NESRA ENGINEERING

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Alternatives Analysis (310 CMR 10.58(4))

The proposed project consists of athletic field improvements at the Marshall Simonds School to provide modern, safe, and all-weather facilities for student and community use. In accordance with 310 CMR 10.58(4), alternatives were evaluated to avoid and minimize impacts within the Riverfront Area while meeting the project's educational and recreational objectives.

Purpose of the Project

The purpose of the project is to upgrade the existing athletic facilities to allow year-round use, improve safety and playability, and correct chronic drainage and field condition issues while maintaining compliance with state and local environmental standards.

Alternative 1 – No Build

The "no build" alternative would maintain the existing natural grass fields, which are in poor condition and frequently unplayable due to drainage limitations. This alternative would not meet the project purpose and would fail to improve stormwater management or water quality.

Alternative 2 – Renovation of Existing Natural Grass Fields

Regrading and reseeding the existing fields was considered. However, due to high use, soil compaction, and poor infiltration capacity, this alternative would continue to require extensive maintenance (irrigation, fertilization, mowing) and would not correct the drainage deficiencies or improve water quality within the watershed.

Alternative 3 – Two Full-Size Synthetic Turf Fields (Original Design)

An earlier layout included two full-size multipurpose synthetic turf fields. While this configuration would have met programmatic needs, it would have resulted in greater disturbance within the Riverfront Area and higher impervious-equivalent surface area. In response to Conservation Commission feedback and project team coordination, the plan was reduced and refined, eliminating one full-size field to minimize impacts and improve environmental outcomes.

Alternative 4 – Proposed Plan (Preferred Alternative)

The current design includes one full-size multipurpose synthetic turf field and one smaller youth/practice field, substantially reducing the area of disturbance and impervious-equivalent coverage from the earlier concept. The revised configuration also removes a previously planned parking area, incorporates a bioretention rain garden for enhanced treatment, and maximizes infiltration through the permeable turf system.

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Runoff from the walkways and turf fields is routed through the engineered turf base, providing infiltration and pretreatment before discharge to the rain garden and existing stormwater system. All work within the Riverfront Area is confined to previously disturbed lawn and landscaped areas, and no alteration of wetlands or bank is proposed.

Evaluation of Practicable Alternatives

Practicable alternatives were assessed based on the ability to meet the project purpose while avoiding or minimizing impacts to the Riverfront Area. Off-site locations were not considered practicable because the athletic facilities must remain adjacent to the existing school infrastructure and utilities. The current proposal represents the least environmentally damaging practicable alternative, as it minimizes work within the Riverfront Area, avoids impacts to wetlands and bank, and provides measurable environmental improvements through stormwater infiltration and treatment.

Summary

The selected alternative balances the functional needs of the school with environmental protection. It reduces prior impacts, eliminates unnecessary impervious areas, and introduces stormwater best management practices that provide a net improvement in water quality and infiltration. The design meets the intent and performance standards of 310 CMR 10.58(4) and the Town of Burlington Wetlands Protection Bylaw, offering equal or greater protection of resource areas compared to existing conditions.