



Metropolitan Area Planning Council

60 Temple Place, Boston, Massachusetts 02111 617-451-2770 fax 614-482-7185 www.mapc.org

Serving the 101 Cities and Towns in the Metropolitan Boston Region

MEMORANDUM

TO: Jody Kablack, Director of Planning and Community Development, Town of Sudbury
FROM: Christine Wallace, P.E., Senior Regional Planner, MAPC
DATE: June 30, 2009
RE: Low Impact Development Evaluation: Suggested Revisions to Existing Bylaws and Regulations

As the final component of MAPC's stormwater technical assistance project funded by MET, this memorandum evaluates the town of Sudbury's existing local bylaws and regulations to assess their consistency with Low Impact Development (LID) principles. This review is intended to identify areas of the town's local codes that could be modified to promote stormwater management that encourages recharge and employs techniques such as LID. In addition, this memorandum also provides recommendations on how to modify existing codes in the event that design standards or criteria conflict with the recently adopted Stormwater Management Bylaw.

MAPC has reviewed the following Town of Sudbury Bylaws and Regulations for this memorandum:

- Town of Sudbury Zoning Bylaw (Article IX of the Town of Sudbury General Bylaws), last revised April 2008
- Town of Sudbury Site Plan Review Rules and Regulations, last revised March 2004
- Town of Sudbury Planning Board Rules and Regulations Governing the Subdivision of Land, last revised January 26, 1999
- Town of Sudbury Driveway Location Approval Rules and Regulations, last revised January 26, 1998
- Town of Sudbury Wetlands Administration Bylaw Regulations, last revised July 17, 2006
- Rules and Regulations Governing the Subsurface Disposal of Sewage, last revised March 26, 1998
- Town of Sudbury Rules and Regulations for Special Permits in the Water Resource Protection Districts

The Subdivision Rules and Regulations, Zoning Bylaw, and Driveway Regulations would benefit from modifications designed to promote the use of lower impact site design and stormwater management techniques. In general such modifications would reduce impervious area, incorporate more LID stormwater practices (such as bioretention, infiltration, vegetated swales, and filter strips), and better preserve open space. The Cluster Development for subdivisions allowed in the town's Zoning follows many LID principles, but these principles are not required for subdivisions if clustering is not chosen by the developer. This review also found that the Zoning Bylaw, Subdivision Rules and Regulations, Water Resource Protection Regulations, and Wetland Regulations have statements that do not necessarily conflict with the new Stormwater Bylaw, but do not reflect the fact that the stormwater bylaw exists.

Table 1 below provides more specific recommendations on how to further promote LID in the town of Sudbury. Please note that the order of the list is based on general categories and not necessarily the order in the codes.

Table 1: Suggested Revisions to Sudbury’s Bylaws and Regulations to Further Promote Low-Impact Development Principles

| Reference | Topic | Existing Requirement | Recommendations |
|--|--------------------------------------|---|--|
| Subdivision – Section VI.D.2. | Street Design: Width | Residential and collector streets requirement is 24 feet, Streets that require walkway construction may be 20 feet. Greater pavement widths may be required on Feeder streets, Thoroughfares, and Highways as defined in the Sudbury Master Plan. | Residential road widths should be minimized as much as possible. Low-density residential should be 18-22 feet wide. Allow narrow widths where there are no houses, buildings, intersections, or where on-street parking is not anticipated. |
| Subdivision – Section VI.I. – Curbs | Street Design: Edge Treatment | Granite curb required at cul-de-sacs, curves, grades exceeding 3%. Planning Board may waive requirement in some instances. | Curb and gutters should not be required for residential streets. If protection of the roadway edge is a concern, permit alternate methods such as perforated curbs, flush curbs, or other mechanisms. |
| Subdivision – Section V.B.2.f. | Street Design: ROW Width | “The minimum width of street right-of-ways shall be fifty (50) feet. A greater width may be required for principal streets.” | 50 feet is appropriate for a ROW width, but consider making it a maximum rather than a minimum. Utilities should be allowed underneath the pavement. |
| Subdivision – Section V.B.4.f. | Street Design: Cul-de-Sacs | Minimum paved diameter width required is 120 feet. | Minimum diameter should ideally be 70 feet, but up to 90 feet is also acceptable. |
| Subdivision – Section V.B.4 | Street Design: Cul-de-Sacs | No current provisions for a landscaped island | A landscaped island inside should be permitted for all cul-de-sacs, and should allow for vegetated stormwater management in the island. |
| Subdivision – Section V.B.4 | Street Design: Cul-de-Sacs | No current provisions for alternate layouts | Alternate layouts, such as hammerheads or one-way loop streets, should be allowed on short streets in low-density residential areas. |
| Subdivision – Section VI.E. - Drainage | Street Design: Stormwater Management | Catch basins, manholes, and piping required for conveyance | Alternate, open-section drainage methods and materials should be allowed. Design criteria should be established for swales alongside the road for stormwater treatment. This entire section should clarify that the requirements are for conveyance within closed systems, but water quality and quantity BMPs must be in accordance with the Town of Sudbury Stormwater Management Bylaw. |
| Subdivision – Section V.N.1 | Sidewalks: Width | Minimum width of 5 feet | Minimum sidewalk width should be 4 feet or less. |

| Reference | Topic | Existing Requirement | Recommendations |
|---|------------------------------------|--|---|
| Subdivision – Appendix A – Typical Road Cross Section | Sidewalks: Design | Grass strip required between pavement and sidewalk | Consider removing this requirement to reduce ROW width and to allow for alternate drainage options. |
| Subdivision – Section VI.N.3. | Sidewalks: Materials | Gravel sidewalks are allowed in some instances, but there are no provisions for other permeable sidewalk materials. | Permit use of permeable surfaces for sidewalks. |
| Driveway Rules and Regulations – Appendix A | Driveways: Width | Driveways for residential use must be between 10-20 feet. | Minimum driveway width should be 9 feet. |
| Driveway Rules and Regulations – Appendix A | Driveways: Width | Driveways for commercial use must be between 2-040 feet. | Minimum driveway width should be 9 feet for one-way and 18 feet for two-way. |
| Driveway Rules and Regulations – Appendix A & B | Driveways: Materials | No current provisions for pervious materials | Pervious materials should be allowed for single-family home driveways. |
| Driveway Rules and Regulations – Appendix A & B | Driveways: Materials | No current provisions for two-track driveways | Two-track driveways should be allowed for single-family driveways. |
| Subdivision – Section V.D. | Open Space | Park required - at least 5% of the total area. Minimum area for public acceptance is 3 acres. | Add language such as: “Low impact stormwater management techniques such as bioretention areas, rain gardens, vegetated swales, and filter strips may be located within the open space area and count towards the requirement.” |
| Subdivision – Section VI.D.3. | Conservation: Clearing and Grading | “Clearing: The roadway shall be cleared of all obstructions of any kind and evenly graded for a distance of not greater than seventeen (17) feet either side of the centerline...” | Consider replacing that sentence with: : “Clearing within the right of way shall be limited to that which is necessary for the construction of the roadway, drainage systems, sidewalks, and utilities, and to ensure adequate site lines. The developer should seek to retain existing vegetation, including brush and trees, to the extent possible.” |
| Subdivision – Section V.H. | Stormwater Management | “The stormwater management plan shall comply with the Wetlands Administration Bylaw of the Town of Sudbury | Add the language: “...and the Town of Sudbury Stormwater Management Bylaw where applicable.” |
| Subdivision – Section V.H.3. | Stormwater Management | “The selection and design of the stormwater drainage system shall incorporate the currently recognized Best Management Practices of stormwater management...” | Remove the language “this information can be obtained in the Planning Board Office” and replace with “.per the Town of Sudbury Stormwater Management Bylaw. |

| Reference | Topic | Existing Requirement | Recommendations |
|---------------------------------------|---|--|---|
| Subdivision – Section V.H.5. & V.H.6. | Stormwater Management: Plan Contents and Design Standards | “The Stormwater Management Plan must demonstrate...” & “The Stormwater Management Plan shall be designed...” | Consider removing some of the language in these sections and replace with references to the Stormwater Management Bylaw. |
| Subdivision – Section V.H | Stormwater Management | No current provisions for rooftop runoff to vegetated areas | Rooftop runoff should be allowed to discharge to lawn areas and buffers, provided that it ultimately infiltrates. |
| Zoning – Section 3143 | Parking Lot Driveways: Width | For business or industrial use, one lot may have an access drive of at least 24 feet but no more than 40 feet. If used for one-way traffic, minimum is 14 feet. | Minimum driveway width should be 9 ft. for 1-way and 18 ft for 2-way. |
| Zoning – Section 3145 | Parking Lot Driveways: Width | “Interior driveways may be reduced to no less than 20 feet for two-way traffic and 14 feet for one-way traffic.” | Minimum driveway width should be 9 ft. for 1-way and 18 ft for 2-way. |
| Zoning – Section 3310 | Driveways: Common | In all Residence Districts, no driveway or other access to a way shall serve more than two dwellings or other principal, permitted structures, except as provided by special permit issued pursuant to Sections 5300 and 5400. | Consider allowing the use of common driveways for up to four residences. |
| Zoning – Section 3120 | Parking Design: Ratios | 1 space per 200 SF of gross floor area of business and professional office, except in research district (1 per 300 SF) and VBD (1 per 350 SF) | For professional office, minimum should be 1 space per 333 SF of gross floor area (or 3 spaces per 1000 SF). |
| Zoning – Section 3120 | Parking Design: Ratios | 1 space per 180 SF of gross floor area of business and professional office, except in VBD (1 per 300 SF) | For shopping centers, minimum should be 1 space per 222 SF of gross floor area (or 4.5 spaces per 1000 SF). |
| Zoning – Section 3120 | Parking Design: Ratios | Required spaces are minimums. | Consider having parking ratios be a maximum rather than a minimum. |
| Zoning – Section 6.4 | Parking Design: Ratios | No provision for reduction if near mass transit for standard subdivisions | Ratio should be reduced if mass transit nearby |
| Zoning – Section 3122 – Mixed Uses | Parking Design: Ratios and Shared Parking | No explicit provisions or ration reduction for shared parking, “unless clearly demonstrated” | Shared parking arrangements should be encouraged and ratios should be reduced if shared parking arrangements are in place |
| Zoning – Section 3130 | Parking Design: Stall dimensions | Minimum stall dimensions are 9’x18.5’ for a 90-degree angle. | Parking stall maximums should be set at 9’x18’. |

| Reference | Topic | Existing Requirement | Recommendations |
|---|---|---|---|
| Zoning – Section 3131 | Parking Design: Compact Spaces | “Small Car Stalls. In parking facilities containing more than 40 parking stalls or in any Village Business District site, 15 percent of such parking stalls may be for small car use, except for retail store, retail service business or restaurant uses.” | Commercial parking lots should recommend or require at least 30% compact spaces. |
| Zoning – Section 3100 | Parking Design: Pervious Materials | No current provisions for pervious parking lot materials | Pervious materials should be allowed for stalls and spillover areas. Add language such as: “Pervious materials such as porous pavers, paving stones, reinforced grass, and pervious pavement may be allowed in lower volume stalls or overflow parking areas.” |
| Zoning – Section 2600 – Appendix B – Table of Dimensional Requirements | Lot Layout: Setbacks and Frontages | Standard dimensional requirements for varying zoning districts. Cluster Developments (Zoning Section 5100) allow reduced setbacks, frontages, and lot sizes, and Flexible Developments (Zoning Section 5200) allow reduced frontages and lot sizes. | For standard subdivisions and some commercial areas, minimize setback distances in order to increase flexibility for building location and permit reduction in frontage where appropriate (such as OSRD, around cul-de-sacs, at outside sideline of curved streets) to reduce road length and paved areas, and increase open space. |
| Zoning – Section 2600 – Appendix B – Table of Dimensional Requirements | Lot Layout: Lawn Requirements | No current provisions for lawn extent limits | Establish limits of extent of lawn area on residential lots, either by area or by percentage of lots. |
| Zoning – Section 2600 – Appendix B – Table of Dimensional Requirements | Lot Layout: Impervious Area Limits | No current provisions for impervious limits in low-density areas. However, a special permit is required in the Water Resource Protection District if a lot has the greater of 15% or 2500 SF of impervious area. (Zoning Section 4243.b.f) | In low-density areas, consider establishing limits on impervious lot coverage (i.e. 15 %). (Not appropriate for town centers or moderate density neighborhoods where compact development should be encouraged). |
| Zoning – Section 5120 | Open Space: Clustering | Cluster Developments are allowed in Residence A, C, and the Wayside Inn Residential Zone by special permit. | Should be a by-right form of development (no special permit required). |

| Reference | Topic | Existing Requirement | Recommendations |
|---|--|---|---|
| Zoning – Section 3523A | Open Space: Landscaping Requirements for non- residential areas | “The buffer area required herein may contain walks, sewerage, and wells, but no part of any building structure, or paved space intended for or used as a parking area may be located within the buffer area.” | Stormwater practices in parking islands, landscaped areas and setbacks should be allowed or required. Add language such to this section as: “Low impact stormwater management techniques such as bioretention areas, rain gardens, vegetated swales, and filter strips may be located within the landscaped areas and count towards the requirement.” |
| Zoning | Conservation: Incentives | No current provisions of conservation incentives | Should be incentives to developers or landowners to conserve non-regulated land (i.e. open space design, density bonuses, stormwater credits, lower property tax rates) |
| Zoning – Section 3427.d. | Stormwater Management | “Stormwater Management for all proposals shall meet or exceed the requirements of the Massachusetts Department of Environmental Protection Stormwater Management Policy...” | Add the language: “and the Town of Sudbury Stormwater Management Bylaw where applicable.” |
| Zoning – Section 4280 | Stormwater Management: Water Resources Protection District | “Stormwater Management...” | Add language to this section such as: “Stormwater Management criteria and design standards shall also be in accordance with the Town of Sudbury Stormwater Management Bylaw where applicable.” |
| Wetlands Regulations – Section 7.6 – Subdivision Roadways Performance Standards | Stormwater Management: Subdivision Roadways | Performance Criteria | Consider adding another section after 7.6.3 with the language: “Stormwater Management criteria and design standards shall also be in accordance with the Town of Sudbury Stormwater Management Bylaw where applicable.” |
| Wetlands Regulations – Section 7.11 | Stormwater Management | “All storm water runoff systems shall at minimum conform to best management practices as specified in the Sudbury Planning Board’s Storm Water Runoff Regulations...” | Add the language: “and the Town of Sudbury Stormwater Management Bylaw where applicable.” |
| Water Resource Protection Regulations – Section 2.2.7 | Stormwater Management | “Drainage Calculations...” | Consider removing the language in this section and replacing with “Drainage Calculations submitted shall be in accordance with the Town of Sudbury Stormwater Management Bylaw where applicable.” |