

Principles, Ideas & Implications – Environmental

Protection of the natural environment is increasingly recognized as an important role of local government and zoning. The role of zoning in environmental protection is most prominent in the direction it provides in how and where land is developed. For this issue, staff is focused on stormwater management as a component of how land is developed and the potential to better encourage green or sustainable building techniques.

Article 5. Development Standards

Sec. 5.3. Stormwater Management

5.3.1. Intent and Purpose. The intent of these provisions is that any use of land be designed and operated to:

- A. Contribute to the protection and restoration of Newton’s waterways;
- B. Reduce the burden on the City’s stormwater drainage infrastructure;
- C. Mitigate the potential for flooding of neighboring properties;
- D. Encourage sustainable and environmentally friendly development efforts; and
- E. Help to address requirements under the City’s National Pollutant Discharge System permit;

5.3.2. Definitions

- A. BMP –
- B. Impermeable surfaces –
- C. Total suspended solids –
- D. Phosphorous -

5.3.3. Application of Stormwater Management Requirements

Applies to increase in the area of impermeable surfaces of 400 square feet or more, aggregate across a lot or lots.

Applies to any change in grade of greater than [TBD with ISD & Engineering]

Stormwater Management Plan required, as described below and approved by the City Engineer.

5.3.4. Stormwater Management Requirements

- A. Erosion & Sediment Control. All projects subject to this section shall have appropriate erosion and sediment control according to a plan approved by city engineer. [Reference to erosion and sediment control ordinance][this section will likely be reserved until the erosion and sediment control ordinance is adopted.]
- B. Small Impervious Area Projects. Increases of impermeable area of between 400 square feet and 1000 square feet shall select one or more of the following stormwater management best practices sufficient to collect stormwater runoff from an impermeable area equivalent in size to

the amount added to the property. To the extent practicable, the implementation of these best practices should represent permanent improvements to the property.

1. Gutter downspouts lead to vegetated areas, underground dry wells or stone infiltration trenches
 2. Native plantings and xeriscaping
 3. Rain barrels, cisterns and similar
 4. Permeable pavers/surfaces for walkways, patios, etc.
 5. Runoff from paved areas routed to vegetated areas
- C. Large Impervious Area Projects. Increases of impermeable area greater than 1000 square feet shall utilize site planning and design criteria in combination with BMPs to achieve the following standards.
1. No net increase in stormwater runoff to neighboring properties or the City's stormwater drainage system;
 2. Stormwater quality improvements representing a 80% reduction in total suspended solids and a 50% reduction in total phosphorous.
- D. Offsite Mitigation. Where compliance is technically infeasible or to avoid harm (flooding) to neighbors or city systems, as determined by the City Engineer, requirement can be met in whole or in part through offsite mitigation. Technically infeasible due to:
1. Seasonal high groundwater
 2. Location with bedrock/ledge
 3. Locations with on slopes where infiltrated stormwater could lead to groundwater sourced flooding of nearby properties.
 4. Location where the density and nature of the project design would make compliance difficult
 5. Brownfields or other sites with soil contamination

Where offsite mitigation is warranted, it can be achieved with nearby projects such as green street retrofits, parking lot retrofits, neighborhood scale structural BMPs or similar or payment into a mitigation fund.

5.3.5. Stormwater Management Maintenance

- A. All projects subject to this section must have a Stormwater Management Plan recorded with the deed.
- B. Large Impervious Area Projects, as described above, must submit an annual letter indicating continued compliance with the approved stormwater management plan.

Sec. 5.12. Green Design

5.3.1. Intent and Purpose. The purposes of this section are to:

- A. Reduce the use of energy, water, and other natural resources in Newton's building stock;
- B. Increase the use of renewable energy sources for electricity, transportation and heat;
- C. Increase the use of electricity for transportation;
- D. Increase the number of energy efficient buildings

- E. Minimize the environmental impacts of construction materials and methods, including waste reduction

5.12.2. Definitions

- A. LEED– Leadership in Energy and Environmental Design

5.12.3. Application of Green Design Requirements

Applies to buildings or structures of 20,000 square feet or greater.

5.12.4. Green Design Requirements

- A. X% of the roof area must be have solar panels with special permit to waive or reduce.
- B. X% of parking spaces must have electric vehicle charging stations and an additional x% must be “charging station ready” with conduit. Special permit to waive or reduce.

5.12.5. Green Design Incentives

- A. A project achieving a LEED certification of at least ‘Gold’ may get a 10% increase in buildable area allowed.

Sec. 1.5. Rules of Measurement

- H. Allow a small intrusion into setbacks for energy efficiency insulation on existing buildings.

1.5.4. Height

- A. Defined:
 1. The vertical distance between the elevations of the average grade plane and the highest point of the roof. Not included in such measurements are:
 - a. Cornices which do not extend more than 5 feet above the roof line;
 - b. Chimneys, vents, ventilators, and enclosures for machinery of elevators which do not exceed 15 feet in height above the roof line;
 - c. Solar panels which do not exceed x feet in height above the roofline;
 - d. Enclosures for tanks which do not exceed 20 feet in height above the roof line and do not exceed in aggregate area 10 percent of the area of the roof;
 - e. and Towers, spires, domes and ornamental features.

Implications

Stormwater

The intent here is to bring greater standardization and predictability to the City’s stormwater requirements. The current requirement is provided below. The language is somewhat vague; while it appears to set a clear standard of when it becomes applicable, ie. 400 square feet or 4%, the next line implies that every single alteration of the landscape requires review by ISD and Engineering. Finally, the

standard that must be met is the “belief” of ISD and Engineering that the change will cause runoff to neighboring properties or soil erosion.

B. Projects increasing impervious surface area by more than the lesser of a) 4 percent of lot size or b) 400 square feet, or that involve altering the landscape in such a way that may result in alteration of the runoff of surface water to abutting properties or erosion of soil, shall be reviewed by the Commissioner of Inspectional Services and the City Engineer to ensure compliance with this Sec. 5.3. The Commissioner of Inspectional Services and the City Engineer may reject a project if they believe it will cause runoff of surface water to abutting properties or the erosion of soil.

Stormwater regulation is a complex area of local land use regulation and the development of stormwater ordinances and policies are frequently done after significant analysis, usually by a consultant. Our goal with this section is to make some basic improvements to this section of the ordinance that improve predictability and enforceability, more closely reflect current engineering practices, and help to address requirements under the Clean Water Act as it applies to the City of Newton. The proposed regulations above will:

1. Provide a clear threshold for triggering review by the DPW Engineering Division. The proposed threshold is 400 square feet of impermeable surface, which is based in the current standard and represents an area that has a reasonable likelihood of potentially impacting the existing stormwater runoff situation on a lot.
 - a. This threshold, at 400 square feet, could be increased or decreased, resulting in more or fewer projects captured. Some communities do apply a requirement to all land disturbing activities, but then exempt single family or apply a lighter standard, similar to that described above for 400 to 1000 square foot projects. In Newton, much of the stormwater related issues we seem to encounter stem from single family projects so staff is not proposing exempting single family categorically.
2. Provide clear direction on the City’s expectations for stormwater management. Smaller projects are proposed to be subject to lower requirements including that they incorporate some basic best practices into their site and/or building design. As most projects of this nature will be relatively small-scale changes to a property and most frequently an issue for single or two-family properties, this standard seems reasonable. Larger projects should be required to use state of the practice stormwater management techniques and should be familiar to engineers hired to complete these improvements.
 - a. The percent reductions set to address total suspended solids and phosphorous are the requirements necessary to help the City achieve its requirements under the Clean Water Act and were provided by the DPW utilities division.
3. Allow some reasonable alternatives to the stormwater requirement. Generally, the goal is to infiltrate as much stormwater into the ground as close to where it falls as is possible. There are a number of factors though that represent places where this goal would generally not be desirable, such is where there are pollutants in the ground. Where infiltration is not possible, stormwater drains are connected directly to the City storm drain system and a stormwater mitigation alternative is required. Two of the exemptions are of particular note:
 - a. Where bedrock is high, where the groundwater table is high, or in certain hilly areas of the City, infiltration of stormwater could possibly lead to groundwater sourced flooding

- for downhill properties. This outcome is not 100% predictable, but experience with this phenomenon is relatively common in the City.
- b. On densely developed sites, such as in Newton's village centers, land is better devoted to building uses rather than stormwater management infrastructure – stormwater management techniques appropriate to densely settled areas, such as permeable pavement, could be incorporated onsite or in the immediately adjacent public RoW. .
 - c. This approach will require that the City identify off-site projects that could be funded and/or establish a fund into which stormwater mitigation funds would be placed.
4. Require recordation of a stormwater management plan with the property deed, thereby alerting future property owners to responsibilities for ongoing maintenance of the stormwater management practices on the site. For small projects, staff envisions a form that will simply describe what BMPs have been installed. For the large project, which will generally include BMPs with ongoing maintenance requirements, the stormwater management plan will likely be more detailed. Further, these larger projects will have an ongoing reporting requirement to help ensure ongoing maintenance.

Overall, staff believes the proposed changes represent more of a clarification of the existing rules than a significant increase in the regulatory requirement. This change would create a program for off-site mitigation, where currently, if a project is exempted, there is no requirement.

Green Design

Initial ideas to create a baseline requirement tied to the Leadership in Energy and Environmental Design (LEED) system, or similar point-based system, have, after further investigation, been removed for the time being. The biggest challenge presented by this type of approach would be staff's ability to review for project compliance, which can require detailed technical reports and understanding of the green building components being used. Instead, staff looked to green design requirements the City Council is frequently requesting for larger projects and incorporating those as a standard in the Ordinance, with waivers allowed by special permit. Requiring solar panels and electric vehicle charging stations both serve to advance City goals in the area of advancing alternative energy use as a climate change mitigation approach. Further, staff is considering expanding on the current special permit finding relative to the efficient use of energy and natural resources to further boost the environmental component of Newton's Zoning Ordinance.

The above proposal includes an incentive program for LEED Gold certified projects. Further analysis of this idea is necessary to both understand where and how such a density bonus might be applied and to also understand whether such an incentive would actually work in the real world. Sometimes density bonuses don't work where the logistics of development prevent a project from being able to utilize the bonus, because of site constraints, real estate market, or other factors. This proposal is presented to get feedback from the Committee on whether an incentive program would be desired and to get a sense of the parameters to consider.

There are a handful of municipalities that have successfully created high performance or green building programs. Staff intends to spend additional time researching and understanding these examples. Amongst the questions we have are how these communities reconcile building code conflicts in setting

base energy efficiency requirements and other standard high performance building standards and what other incentives are used to encourage these types of buildings. These programs appear to not be components of the zoning ordinance but do inter-relate with zoning in various ways.

Rules of Measurement

The proposed changes in the Rules of Measurement section would be to allow solar panels to exceed existing height limits and allow existing buildings adding additional insulation to intrude into the setback for that purpose, up to 6 or 8 inches. Staff needs to research the appropriate height allowance for solar panels. Both of these changes appear to be inconsequential, though supportive of overall City objectives to encourage better environmental design and reduce climate change impacts.