Sports Complex at Golden Gardens Park: The Case Against Synthetic Turf

by Stuart Greenleaf for Beyond Toxics

INTRODUCTION

Golden Gardens Park in the Bethel neighborhood of West Eugene was identified in Eugene's 2018 Parks and Open Space System Plan for development of a regional sports complex and neighborhood park. The park has valuable wildlife and bird populations after years of collaborative efforts to improve habitat in and around the site, which has more than doubled in size to 223 acres. The ponds within the park are part of the Long Tom Watershed. The Long Tom watershed connects West Eugene surface waters to the Willamette River.

SYNTHETIC LAYERS OF TOXIC MATERIALS - Of most concern are the *plastic grass blades*, as well as the *"infill" material*.

Plastic grass blades contain "plasticizers", biphenyl A (BPA) and phthalates, which make plastics flexible. They are known hormone disruptors. With use, the blades break down into plastic micro-particles.

Infill Material - No type of infill has been shown to be free of toxins. The most common is black "rubber crumb", made from discarded vehicle tires.

- Infills emit poly aromatic hydrocarbons (PAH), volatile organic hydrocarbons (VOC), and poly-fluoroalkyl substances (PFAS). Among possible harmful effects are airway inflammation, damage of the eyes, kidneys and liver, as well as several types of cancer. There is also a greenhouse gas effect.
- Heavy metals are present; these are neurotoxins.

HUMAN HEALTH

Heat on synthetic grass fields are about 20-50°F higher than natural grass and typically reach the same temperature as asphalt pavement. The highest temperature measured during research was 200°F. *Heat exposure during sports could have potentially disastrous effects on youth*.

Joint Injuries are more common, because of the increased friction between shoe and turf. Synthetic turf is much more abrasive than grass when players slide. Crumb rubber particles can also get into skin abrasions and cuts. After winning a lawsuit, the National Women's Soccer Team cannot be required to play on synthetic turf.

Toxins from synthetic turf enter the body through inhalation of emitted particles and gasses, and also skin contact. Children and youth are especially vulnerable because some effects are developmental. Young children are closer to the ground, and hand-to-mouth ingestion is more common.

Golden Gardens Park, Synthetic Turf…page 2

WILDLIFE

Habitat Preservation is one stated principle of park development, but synthetic turf seriously degrades habitat.

Water Contamination - Toxic chemicals from plastic grass blades and infill enter the environment through runoff. Toxic chemicals and microplastics entering the ponds at Golden Gardens Park will be carried downstream through the Long Tom Watershed and eventually into the Willamette River.

- Affected at Golden Gardens are sensitive wetlands, with many plant and animal species including the Western Pond Turtle.
- Toxicity for salmon - A pioneering study at the University of Washington examined high death rates of coho salmon and rainbow trout near roadways. The cause was determined to be the stabilizer 6PPD from tire residue, which is present in the rubber crumb infill material of synthetic turf.

MYTHS

Lasts Forever ? No, the lifespan of synthetic turf is 7 to 10 years, depending on use. It cannot be recycled, and after disposal in a landfill the plastic and tire particles continue to emit toxins. The landfilling and purchase/reinstallation will repeat in an ongoing cycle.

Maintenance Free ? No, other toxic chemicals are used in routine maintenance, such as disinfectants and pesticides. Redistribution (fluffing the crumb rubber) and replacement of infill is required and special maintenance equipment must be purchased and maintained.

Watering Free ? No, it must be watered on warm days to reduce temperature.

SAFE ALTERNATIVE

Organically Grown Grass - Updated seeding and maintenance methods allow continuous use without down time. Drought resistant species are available, requiring less water. The City can partner with experts to maintain turf with natural and organic methods.