recognized organizations. Green infrastructure and other low impact design practices are incorporated into roadway designs for public and private property.

The Climate Resiliency Zoning Task Force discussed how revising the City's parking requirements in Article 6.000 of the Zoning Ordinance would make Cambridge more resilient to climate change. By taking such steps as eliminating minimum parking requirements, lowering maximum parking requirements, and reducing parking ratios, the City would decrease the amount of land used for the storage of vehicles. This would likely reduce the amount of impervious surface and create more opportunities for green infrastructure, which would improve the City's ability to withstand the impacts of increased flooding and increased heat. Although the Task Force decided not to include these strategies in its final recommendations the ongoing [Parking Study](#) is evaluating parking requirements throughout the City.

Timeline and Implementation

Street and Parking Lot Design: Parking Study

City Council passed orders for the City to review parking minimums and maximums to "The city should review its maximum parking requirement periodically to ensure they meet our transportation and

environmental goals”. City staff began looking at parking policies and regulation in Summer 2021 to better understand how they align with city’s policy goals and community needs and began a parking policy study in September 2021 that includes engaging with the community to understand current/future needs, engaging the community in process/tradeoffs and developing a framework for analysis to align policies and regulations with city goals and community needs. Staff is currently developing a draft report that will be transmitted to the City Council for their consideration for further action. It is anticipated that by the fall of 2022 the City Council will consider whether to change parking requirements to:

- eliminate minimum parking requirements for new buildings
- create new parking maximums

Low impact Development: Climate Resilience Zoning Task Force (Task Force) Recommendations

The final phase of the Task Force’s process involved working to develop recommended changes to the Cambridge Zoning Ordinance that are informed by the principles and factors described above and would achieve the Land Use and Development Objectives described above. A final report regarding the work and recommendations of the Task Force was released in February 2022.

The consensus of the Task Force was to set new flood resilience and heat resilience standards in the case of larger-scale development (25,000 square feet or more) and newly-constructed buildings of all sizes, but not to impose requirements that could be overly burdensome to owners of smaller sites making alterations or additions to existing buildings. Task Force members recognized the importance of promoting climate resilience citywide through zoning; however, they believed that the City needs to further study how requirements could be tailored to existing buildings on smaller parcels to ensure that they do not place undue burdens on small property owners.

City staff are currently in the process of translating the Task Force’s recommendations into zoning amendments. Staff expect to submit a formal zoning petition to the City Council for consideration in the fall of 2022. The Task Force considered all types of development and all parts of the city. The final zoning recommendations are citywide in scope and would create standards for all new development, large and small, and specific types of additions and alterations to existing buildings and uses. The Task Force also considered both prescriptive- and performance-based approaches to creating new zoning standards, ultimately gravitating toward performance-based standards.

Cambridge: street design, parking lot and low impact development review

ATTACHMENT 1: The Code and Ordinance Worksheet: A Tool for Evaluating the Development Rules in Your Community

The COW Scoring Spreadsheet was designed to help communities evaluate their local development regulations to identify revisions that allow or require site developers to minimize impervious cover, conserve natural areas, and use runoff reduction practices to manage stormwater. For detailed instructions on using the COW Scoring Spreadsheet, see *The Code and Ordinance Worksheet: A Tool for Evaluating the Development Rules in Your Community*. This document is available for free download on <https://owl.cwp.org> and was published by the Center for Watershed Protection in 2017.

Copyright © 2017 Center for Watershed Protection, Inc.

Material may be quoted provided credit is given



Name of Code/Ordinance	Link to Code or Ordinance Online	Notes
Massachusetts General Laws Chapter 148 Section 28 Chapter 148 Laws and 527 CMR 1 Fire Code	https://www.cambridgema.gov/cfd/firedeptdivisions/firepreventionbureau/Regulations	not reviewed
Wetland Protection Act Regulations 310 CMR 10.00	https://www.mass.gov/regulations/310-CMR-1000-wetlands-protection-act-regulations	Related to "Buffer" management and conservation commission permitting
Uniform State Plumbing Code 248 CMR 10.00	https://www.mass.gov/doc/248-cmr-1000-uniform-state-plumbing-code-0/download	not reviewed
Tree Protection Ordinance (Chapter 8.66)	https://www.cambridgema.gov/-/media/Files/publicworksdepartment/Forestry/treedinancedocuments/treeprotectionordinanceamendment.pdf	<p>8.66.020 - Statement of Purpose.</p> <p>The City Council hereby finds that the preservation of existing trees and the promotion of new tree planting is a public purpose that protects the public health, welfare, environment and aesthetics of the City of Cambridge and its citizens.</p> <p>The urban forest serves a wide variety of functions, which promote the health, safety and welfare of residents. These functions include:</p> <p>A.Conserving energy, by providing shade and evaporative cooling through transpiration; B.Improving local and global air quality by absorbing carbon dioxide and ozone, absorbing particulate matter, and producing oxygen; C.Reducing wind speed and directing air flow; D.Reducing noise pollution; E.Providing habitat for birds, small mammals, and other wildlife; F.Reducing storm runoff and the potential for soil erosion; G.Increasing real property values; and H.Enhancing visual and aesthetic qualities that attract visitors and businesses.</p>
Tree Protection Ordinance Regulations	https://www.cambridgema.gov/-/media/Files/publicworksdepartment/Forestry/treedinancedocuments/treeprotectionordinanceregulations.pdf	Establishes procedures to comply with the Tree Protection Ordinance.
Parking (Chapter 10.12)	https://library.municode.com/ma/cambridge/codes/code_of_ordinances?nodeId=TIT10VETR_CH10.12PA	Allows for the issuance of residential parking stickers
Commercial Parking Space Permits (Chapter 10.16)	https://library.municode.com/ma/cambridge/codes/code_of_ordinances?nodeId=TIT10VETR_CH10.16CO_PASPPE	This ordinance controls the number of commercial parking spaces within the city. Commercial Parking space" means a parking space available for use by the general public at any time for a fee. This ordinance establishes a process for the permitting, transfer and creation of commercial parking spaces. It does not include additional design requirements.
Vehicle Trip Reduction Ordinance (Chapter 10.17)	https://library.municode.com/ma/cambridge/codes/code_of_ordinances?nodeId=TIT10VETR_CH10.17VETRREOR	Require actions by new development projects to Increase the use of commuting alternatives and reducing the number of trips by single-occupancy vehicles to reduce vehicle miles travelled, traffic and associated air pollution, fuel use, noise, and congestion.
Parking and Transportation Demand Management Planning; Parking Space Registration (Chapter 10.18)	https://library.municode.com/ma/cambridge/codes/code_of_ordinances?https://library.municode.com/ma/cambridge/codes/code_of_ordinances?nodeId=TIT10VETR_CH10.18PATRDEMAPLPASPPE	10.18.010 - Purpose.(a)It is the purpose of this Chapter to regulate and control atmospheric pollution from motor vehicles by formalizing parking and transportation demand management planning, programs, and coordination which

		<p>have been ongoing for a number of years. This Chapter will reduce vehicle trips and traffic congestion within the City, thereby promoting public health, safety, and welfare and protecting the environment. This Chapter requires parking and transportation demand management (PTDM) plans for commercial parking facilities and other types of non-residential parking facilities over a specified size as set forth in 10.18.050 and 10.18.070. This Chapter also establishes a process whereby City officials will be able to track the number, use and location of off-street parking spaces in the City.(b)A Parking and Transportation Demand Management Planning Officer will be designated by the City Manager with the responsibility for reviewing, conditioning, approving and/or denying PTDM plans. Any project subject to the requirements of this Chapter shall not be qualified to receive a permit from the Planning Board, a commercial parking permit from the Commercial Parking Control Committee, a special permit or variance from the Board of Zoning Appeal, a building permit from the Commissioner of Inspectional Services, a certificate of occupancy from the Commissioner of Inspectional Services, or an operating license from the License Commission absent written approval of its PTDM plan from the PTDM Planning Officer or evidence of registration of its parking spaces with the Department of Traffic, Parking, and Transportation. The PTDM Ordinance is a national model for improving mobility and access, reducing congestion and air pollution, and increasing safety by promoting walking, bicycling, public transit, and other sustainable modes. The ordinance was adopted in 1998 and made permanent in 2006.</p>
Traffic Regulations	https://www.cambridgema.gov/traffic/aboutus/trafficregulations	Cambridge follows Complete Street Principals in street/ROW design
Street and Sidewalk Use Regulations (Chapter 12.16)	https://library.municode.com/ma/cambridge/codes/code_of_ordinances?nodeId=TIT12STSIPUPL_CH12.16STSIUSRE	This section/regulation does not include design requirements
Cycling Safety Ordinance (Chapter 12.22)	https://library.municode.com/ma/cambridge/codes/code_of_ordinances?nodeId=TIT12STSIPUPL_CH12.22CYSAOR	Whenever Improvements are made to a City-owned street under the Five-Year Sidewalk and Street Reconstruction Plan, the City Manager shall cause such Improvements to comply with the Cambridge Bicycle Plan, or any plan superseding it; provided, that if Improvements are made to a segment of the Separated Network, a Permanent Separated Bicycle Lane with Adequate Directionality shall be installed along that segment. This Chapter seeks eliminate fatalities and injuries on City streets in accordance with the City's Vision Zero and transportation mode-shift goals through safety improvements and the construction of a connected network of permanent separated bicycle lanes across the City. The benefits of this Chapter are intended to flow to all roadway users. For every project undertaken pursuant to this Chapter's requirements, the City is committed to a design that best achieves the City's Vision Zero and mode-shift goals, recognizing, in particular,

		that this will require improving efficiency and reliability for bus users and safety for pedestrians.
Wastewater and Stormwater Drainage Systems (Chapter 13.16)	https://library.municode.com/ma/cambridge/codes/code_of_ordinances?nodeId=TIT13PUSE_CH13.16WASTDRSY	The ordinance allows the Commissioner of Public Works to regulate Combined Sewers, Land Disturbance Activity, Private Combined Sewers, Private Sewers, Private Stormwater Drains, Public Combined Sewers, Public Sewers, and Public Stormwater Drains and any other equipment or installations of any description now or in the future connected to the City's Wastewater System or Stormwater Drainage System. The Commissioner of Public Works shall have authority to promulgate regulations and guidance documents regulating all activities in any way related to the uncovering, excavating over, blocking access to, making any connection with or opening into, altering, or disturbing, or in any way directly or indirectly using the city's Wastewater System or Stormwater Drainage System, and shall establish permit requirements for all such activities and take necessary and appropriate enforcement action to prohibit or remedy any such unpermitted activity. These regulations include: Wastewater and Stormwater Drainage Use Regulations, Land Disturbance Regulations, and Wastewater and Stormwater Management Guidance documents.
Wastewater and Stormwater Drainage Use Regulations	https://www.cambridgema.gov/-/media/Files/publicworksdepartment/stormwatermanagement/wastewaterandstormwaterdrainageusersfinal_june302021_signed.pdf	These Regulations are intended to protect the public health, safety and welfare and the environment and to ensure proper and safe operation of the City's Sanitary Sewers, Combined Sewers and Stormwater Drains by regulating the direct and indirect discharge of Waste, stormwater and pollutants to the City's Wastewater and Stormwater Drainage systems. These Regulations are also intended to prohibit and remove illicit connections and unauthorized discharges to the City's Stormwater Drainage system. This includes the legal authority to carry out all inspection, surveillance and monitoring procedures necessary to comply with this Regulation
Land Disturbance Regulations	https://www.cambridgema.gov/-/media/Files/publicworksdepartment/stormwatermanagement/dpwlnddisturbanceregs_final_june302021_signed.pdf	Regulations governing stormwater management standards for land disturbance including but not limited to disturbance from development and redevelopment projects.
Wastewater and Stormwater Management Guidance	https://www.cambridgema.gov/Departments/publicworks/Initiatives/stormwatermanagement/developersandcontractors	This guidance document is under revision and has been reviewed for consistency with LID practices and no impediments have been identified.

Green Streets Guidance Document	https://www.cambridgema.gov/-/media/Files/publicworksdepartment/stormwatermanagement/Resources/greenstreetsguidancedocument.pdf	This document provides a guide to Cambridge for systematically integrating green infrastructure into roadway projects, even those with very small or no design budgets. It describes design considerations for successful implementation of green infrastructure within existing rights of ways
Cambridge Zoning Ordinance	https://library.municode.com/ma/cambridge/codes/zoning_ordinance	The Cambridge Zoning Ordinance is the municipal legal framework that regulates urban development in the city. It is complementary to other city ordinances as well as state laws and codes related to building and development. Articles specifically reviewed for this report include: Article 5.000 - Development Standards; Article 6.000 - Off Street Parking and Loading Requirements and Nighttime Curfew on Large Commercial Through Trucks; Article 11.000 - Special Regulations; Article 12.000 - Planned Unit Development; Article 13.000 - Planned Unit Development Districts; Article 14.000 - Mixed Use Development District: Kendall Center; Article 15.000 - Cambridgeport Revitalization Development District; Article 16.000 - North Point Residence, Office and Business District; Article 17.000 - Special Business, Office and Industrial Districts; Article 18.000 Section 18.10 - Traffic Mitigation Requirements; Article 19.000 - Project Review; Article 20.000 - Overlay Districts; Article 22.000 - Sustainable Design and Development
Green Roof Amendment	https://library.municode.com/ma/cambridge/codes/zoning_ordinance?nodeId=ZONING_ORDINANCE_ART22.000SUDEDE_22.30GRRO	A section within Article 22.000 Sustainable Design and Development. Amended Section 22.30 Green Roofs and add new definitions to Article 2.000 of the Zoning Ordinance The purpose of this Section is to remove potential impediments to the development of green roof systems on new and existing buildings by clarifying that such systems should not count against a building's Gross Floor Area, and by providing for limited access and enjoyment of green roofs by occupants of a building, and to require new buildings of substantial size to include vegetation and/or solar energy roofing systems on much or most of the available roof area.
<p>Design Guidelines and Area Plans Referenced in the Zoning Ordinance</p> <p>The Zoning Ordinance refers to urban design plans and guidelines that apply to certain parts of the city or to certain categories of development. When a project is required to undergo design review (for example, if it requires a special permit from the Planning Board), it is important to review the plans and guidelines that are applicable to that area or development type and to demonstrate how the proposed development conforms to those plans and guidelines.</p>		
Kendall Square Design Guidelines (2013)	https://www.cambridgema.gov/-/media/Files/CDD/Planning/Studies/K2C2/finalreports/k2c2_kendall_final_design.pdf	A major goal of the Kendall Square Central Square Planning Study is to enhance the quality. There is no mention of street design requirements of public street and park spaces. Buildings and private open spaces adjacent to streets and parks have a significant impact on adjacent public spaces through their physical design and internal uses, particularly at ground level. Therefore, the design guidelines focus heavily on relationships between private buildings/open spaces and public streets/parks. Four distinct types of streets and edges deserve different

		criteria, addressed separately in the guidelines: Major Public Street, Secondary Streets, Campus streets, and Park Edges
Volpe Site Design Guidelines (2017)	https://www.cambridgema.gov/-/media/Files/CDD/ZoningDevel/DesignGuidelines/guidelines_Volpe_site_20210319.pdf	Streets and open spaces should create an arrangement of urban blocks, which should generally be small to maximize permeability through the site. p10: Façade-to-façade dimensions should be no wider than necessary. p.13: Service yards and other paved surfaces should be as small as possible, and should not undermine highly desired and sensitive pedestrian routes. Large vehicular areas such as service yards should maximize the use of permeable pavers.
Central Square Design Guidelines (2013)	https://www.cambridgema.gov/-/media/Files/CDD/Planning/Studies/K2C2/finalreports/k2c2_central_design_final.pdf	
Eastern Cambridge Planning Study (2001)	https://www.cambridgema.gov/-/media/Files/CDD/Planning/Studies/ECAPS/ecaps_report_2001.pdf	
Eastern Cambridge Design Guidelines (2001)	https://www.cambridgema.gov/-/media/Files/CDD/Planning/Studies/ECAPS/guidelines_ecaps_2001.pdf	
East Cambridge Development Review Process and Guidelines (1985)	https://www.cambridgema.gov/-/media/Files/CDD/ZoningDevel/DesignGuidelines/guidelines_ecambridge_1985.pdf	
Draft Central Square Development Guidelines (1989)	https://www.cambridgema.gov/-/media/Files/CDD/ZoningDevel/DesignGuidelines/guidelines_central_sq_1989.pdf	
South Cambridgeport Development Guidelines (1992)	https://www.cambridgema.gov/-/media/Files/CDD/ZoningDevel/DesignGuidelines/guidelines_cport_south_1992.pdf	
University Park at MIT: Urban Design Guidelines (1987)	https://www.cambridgema.gov/-/media/Files/CDD/ZoningDevel/DesignGuidelines/guidelines_univer_park_1987.pdf	
Cambridgeport Blue Ribbon Committee (1986)	https://www.cambridgema.gov/-/media/Files/CDD/Planning/Studies/Cambridgeport/cport_blue_ribbon_report_1986.pdf	
Harvard Square Development Guidelines (2002)	https://www.cambridgema.gov/-/media/Files/CDD/ZoningDevel/DesignGuidelines/guidelines_harvard_sq_2002.pdf	

North Massachusetts Avenue Urban Design Guidelines (1986)	https://www.cambridgema.gov/-/media/Files/CDD/ZoningDevel/DesignGuidelines/guidelines_nmassave_1986.pdf	
Concord-Alewife Planning Study and Design Guidelines (2006)	https://www.cambridgema.gov/-/media/Files/CDD/ZoningDevel/DesignGuidelines/guidelines_conale_2006.pdf	
Institutional Growth Management Plan	https://www.cambridgema.gov/CDD/zoninganddevelopment/Zoning/designguidelines	
Design Guidelines for Dormers (1996)	https://www.cambridgema.gov/-/media/Files/CDD/ZoningDevel/DesignGuidelines/guidelines_dormer_1996.pdf	
Planning Efforts		
Resilient Cambridge Plan (2021)	https://www.cambridgema.gov/Departments/CommunityDevelopment/ResilientCambridgePlan	<p>Resilient Cambridge is the City's plan to make the city more prepared for and resilient to the impacts of climate change while improving the quality of life and enhancing the city. The Resilient Cambridge Plan is the City's roadmap to reduce the risks from climate change and prepare the community for impacts that cannot be avoided. The Plan focuses on the threats from increasing temperature, precipitation, and sea level rise. Using projections to 2030 and 2070 based on the best available science, the City conducted a "climate stress test" -- the Climate Change Vulnerability Assessment (CCVA) -- to understand the potential impacts on the community if no action is taken.</p> <p>Starting with the CCVA as the technical foundation, two neighborhood plans for the Alewife area and The Port were developed to inform the citywide plan. Public meetings, workshops, focus groups, and surveys and a range of technical studies were conducted to generate the content for the Plan.</p> <p>Resilient Cambridge is organized around four categories of strategies: Closer Neighborhoods, Better Buildings, Stronger Infrastructure, and Greener City. The strategies are meant to work together and complement each other. Strategies are also recommended at the scales of sites and buildings, neighborhoods, city, and region. And there are roles for all parts of the community -- residents, institutions, government, and businesses. To be successful, everyone must do their part and collaborate.</p> <p>Resilient Cambridge consists of:</p> <ol style="list-style-type: none"> 1. The Plan 2. Resilient Cambridge Handbook 3. Technical reports 4. Summary report <p>While Resilient Cambridge represents the roadmap for moving forward on climate change preparedness and resilience, there</p>

		are many actions already in progress. Resilient Cambridge is also coordinated with other important plans and programs including Envision Cambridge, the Urban Forest Master Plan, infrastructure plans and projects, the Net Zero Action Plan, and the Climate Resilience Zoning Task Force.
Cambridge Open Space Plan (2009 - 2016)	https://www.cambridgema.gov/-/media/Files/CDD/ParksandOpenSpace/OSPlanning/OpenSpacePlan/osplan_2010_complete.pdf	Cambridge is home to over 80 parks, playgrounds, and open spaces. Each plays an important role in keeping Cambridge healthy, equitable, and sustainable. In 2021 the City's Community Development Department (CDD) kicked off a planning process to guide future work around all of Cambridge's parks and open spaces. Development of this plan includes the evaluating of resiliency opportunities including: for tree plantings and greening, Infrastructure to mitigate impacts of climate change, and spaces to cultivate social resilience. https://www.cambridgema.gov/CDD/parks/osplanning/openspaceplan
Envision Cambridge (2019)	http://envision.cambridgema.gov/wp-content/uploads/2019/06/201906_EnvisionCambridge-Final-Report.pdf	This plan sets Cambridge on a path to support housing affordability, promote economic development, improve environmental sustainability and resiliency, enhance the public realm, and create social and economic opportunities. Includes the Development of the Alewife District Plan: https://www.cambridgema.gov/CDD/News/2019/10/~/_media/E2335363BFA149E29C6BE57727A09872.ashx
Climate Change Vulnerability Assessment & Neighborhood Plans	https://www.cambridgema.gov/CDD/Projects/Climate/climatechangersilienceandadaptation	Based on the best available science, the City of Cambridge has committed to prepare the community for the unavoidable impacts of climate change. The City will continue to work on reducing its contribution of greenhouse gas emissions, which are the primary cause of climate change, in an effort to help slow the rate and extent of impacts. But it is clear that some impacts are already occurring and more is to come. To establish a technical foundation for the Resilient Cambridge Plan, Cambridge conducted a rigorous climate change vulnerability assessment, focusing on the risks from increasing temperatures, precipitation, and sea level. The assessment sought to identify Cambridge's key physical and social vulnerabilities. The findings are available in Climate Change Vulnerability Assessment (CCVA) Report - Part 1 and Part 2, which are posted under the CCVA Report tab. To inform the citywide Resilient Cambridge Plan, the City developed two neighborhood climate resilience plans for the Alewife area and The Port.
The Port Preparedness Plan	https://www.cambridgema.gov/-/media/Files/CDD/Climate/CCPR/ccprtheportplan/ccprtheportfinalpages52819processed.pdf	Part of the Climate Change Vulnerability Assessment & Neighborhood Plans the Gray and Green Infrastructure Analysis for The Port: https://www.cambridgema.gov/-/media/Files/CDD/Climate/CCPR/ccprtheportplan/theportccprappendix1_finalv2_processed.pdf
The Alewife Preparedness Plan	https://www.cambridgema.gov/-/media/Files/CDD/Climate/CCPR/ccpralewifepreparednessplan_cambridge.pdf	Part of the Climate Change Vulnerability Assessment & Neighborhood Plans the Green Infrastructure Analysis & UHI Modeling Appendix to Alewife Preparedness Plan:

		https://www.cambridgema.gov/-/media/Files/CDD/Climate/CCPR/ccpralewifeappendixbgianalysisanduhimodeling_processed.pdf
The Net Zero Action Plan	https://www.cambridgema.gov/-/media/Files/CDD/Climate/NetZero/2021planupdate/netzeroactionplan5yearupdatereport.pdf	https://www.cambridgema.gov/CDD/Projects/Climate/netzerotaskforce
Urban Forest Master Plan Technical Report	https://www.cambridgema.gov/Departments/publicworks/Initiatives/urbanforestmasterplan	Healthy Forest Healthy City
Cambridge Bicycle Plan	https://www.cambridgema.gov/CDD/Transportation/gettingaroundcambridge/bikesincambridge/bicyclenetworkplan	
Climate Resilience Zoning	https://www.cambridgema.gov/CDD/projects/Zoning/climateresiliencezoning	
Parking Study	https://www.cambridgema.gov/Departments/communitydevelopment/parkingstudy	
Five Year Sidewalk and Street Reconstruction Plan	https://www.cambridgema.gov/-/media/Files/publicworksdepartment/Engineering/5yearstreetsidewalkplan/cambridge5yp_v1_2022_accessible.pdf	
Ten Year Sewer and Drain Infrastructure Plan	https://www.cambridgema.gov/-/media/Files/publicworksdepartment/Engineering/10yearsewerplan/sewer10yp_v2_final_accessible.pdf	
Green Streets Guidance Document	https://www.cambridgema.gov/-/media/Files/publicworksdepartment/stormwatermanagement/Resources/greenstreetsguidancedocument.pdf	

Local, State, and Federal Authorities Responsible for Development in Your Community

Development Responsibility		State/Federal	County	Municipal
Sets road standards	Agency:			Traffic, Parking & Transportation
	Contact Name:			Joe Barr
	Phone/email			jbarr@cambridgema.gov
Review/approves subdivision plans	Agency:	N/A	N/A	N/A
	Contact Name:			
	Phone/email			
Establishes zoning ordinances	Agency:		N/A	Community Development Dept
	Contact Name:			Jeff Roberts
	Phone/email			jroberts@cambridgema.gov
Establishes subdivision ordinances	Agency:	N/A	N/A	N/A
	Contact Name:			
	Phone/email			
Reviews/establishes stormwater management or drainage criteria	Agency:	MassDEP/EPA	N/A	Dept Public works
	Contact Name:	Laura Schifman/Newton Tedder		Kathy Watkins
	Phone/email	laura.schifman@mass.gov / tedder.newton@epa.gov		kwatkins@cambridgema.gov
Provides fire protection and fire protection code enforcement	Agency:		N/A	Cambridge Fire Department Fire Prevention Bureau
	Contact Name:			Deputy Fire Chief Brandon Hugh
	Phone/email			617-349-4967
Oversees buffer ordinance	Agency:		N/A	N/A
	Contact Name:			
	Phone/email			
Oversees wetland protection	Agency:	MassDEP	N/A	Conservation Commission
	Contact Name:			Jennifer Letourneau
	Phone/email			jletourneau@cambridgema.gov

Establishes grading requirements or oversees erosion and sediment control program	Agency:		N/A	DPW Engineering
	Contact Name:			James Wilcox
	Phone/email			jwilcox@cambridgema.gov
Reviews/approves septic systems	Agency:		N/A	N/A
	Contact Name:			
	Phone/email			
Review/approves utility plans (e.g., water and sewer)	Agency:		N/A	DPW Engineering
	Contact Name:			James Wilcox
	Phone/email			jwilcox@cambridgema.gov
Reviews/approves forest conservation/tree protection plans	Agency:		N/A	DPW Forestry
	Contact Name:			Andrew Putnam/Dave Lefcourt
	Phone/email			aputnam@cambridgema.gov dlefcourt@cambridgema.gov
Administers health and safety codes	Agency:		N/A	Cambridge Public Health dept
	Contact Name:			Sam Lipson
	Phone/email			slipson@challiance.org

INSTRUCTIONS: For all "Yes" answers, enter the associated number of points in the Yes column. BLUE questions are worth two points; ORANGE questions are worth 0.5 points. All other questions are worth 1 point. If the answer is "No", "N/A" or if the codes do not address the question, put an "X" in the appropriate column. Use the "Notes" column to record details of the code language and reference the relevant code and section.

Question		Yes	No	N/A	Codes are Silent	Notes
Code Area						
Street Width						
1	Is the minimum roadway width allowed for streets in neighborhoods with low volume roads (less than 400 average daily trips according to AASHTO, 2001) between 18-22 feet (where bicycle lanes are not present)?			1		
2	Are curb extensions that narrow the roadway (such as pinchpoints, gateways, and chicanes) permissible?	1				
3	Are permeable paving materials allowable on low-use streets and/or parking lanes?	1				
Street Length						
4	Does the subdivision, Planned Unit Development, or Unified Development ordinance identify reducing street length as a goal of neighborhood street design?			1		
Right-of-Way Width						
5	Is the recommended right-of-way width for a low-volume residential street less than 45 feet?	1				
6	Does the code allow utilities to be placed under the paved section of the right-of-way to limit clearing and allow compact development footprint?	1				
7	If street trees are required, is the planting area required to be at least 6 feet to provide sufficient rooting space to support large trees?	1				
Cul-de-Sacs						
8	Do the street or subdivision standards allow street layouts that minimize the use of cul-de-sacs?					
9	Is the minimum radius for cul-de-sacs 48 feet or less?					
10	Can a landscaped island be created within the cul-de-sac?					
	<i>Yes, and the cul-de-sac must be graded to the island with an overflow to the storm drain system, so that it can be used for stormwater treatment (2 pts.)</i>					
	<i>Yes, but curbing is required or the island must be raised, limiting its use for stormwater treatment (1 pt.)</i>					
11	Are alternative turnarounds such as hammerheads and loop roads allowed?					
	<i>Yes, alternative turnarounds are specifically mentioned in the ordinance with specific design/construction guidance provided by reference</i>					

	<i>Yes, alternative turnarounds are allowed, but no specific guidance provided on design</i>				
Vegetated Open Channels					
12	Are open section vegetated channels allowed where density, topography, soils, and slope permit?	1			
13	Are runoff reduction practices permissible within curb extensions or landscape strips?	1			
Parking Ratios					
14	Do parking ratios reflect local parking demand?				
	<i>Yes, they are based on a local study of parking demand, or are based on ITE or ULI values and adjusted for local conditions.</i>	1			
	<i>No, we simply use the ITE or ULI values, base them on a neighboring community's standards, or we do not know where they came from.</i>				
15	Are parking requirements set as maximums?		1		
Parking Codes					
16	Are shared parking arrangements allowed?				
	<i>Yes, shared parking is allowed by-right (2 pts.)</i>				
	<i>Yes, shared parking is allowed with special exception (1 pt.)</i>	1			
17	Are parking ratios reduced if shared parking arrangements are in place?	1			
18	Is the parking ratio reduced when multi-modal transit (e.g., mass transit, bike share or car share programs) is provided?	1			
19	Can the number of parking spaces be reduced and additional parking be maintained as green space until needed for redevelopment projects?			1	
20	Are parking credits provided when nearby on-street parking is available?		1		
Parking Lots					
21	Is the minimum stall width for a standard parking space 9 feet or less?	1			
22	Is the minimum stall length for a standard parking space 18 feet or less?	1			
23	Is a fixed proportion (eg., 15%) of the spaces at larger commercial parking lots required to have smaller dimensions for compact cars?	1			
24	Can pervious materials be used for parking areas, including spillover or special event parking? (2 pts.)	2			
Structured Parking					
25	Are there any incentives for developers to provide parking within garages rather than surface parking lots?				1
Parking Lot Runoff					
26	Is a minimum percentage of a parking lot required to be landscaped? (2 pts.)	2			

27	Is the use of runoff reduction practices within landscaped areas, setbacks, or parking areas allowed? (give yourself 2 pts.)	2			
28	Are flush curbs and/or curb cuts and depressed landscaped areas allowed so that runoff can be directed into vegetated landscaped islands or runoff reduction practices?	1			
29	Are dimensions for landscaped areas sufficient to plant large trees?				
	<i>Yes, a minimum width 6 feet or greater is specified</i>	1			
	<i>No, a minimum width less than 6 feet is specified</i>				
30	Do vegetated stormwater management areas count toward required landscape minimums?	1			
Open Space Design					
31	Do the ordinances require or allow open space subdivisions?				
	<i>Yes, they are required in a designated open space zoning district (2 pts.)</i>				
	<i>Yes, open space designs are an allowable option (through an overlay zone) (1 pt.)</i>				
32	Is land conservation or impervious cover reduction a major stated goal or objective of the open space design ordinance?				
33	Is a minimum percentage of the buildable portion of the site required to be set aside as open space?				
	<i>Yes, at least 50% (2 pts.)</i>				
	<i>Yes, less than 50% (1 pt.)</i>				
34	Is the open space determined through a stepwise design process where open space is identified first?				
35	Is open space design a by-right form of development versus a more burdensome conditional use or warrant?				
36	Are flexible site design criteria available for developers that utilize open space or cluster design options (e.g., setbacks/lot lines, road widths, lot sizes and shapes)?				
37	Are density bonuses and/or penalties used to encourage use of open space design?				
	<i>Yes, density penalties are given for conventional development. (2 pts.)</i>				
	<i>Yes, density bonuses are provided for open space designs that exceed the minimum requirements for open space protection, up to an established maximum. (2 pts.)</i>				
	<i>Yes, density bonuses are provided for open space designs that exceed the minimum requirements for open space protection, with no cap on density bonuses. (1 pt.)</i>				
Setbacks and Frontages					

38	Are irregular lot shapes (e.g., pie-shaped, flag lots, zipper lots) allowed in the community?	1			
39	Does the code allow for variances to setback and frontage requirements?	1			
Sidewalks					
40	Can minimum sidewalk widths for residential neighborhoods be reduced to 5 feet where safe and appropriate? (2 pts.)				
41	Can alternate pedestrian networks (e.g., paved trails through common areas, walkways and bike trails connecting cul-de-sacs to other streets) be substituted for sidewalks in the right-of-way?				
42	Are alternative sidewalk designs that provide sufficient soil rooting volume for street trees (e.g., pop-outs or bulb-outs, curving sidewalks, tree islands) allowed?	1			
43	Are alternative sidewalk construction materials that increase infiltration allowed?	1			
Driveways					
44	Are minimum driveway widths 9 feet or less (one lane) or 18 feet or less (two lanes)?				
45	Can pervious materials (e.g., grass, gravel, permeable pavers, etc.) be used for residential driveways? (2 pts.)				
46	Can a "two track" design be used for residential driveways?				
47	Are shared driveways permitted in residential developments?				
Open Space Management					
48	Does the open space design ordinance require identification of an entity (e.g., conservation organization, community association) who will be responsible for managing the open space? (2 pts.)				
49	Can open space be managed by a land trust or other qualified public or private land conservation organization (e.g., municipal parks department) through conservation easements or transfer of ownership?				
50	If open space cannot be managed by a third party, are there enforceable requirements to establish an association that can effectively manage the open space?				
51	Are secure and permanent funding arrangements required to be established for the long-term management and maintenance of open space?				
52	Are there standards for the open space requiring interconnections, prioritized lists of resources to be conserved, and access standards?				
53	Are allowable and unallowable uses for open space in residential developments defined?				
54	Are long-term management plans that conserve natural systems required for all open space areas?				

55	Is open space in a natural condition required to be protected in perpetuity by a binding conservation easement or similar legal instrument?					
Rooftop Runoff						
56	Can downspouts be disconnected such that rooftop runoff flows to storage tanks, pervious areas, runoff reduction practices, etc.? (2 pts.)					
57	Do current grading or drainage requirements allow for temporary ponding of stormwater on front yards or rooftops? (2 pts.)	2				Per WPA 310 CMR 10.00
58	Is temporary storage of rainwater in storage tanks (e.g., rain barrels or cisterns) permitted?	1				Per WPA 310 CMR 10.00
59	Do the stormwater BMP design specifications for green roofs address structural concerns (e.g. how to determine design load of roof)?		1			Per WPA 310 CMR 10.00
60	Do local plumbing codes allow harvested rainwater for exterior uses such as irrigation and non-potable interior uses such as toilet flushing?	1				Per WPA 310 CMR 10.00
Buffer Systems						
61	Do the development standards in the community require a vegetated buffer along waterways?	2				Per WPA 310 CMR 10.00
62	Is the definition of waterway, or the regulated buffer, expansive enough to include (check all that apply):					
	<i>Perennial streams (0.5 pts.)</i>	0.5				Per WPA 310 CMR 10.00
	<i>Ephemeral and intermittent streams (0.5 pts.)</i>	0.5				Per WPA 310 CMR 10.00
	<i>Lakes (0.5 pts.)</i>	0.5				Per WPA 310 CMR 10.00
	<i>Estuaries and shorelines (0.5 pts.)</i>	0.5				Per WPA 310 CMR 10.00
	<i>Wetlands (0.5 pts.)</i>	0.5				Per WPA 310 CMR 10.00
	<i>Vernal Ponds (0.5 pts.)</i>	0.5				Per WPA 310 CMR 10.00
63	Is the minimum buffer width 50 feet or more?					
	<i>Yes, width is 100 feet or greater (2 pts.)</i>					
	<i>Yes, width is between 50-99 feet (1 pt.)</i>					
	<i>No, width is < 50 feet</i>		1			Per WPA 310 CMR 10.00
64	Are buffer widths greater for sensitive resources (e.g., designated high quality streams) or in certain zones (e.g., drinking water protection)?	1				Per WPA 310 CMR 10.00
65	Is expansion of the buffer to include adjacent wetlands, steep slopes, or the 100-year floodplain required?	1				Per WPA 310 CMR 10.00
Buffer Management						
66	Does the buffer ordinance specify that a minimum percentage of the buffer be maintained with native vegetation? (2 pts.)	2				Per WPA 310 CMR 10.00
67	Does the buffer ordinance outline prohibited uses and permitted uses that have little impact to the vegetated buffer?	1				Per WPA 310 CMR 10.00
68	Does the ordinance specify enforcement mechanisms?	1				Per WPA 310 CMR 10.00

69	Does the buffer ordinance specify a preference for buffers to be located on a parcel of common ownership (e.g., a homeowners' association)?	1				Per WPA 310 CMR 10.00
Clearing and Grading						
70	Is there any ordinance that requires the preservation of native soils, hydric soils, natural vegetation, or steep slopes at development sites? (2 pts.)	2				Per WPA 310 CMR 10.00
71	Do regulations limit the total portion of the site that can be cleared?	1				Stormwater Control Permit ESC requirements
72	Are the limits of disturbance required to be shown on construction plans and physically marked at the site?	1				Per WPA 310 CMR 10.00
73	Are reserve septic field areas allowed to be left undisturbed until needed?			1		septic systems are not common in Cambridge
Tree Conservation						
74	Is a natural resources inventory required to identify and map natural areas?					
	<i>Yes, and significant natural areas such as high quality forest stands, wildlife habitat and travel corridors, productive cropland, and specimen trees must be identified (2 pts.)</i>					
	<i>Yes, but no requirements to assess resource quality. (1 pt.)</i>	1				
75	Is there an ordinance that requires conservation of some portion of forests, specimen trees, or other native vegetation at development sites?					
	<i>Yes, specific conservation thresholds are identified (2 pts.)</i>	2				
	<i>Answer Yes, no specific conservation thresholds identified (1 pt.)</i>					
76	Do tree conservation requirements identify or reference methods for delineating and protecting the critical root zone of trees (sometimes referred to as "drip line")?	1				
77	Do forest/tree conservation requirements specify planting new trees at sites where none exist?		1			
78	Are trees and native plant materials permissible for landscaping in yards, common areas, and other open spaces?					
	<i>Yes, some portion of landscaping must be include trees and other native vegetation provided in recommended species list. (2 pts.)</i>					
	<i>Yes, trees and native vegetation are allowed per recommended species list (1 pt.)</i>	1				
	<i>No, landscaping ordinance requires turfgrass or includes vegetation height standards that preclude use of native plants</i>					
79	Does the community have an urban forestry plan that supports/is referenced by the landscaping ordinance?	1				

80	Do landscaping requirements identify or reference specifications for soil amendments, planting methods, species selection, and maintenance?	1			
Land Conservation Incentives					
81	Are there any incentives to developers (e.g., open space design, density bonuses, stormwater credits, or expedited design review) to conserve land above and beyond what is already required (e.g., steep slopes, wetlands)? (2 pts.)		1		
82	Is flexibility to meet land conservation requirements (e.g. density compensation, buffer or lot averaging, transferable development rights, off-site mitigation) offered to developers? (2 pts.)				1
Stormwater Outfalls					
83	Does the stormwater code contain special treatment criteria for discharges to impaired or sensitive waters, such as natural wetlands, lakes, trout streams, nutrient-sensitive estuaries, drinking water supplies, etc.? (2 pts.)	2			
84	Does a floodplain management ordinance exist that restricts or prohibits development within the 100-year floodplain? (2 pts.)		1		
85	Is there a local wetland protection ordinance?		1		
Stormwater Codes					
86	Do codes define rainwater harvesting and establish acceptable uses for rainwater (e.g., irrigation and toilet flushing) and corresponding treatment requirements?	1			
87	Does the stormwater code include specific standards to reduce post-construction runoff volume (not just peak rate)?		1		
	<i>Yes, runoff/volume reduction is required for most new development and redevelopment sites (2 pts.)</i>	2			
	<i>Yes, the standards apply to some sites or are included as an alternative compliance method (1 pt.)</i>				
88	Does the code require or have incentives for consideration of runoff reduction concepts early in the site planning process?				
	<i>Yes, there are provisions for a pre-application meeting or similar (2 pts.)</i>				
	<i>Yes, but the meetings are not mandatory for applicants (1 pt.)</i>	1			
89	If the code includes post-construction runoff reduction standards, is there reference to clear, understandable, and local or regionally-based design guidance or stormwater manual?				
	<i>Yes, the code references design guidance or a manual (2 pts.)</i>	2			
	<i>Yes, such a manual exists but it is not referenced in the code (1 pt.)</i>				
90	Are drainage and stormwater treatment standards all in one place within the code and internally consistent?				

guidance is in draft form and requires updating.

		<i>Yes, codes are consolidated and consistent regarding applicability and methods</i>	1			
		<i>No, various code sections are conflicting or inconsistent</i>				
Installation and Maintenance of Practices						
91		Do erosion and sediment control standards specify protection of post-construction practice sites during active construction?				
		<i>Yes, erosion control standards include these provisions (2 pts.)</i>	2			
		<i>Yes, the code is not explicit but it is addressed during plan review (1 pt.)</i>				
92		Does the code mandate performance bonds and periodic inspections to ensure proper installation of stormwater practices based on the approved plans?				
		<i>Yes, the code includes bonding requirements and inspections during stormwater practice installation (2 pts.)</i>	2			
		<i>Yes, the code includes bonding or inspections, but not both (1 pt.)</i>				
93		Does the code include provisions for runoff reduction practice easements, inspector right-of-entry, maintenance agreements, and post-construction inspections?		1		
		<i>Yes, all the provisions are included (2 pts.)</i>				
		<i>Yes, 3 out of the 4 are included (1 pt.)</i>				
Off-Site Compliance						
94		If off-site stormwater compliance is authorized, is some percentage of treatment required on-site?		1		
		<i>Yes, applicants must provide on-site treatment to some level and provide documentation (2 pts.)</i>				
		<i>No, many sites have automatic access to off-site compliance</i>				
		Total Points Achieved	72			
		Total Possible Points	87			
		Final Score (%)	83%			