



Kinnelon Environmental Commission

130 KINNELON ROAD, KINNELON, NEW JERSEY 07405



Comments From the Public: Highlands Regional Master Plan

Organizations: Borough of Kinnelon Board of Health
 Borough of Kinnelon Environmental Commission
 Kinnelon Coalition For More Green Safe Fields For Our Children

Organization Type: Drinking Water, Environment, Safety & Health Preservation

By: Cheryl Canale, Chair KEC; Jack Glaser, Chair KBH; Randall Charles

Date: May 5, 2015

Subject: **Highlands Regional Master Plan:**
 Highlands Water Protection and Planning Act – **REVISE**
Exemption and Waivers #6:

Current Situation:

Municipalities located in the Highlands Preservation Area **must adhere to** "The Highlands Water Protection and Planning Act", P.L.2004, c.120 (C.13:20-1 et seq) and "The Areawide Water Quality Management Plan" (WQMP) with **no exemptions allowed** for the improvement for non-residential purposes such as construction/installation of Artificial/Synthetic Turf Fields by a local government unit within the Highlands Area.

"Only Hospitals, Public/Private Schools, Non-Profit entities and organizations primarily for Religious purposes in existence on the date of enactment **are exempt (#6)** from applying the enhanced environmental standards adopted by the New Jersey Department of Environmental Protection in the Highlands Preservation Area".

Problem:

Municipalities situated within and/or on the Watershed – on Aquifers and on a "Prime Ground Water Recharge Area" (Subject to N.J.S.A. 13:230-10) **are circumventing** The Highlands Water Protection and Planning Act, P.L.2004,c.120 (C.13:20-1 et seq) by utilizing Exemption #6 – to file a "Highlands Determination Applicability Application" with NJDEP to install Artificial/Synthetic Turf Fields (Tire-Crumb/Alternative Compositions) on Public School properties located within the Highlands Preservation Area utility directly on Watersheds – Aquifers and Prime Ground Water Recharge Areas.



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Problem:

This **deliberate disregard** by Municipal Governing Officials collaborating with Local School Board of Education Officials to **bypass** The "Highlands Water Protection and Planning Act", P.L.2004, c.120 (C.13:20-1 et seq) and "The Areawide Water Quality Management Plan" (WQMP), Watershed, Aquifers, Wetlands, Subwatershed, and Trout/Fish producing streams, jeopardizes – Puts **"AT RISK"** the Quality, Safety and Quantity of the **CLEAN DRINKING WATER** provided from the Highlands Preservation Area for an estimated 4 million or more New Jersey Families and business every day.

Environmental, Health & Safety Consequences – Liability:

Kinnelon Environmental Commission is concerned with the "materials and compounds" that maybe found in tires which are used in the manufacture of "Tire-Crumb" or "Crumb Rubber" often used in Artificial Turf Fields as "Infill" between the Turf Fibers. Industry estimates that one (1) Artificial Turf Field may contain tens of thousands of tires. During 2013-2014 the **Environmental Protection Agency** revised its position concerning Artificial Turf "Tire-Crumb Rubber." The EPA relabeled the 2009 Study - "News Release is OUTDATED. Please visit the EPA Tire-Crumb Study web page for the most current information²: www.epa.gov/nerl/features/tire_crumbs.html."

EPA has stated that there are **no studies** on the **LONG-TERM impact** of "Tire-Crumb" and "Alternative Compositions" on the Environment, Health and Safety – it is up to the states to conduct the studies³. (Ca, NY, Ky, Mn have pending legislation calling for studies and moratoriums on installation of Artificial Tire-Crumb" Rubber Turf Fields – legislation information attached & NY Child Safe Products Act 2015).

The Kinnelon Board of Health is very concerned that The EPA has listed on their website Dec. 2013 "...the materials and compounds that may be found in tires, although not all are contained in every tire." The list totals 30 substances which include **CARCINOGENS** also identified by Dept. HHS "Report on Carcinogens, Thirteenth edition 2014" – **arsenic, benzene, benzothiazole, cadmium, chloroethane, chromium, cobalt, isoprene, lead, naphthalene, nickel, polycyclic aromatic hydrocarbons, styrene-butadiene, toluene, trichloroethylene.**

Toxic substances include acetone, aniline, barium, copper, halogenated flame retardants, latex, manganese, mercury, methyl ethyl ketone, methyl isobutyl ketone, nylon, phenol, pigments, polyester, rayon⁴. (CDC Report "ortho-Toluidine" 2014; EPA Webpage Dec. 2013 and HHS "Report of Carcinogens, 13th Edition 2014).



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Environmental, Health & Safety Consequences – Liability:

A **proposed** Artificial Turf Field with "Tire-Crumb" Rubber or a newer "Alternative Composition" (Cork, Coconut, acrylic coated polymer sand, rice, sneakers have not been studied) will be installed directly on the Watershed – Aquifer. These **carcinogens** and **toxic** substances will degrade - seeping/leeching by Rain Runoff/Drainage, along with Wastewater from Disinfecting and Cleansing the Artificial Turf Field and the discharge of Volatile Organic Compounds/Semi-Volatile Organic Compounds and **Carbon Black** (Black Dust) into the air and water are a significant threat to the Environment, Health and Safety⁵. (Jrl of Environmental & Toxicology – "Release of Polycyclic Aromatic Hydrocarbon's & Heavy Metals from Rubber Crumb in Synthetic Fields": "Preliminary Hazard Assessment for Athletes", Jan 2015 and MSDS for Methyl Ethyl Ketone is attached courtesy of Kinnelon Vol. Fire Dept & OEM).

When it rains, snow melts and/or watered to cool-off the Artificial Turf Field, the **Runoff Water** will enter into the adjoining Wetlands, Trout Stream, compromising the - quality/purity of the freshwater produced by the Watershed that flow's in the Pequannock River and the surrounding environment which is "Prime Ground Water Recharge Area." Providing drinking water to more than half (+4 million) of New Jersey Residents and Kinnelon Borough Residents.

A significant short-term and Long-Term negative effect not factored in – is the anticipated increase in the amount of Water Required to "Irrigate" Cool the Artificial Turf during summer and Early fall per OSHA regulations citing ASTM C1055-03 when the **FIELD SURFACE** of **120° F** is the generally accepted surface temperature before warnings and protections must be considered when an Artificial Turf field temperature may reach 160° F⁶. (Penn State: AS McNitt et al, "Temperature Amelioration of Synthetic Turf Surfaces Through Irrigation", 2008 and Brigham Young University "Synthetic Surface Heat Studies", 2009).

The Watershed - Aquifer may be impacted along with the surrounding residential neighborhoods that have "**individual well water for drinking**" will experience significant drop in water pressure and supply during the summer months of June, July, August, early September when the Kinnelon High School Field is completely exposed to several months of "Hot Weather". Sustained exposure and "**Heat Islands**" generated by the sustained heat will place increased stress on the water supply to irrigate the Artificial Turf Field to keep it tolerable for the athletes to practice and adversely impact the Watershed – Aquifer which is "Prime Ground Water Recharge Area." Multiple studies have validated the temperature on an Artificial Turf Field can range from 35-60° C higher than Natural Grass necessitating "Irrigating" the Turf fields⁷. (University of Arkansas Turfgrass Science – "Synthetic (Artificial) Turf vs. Natural Grass Fields").



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Environmental, Health & Safety Consequences – Liability:

Utilizing Exemption #6 to file a "Highlands Determination Applicability Application" with NJDEP to install Artificial/Synthetic Turf Fields (Tire-Crumb/Alternative Compositions) to **BYPASS** "The Highlands Water Protection and Planning Act", P.L.2004, c.120 (C.13:20-1 et seq) and "The Areawide Water Quality Management Plan" (WQMP) **INTENTIONALLY UNDERESTIMATES** the entire scope long-term time – costs that include planning for the monitoring and impact on the Watershed, Aquifer, Wetlands, Subwatershed and the Highlands resulting from the **Water Run-off Discharge/Drainage** generated by scheduled cleaning, types of disinfectants (**WASTEWATER**) that is applied – are the runoff cleaning chemicals and extractables from the Artificial Turf field environmentally inert? - What residues (will the disinfectants - cleaning agents leave on the field? – are there biofilm potentials on the surface material? Is there a mold or bacteria growth inhibitor or will it create a damp environment in the Artificial Turf "Infill or base material"? – Ingestion hazard to animals if consumed attempting to feed on the surface material? – There will be Safety concerns to the players, students and maintenance staff when disinfectant(s) and cleansers are applied...how long before the Synthetic Turf field is safe for the players to use?

What is the rainfall runoff differential between the existing Natural Grass Field and the proposed Artificial Turf Field as it applies to the Highlands Act?

The Kinnelon Board of Health is quite concerned with the threat of Infections such as Staph and MRSA that may/can occur from Artificial/Synthetic Turf Fields. The need to protect the players/staff/students from INFECTION and other health conditions, require **Routine Administration of Disinfectant(s)** which are applied to cleanse the Artificial "Tire-Crumb" Rubber Turf Field and "Alternate Compositions" are necessary to prevent Staph/MRSA Infections.

These communicable infections resulting from "Turf Burns" are passed-on/transmitted by players in locker rooms and/or contact on the playing/practice fields⁸. ("New Eng Journal Med", 2005 NFL St. RAMS and the "Tampa Bay Buccaneer's NFL Take Note of Proving UV Light Disinfects Artificial Turf (MRSA/Staph)", Nov. 13, 2013 and et al).

Exemption #6 through The Highlands Determination Applicability Application - Engineering Report **fails to consider or plan for the impact of the Runoff Discharge and Wastewater Drainage** of Direct and/or Indirect Runoff generated by this Artificial Turf Field which will be absorbed - leaching into the adjacent wetlands, stream, Watershed and Aquifer adversely affecting the Category One Trout Producing (TP) Water Stream, the Subwatershed - Prime Ground Water Recharge Area which provides drinking water and flow's into Maple Lake and the Pequannock River¹.



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Summary:

Private and Public Schools situated in the Highlands Preservation Area **MUST BE HELD TO THE SAME** Rules and Regulations that apply to Municipalities situated in the Highlands Preservation Area: "The Highlands Water Protection and Planning Act", P.L.2004, c.120 (C.13:20-1 et seq) and "The Areawide Water Quality Management Plan" (WQMP).

- Allowing Exemption #6 for Public/Private Schools to install Artificial/Synthetic Turf Fields **CANNOT Circumvent - Void the SAFEGUARDS** established by the Highlands Council and detailed in the "Goals, Policies and Objectives" specifically in the Highlands Regional Master Plan, 2008 concerning the "**Protection of the Watershed, the integrity of the Watershed and Aquifer** and the prevention of any Runoff – Wastewater negatively impacting the Subwatersheds, Wetlands and Groundwater of the Highlands Preservation Zone":
- "Utmost Priority is Protection of the value of the Highlands Region as **an Essential Source of Drinking Water, Providing Clean and Plentiful Drinking Water for one-half of the state's population** (Highlands Act, Section 2), Along with the Ecological Values of Clean Water, Through the Protection Enhancement and Restoration of Water Resources Quantity, Flow Characteristics and Quality as Fundamental to Ensuring that there are Adequate Water Supplies to Support these Needs".
- "Protection, Restoration and Enhancement of Water Quality and Quantity of Surface and Ground Waters (Sections 10. B(1) and 10.C(1)), and to Determine the Amount and Type of Human Development and Activity which the Ecosystem of the Highlands Region can Sustain while Still Maintaining the Overall Ecological Values thereof, With Special Reference to Surface and Ground Water quality and Supply..." (Section 11.A. (1)(A).

Closing:

Exemption #6 in conjunction with a Highlands Applicability Determination Application **understates and underestimates the entire scope - costs of all work activities** and the significant **environmental impact** to the Watershed, Aquifer, Wetlands, SubWatershed, Drinking water, Trout Streams flowing into Rivers, Ponds, Lakes and Reservoirs.



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Closing:

Exemption #6 and **The Highlands Applicability Determination Application** provides for applicants/Public and Private Schools to **exclude** any **Monitoring** of the **Runoff and Wastewater Drainage**, the **Toxic** and **Carcinogens** and the Volatile Organic Compounds/Semi-Volatile Organic Compounds and **Carbon Black** which are **emitted into the air** and **inhaled** generated from the Artificial –Synthetic Turf Field or from a 10 yr, 20 yr, 100 yr “Sandy” type storm overwhelming the Artificial Turf drainage and impacting the adjoining Wetlands – Watershed.

Solution - Action:

To protect the families, children and businesses that rely on the DRINKING WATER provided by the Watersheds, Aquifers, and Prime Ground Recharge Areas situated in the Highlands Preservation Area, **Exemption #6** for **Private and Public Schools** puts “**At Risk**” the Quality, Safety, and Amount of Drinking Water available every day - 24/7 365 days to over 4 Million plus New Jersey Citizens.

Current Exemption #6 provides a “Loop-out” for Private and Public Schools:

“Places of Worship, **Schools**, or Hospitals: Any improvement, for non-residential purposes, to a place of worship owned by a non-profit entity, society, or association, or association organized primarily for religious purposes or a **PUBLIC** or **PRIVATE** SCHOOL, or a hospital, in existence on the date of enactment of this act, including but NOT limited to new structures, an addition to an existing building or structure, a site improvement, or a sanitary facility”.

AMEND and Expand Exemption #6 to Include the Following:

“**Public and private schools** are **not exempt** and **must comply** the **SAME AS** Municipalities do for non-residential purposes, the requirements of the “Highlands Water Protection and Planning Act, P.L. 2004, c.120 (C.13:20-1 et seq.) for the construction of Artificial or Synthetic Turf Fields containing any component of Crumb Rubber Fill and/or an Alternative Composition (coconut fibers, cork, rice husks, acrylic coated polymer sand, used shoes, and other materials – that safety has not been determined) which Crumb Rubber is the result of processing waste tires which contain numerous components, some which are known to be hazardous to people and the environment.”



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Solution - Action:

"The hazardous and/or carcinogenic components as identified by the EPA and HHS include arsenic, cadmium, chromium, lead, vanadium, zinc, acetone, benzene, mercury, carbon black, 1,3 butadiene, phthalates, polycyclic aromatic hydrocarbons (PAHs), benzothiazole, butylated hydroxyanisole, n-hexadecane, 4-(t-octyl)phenol."

"Until a more comprehensive study that determines cumulative impacts on human health risks and the long-term effects on the environment, health and safety, installation of an Artificial or Synthetic Turf Fields are prohibited".

We the members of the Borough of Kinnelon Environmental Commission, the Borough of Kinnelon Board of Health and the Kinnelon Coalition For More Green Safe Fields For Our Children are requesting that the **Highlands Regional Master Plan: "Highlands Water Protection and Planning Act" – Exemption and Waivers #6** be **AMENDED and Expanded:**

Public and private schools are **not exempt** and **must comply** the **SAME AS** Municipalities do for non-residential purposes, the requirements of the "Highlands Water Protection and Planning Act, P.L. 2004, c.120 (C.13:20-1 et seq.), The Areawide Water Quality Management Plan" (WQMP) and being situated on a "Prime Ground Water Recharge Area" (Subject to N.J.S.A. 13:230-10) **no exemptions** are **allowed** for the improvement for non-residential purposes such as construction/installation of Artificial/Synthetic Turf Fields by a local government unit within the Highlands Area.

Citing national and local concerns, the safety of the environment and our children can not be **stated more clearly** than by "Kentucky's Energy and Environment Secretary Len Peters said that redirecting the grants was the prudent step to take while more studies are conducted to determine with a greater degree of certainty if the materials used to supplement play areas and athletic fields could be considered harmful, especially to our school children."

"While there may not be enough evidence to justify replacing crumb rubber sports fields and playgrounds, it makes sense not to build any new ones until the science catches up with the questions." Lexington Kentucky Herald-Leader Editorial - **"Stop crumb rubber use on playgrounds,"** May 4, 2015.



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The Borough of Kinnelon Board of Health and Environmental Commission and the Kinnelon Coalition for More Green Safe Fields For Our Children will make itself available for discussion on this matter with the New Jersey Highlands Council.

Respectfully,

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Respectfully,

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Respectfully,

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New Jersey Highlands Council

The Highlands Council is currently **seeking comments** from the public regarding the Highlands Regional Master Plan as part of its 2014 RMP Monitoring Program.

The 2014 RMP Monitoring Program evaluates progress toward achieving the goals of the RMP through implementation of policies and programs, as well as potential shortfalls. The Monitoring Program is not intended to amend the RMP, but rather develop the factual foundation on which potential amendments to the RMP may be made. ***Comments should be specifically related to the RMP – its contents, programs, and implementation to-date.***

Primary Topic

- Agricultural Resources
- Future Land Use
- Historic, Cultural, Archaeological, and Scenic Resources
- Implementation of the RMP
- Landowner Equity
- Natural Resources (Forests, Wetlands, Streams, Lakes, Etc)
- Sustainable Economic Development
- Transportation and Air Quality
- Water Resources and Utilities (Infrastructure, Supply, Availability, Etc.)

5/7/15

A blue binder containing information on turf fields has been placed in the Highlands Library.