

GOVERNMENT OF THE DISTRICT OF COLUMBIA  
DEPARTMENT OF GENERAL SERVICES



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**Recreational Surfaces Site Suitability Assessment**

The Department of General Services (DGS) in conjunction with the sister agencies – DCPS, DME, DOEE, DPR, OCA and ODR – formed an Interagency Working Group on Artificial Turf and Playgrounds. One effort is to develop site suitability assessment criteria for the selection of surface material (synthetic turf or natural grass) on athletic recreational fields. The objective is to take a consistent, strategic approach in the surface type selection.

DGS categorized the suitability factors into three areas: (1) recreational use, (2) health, safety and the environment, and (3) cost. An assessment is conducted by DGS and its client agency (depending on the project) in partnership.

**I. Recreational Use**

The first component of the assessment is determining what the current typical field use is as well as planned future programming, especially for new field construction. This question will in part be answered by engaging the user community for feedback. One of the main goals of the assessment is to select a field material that will optimize current use and planned programming.

a. High Impact Sports Activities

If the site is used for *high impact sports activities* (e.g. primarily for football, rugby, soccer or other organized sports activities) either artificial or natural turf is acceptable under the following conditions:

- If artificial turf is considered it must include a shock absorption system and requires routine maintenance such as grooming and infill replacement. Artificial turf also requires shock attenuation testing.
- Recycled crumb rubber infill material *may not* be used.
- If natural turf is considered it should include a mineral layer system, routine maintenance, and proper rest time for healthy grass to grow. It would include an assessment of soil conditions, organic matter, fertilizer, and lime conditions which may influence the grass species the amount of shade present, drainage characteristics of the site, and irrigation needs (irrigation can be reduced during rainy periods).<sup>1</sup>
  - The suggested ideal type of grass species used for sports fields include Kentucky Bluegrass or a Perennial Ryegrass and Tall Fescue. These grasses are selected based on their ability to withstand traffic and stress from drought or heat, recovery from

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<sup>1</sup> <https://plantscience.psu.edu/research/centers/turf/extension/factsheets/lawn-establishment>

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field use (recuperative ability), resistance to pest pressure (insects, weeds and diseases).<sup>2</sup>

The characteristics of grass used for sports fields are as follows:

| Characteristics        | Kentucky Bluegrass | Perennial Ryegrass | Tall Fescue |
|------------------------|--------------------|--------------------|-------------|
| Quality                | Good               | Good               | Medium      |
| Establishment Speed    | Fair               | Excellent          | Medium      |
| Wear Tolerance         | Medium-good        | Good               | Good        |
| Recuperative Potential | Good               | Medium             | Fair        |
| Drought Tolerance      | Fair-medium        | Good               | Good        |
| Disease Tolerance      | Medium             | Fair               | Fair-medium |
| Insect Tolerance       | Fair-medium        | Medium-good        | Good        |
| Shade Tolerance        | Fair               | Fair               | Good        |
| Fall/spring Color      | Fair-medium        | Good               | Medium      |

**b. Open Field or Multipurpose**

If the site is used as an *open field area in a park or as a multipurpose play area at a school* either artificial or natural turf is acceptable under the following conditions:

- If artificial turf is considered then the same characteristics are required as those used for high impact sports activities: a shock absorption system, routine maintenance such as grooming and infill replacement and shock attenuation testing.
- Recycled crumb rubber infill material *may not* be used.
- If natural turf is considered then, just as with high impact sports use, an inclusion of mineral layer system is needed. Routine maintenance is required and the requirement for type of grass offers some flexibility. Bahia, Bermuda, Centipede or Zoysia are all sufficient for the intended use.

**c. Other Surfaces**

For other recreational surfaces, agencies will consider the following guidance unless circumstances prohibit or additional policy stating otherwise is adopted:

| LOCATION TYPE   | SUITABLE SURFACE   |
|-----------------|--|
| PLAYGROUND AREA | Preference for either engineered wood fiber (EWF) and wood carpet or pour-in-place (PIP) |
| DOG PARK        | Preference for stone dust / gravel mix; Artificial turf acceptable                       |

<sup>2</sup> <http://safesportsfields.cals.cornell.edu/synthetic-turf>

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| LOCATION TYPE             | SUITABLE SURFACE            |
|---------------------------|-----------------------------|
| SMALL LAWN or SLOPED AREA | Preference for natural turf |

**II. Health, Safety and Environment**

The second component of the assessment is determining what the potential health and environmental impacts are for any considered surface material. This is based on review of the most up-to-date research by the District’s subject matter experts, DOEE being the primary.

- While the technology on infill and research on the environmental impacts are continuously evolving, DGS remains steadfast in its efforts to research and evaluate the existing and new technologies. Site Suitability Assessments will continue and adhere to the moratorium on recycled crumb rubber.
- Given that sports fields are used for diverse activities, and levels of sport, player safety standards will vary depending on the activity. All sports fields should be maintained to a ‘fit for use’ condition to minimize the risk to users. The factors that may directly impact safety include grass species and quality, surface quality, and drainage.

**III. Costs**

The third component of the assessment is determining what resources are available in the budget for a project and how those resources can be used most efficiently and equitably. DGS considers the cost impact and allotted operating and capital budget for recreation surfaces.

- Estimates for field costs can vary greatly depending upon location and existing conditions. Therefore, comparing the costs of natural turf vs. artificial turf field installation and on-going costs will be considered on a case by case basis.
- The capitalized investment for a synthetic turf field could be considered as permanent infrastructure, with components potentially requiring replacement on an 8- to 10-year life cycle assuming conformance to regular maintenance and complete component replacement, each effort designed to prolong its use. Turf renovations will typically include carpet and fill materials replacement.
- Synthetic turf fields operating costs specifically include regular grooming, debris removal, minor carpet repairs and adding infill to high use areas, and unique reconditioning requirements that include brushing, de-compaction, deep cleaning, repair

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of inlaid field lines and adding infill to low or high use areas. The synthetic turf fields are also annually G-Max tested by a certified engineer to help ensure their safety.<sup>3</sup>

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<sup>3</sup> <https://www.fairfaxcounty.gov/neighborhood-community-services/sites/neighborhood-community-services/files/assets/documents/athletics/fields%20and%20gyms/synthetic%20turf%20task%20force%20overview,%20findings%20and%20recommendations.pdf>