5/21/2019 ITEM 6.0

Genevieve Yip

From: Susan Hinton <suewalt@comcast.net>
Sent: Friday, May 17, 2019 5:15 PM
To: Mayor and Council
Subject: 5/21/19 Council agenda item"6.O Action on the Raymond G. Gamma Dog Park Schematic Design Update with Synthetic Turf ..."

Dear Mayor Gillmor and City of Santa Clara Council Members,

Regarding the Parks & Recreation recommendation to use synthetic (a.k.a. artificial) turf in the updated Raymond G. Gamma Dog Park (which has informally been called the Reed dog park), as both a dog owner and as a citizen concerned about Santa Clara's policy regarding lowering of greenhouse gas emissions - that is, to become "greenhouse gas-free" (GHG).

Note that greenhouse gas emissions result not only from active energy use, i.e. electricity generation, but also from human building activity, such as creating permanent structures, such as landscape hardscaped areas. Please note that landscape architects refer to synthetic turf as hardscape (footnote 1 below), not as an organic structure. Furthermore, the impact of using synthetic turn on our atmosphere is known and described by multiple researcher/scientists (footnotes 2, 3 below).

Given that the Synthetic Turf Council itself states that synthetic turf must be replaced approximately every 7-10 years, the impact mentioned above will occur over and over.

Finally, the ecological impact of synthetic turf occurs not only from GHG, but also in drainage of plastic bits and embedded chemicals to water tables and ultimately to the ocean, and also a number of turfs are impregnated with antibacterial substances (presumably to render pee/poo/other-substances harmless to people) that, as biologists will tell you, help bacteria become resistant to known antibacterial substances.

I hope the Council will take all of this into account when deciding whether to proceed with the use of synthetic turf in the place of actual grasses and ground covers.

Sincerely,
Susan Hinton
3066 Hazelwood Ave.
Santa Clara, CA

1) https://worldlandscapearchitect.com/why-we-need-to-look-for-lawn-alternatives-but-artificial-grass-is-not-the-answer/
"... using artificial grass on rooftops and in urban areas increases hardscape areas thus increasing the temperature of the buildings and cities. Artificial grass can reach 200°F (93.3°C) on a 98°F(36.6°C) day (1) thus adding to a cities heat island effect. Artificial grass creates an ecological dead zone with a micro-climate that increases a cities heat island effect, storm water load, and reduces the green ratio and ecological footprint of the city."

2) https://www.mvtimes.com/2019/02/20/synthetic-turf-will-contribute-greenhouse-gas-problems/
"I write as an oceanographer with expertise in plastic pollution to advise against the installation of synthetic turf on Martha's Vineyard. My research has shown that the environmental health impacts posed by plastic carpets and polypropylene shock pads are likely significant, and should be at the forefront of any decision regarding these materials.

POST MEETING MATERIAL

I am a postdoctoral researcher at the International Pacific Research Center at the University of Hawaii, focusing on the pathways and fate of marine debris and plastic pollution in the ocean. Prior to this position, I studied the emissions of greenhouse gases from plastics in the environment at the Center for Microbial Oceanography: Research and Education. I also recently started a project on microfibers at Scripps Institution of Oceanography at the University of California, San Diego, examining the degradability of plastic and microfibers in the environment. This past August, I was the lead author on a groundbreaking study, 'Production of Methane and Ethylene from Plastic in the Environment,' in which we quantified greenhouse gas emission from plastics under natural conditions and considered the potential environmental consequences of this process.

We already knew that greenhouse gases are released during the manufacturing of products such as synthetic turf and shock pads, and now we have learned that greenhouse gases continue to be released while they are in use and as they degrade. Specifically, we found that the breakdown of plastic represents a significant source of greenhouse gas pollution that is expected to increase — especially as more plastic is produced and accumulated in the environment. Perhaps this is not surprising, since plastic is made from petroleum, but our team at the University of Hawaii was the first to publish data about greenhouse gases and plastic debris. The research has far-reaching implications for climate change, waste management, policymaking, and our decisions as consumers."

3) https://sfrecpark.org/wp-content/uploads/rptsyntheticturfgeneral090407.pdf
"***This report describes research we performed for the San Francisco Department of the Environment (SFE)*** to assist in decisionmaking regarding the purchasing of synthetic turf. Synthetic turf is becoming increasingly popular as a surface for playing fields. The products have improved and many competing brands are now available, offering a range of choices of materials. These fields offer a number of advantages over natural turf, the most important of which in most instances is playability. Many questions have been raised about the health and environmental impacts of these playing fields, and although research is beginning to explore these questions the conclusions are based on incomplete information and lead to contradictory results.

Originally, the scope of this project was to be a full cost comparison between synthetic and artificial turf, putting the various pros and cons into a common currency (i.e. monetizing) so that total impacts could be calculated and compared. We did not find any other studies that had done this, although one study has compared the global warming implications of each lifecycle. That study found a natural turf field to have a negative carbon footprint (-16.9 tons C02 equivalent over ten years) due mainly to the carbon sequestration potential of the grass. The chosen synthetic turf field, on the other hand, emitted +55.6 tons of CO2 equivalent over ten years. This figure would have been almost twice as high (108.2 tons CO2) if the authors had not assumed that the field would be recycled at the end of life (which gave a carbon credit of 52.6 tons CO2 equivalent). Recycling of synthetic turf is theoretically possible but apparently beyond the state of the art at the current time due to difficulties separating the various components. Assuming that the field is eventually recycled, its greenhouse gas emissions (GHG) relative to those of natural turf (which are negative) could be offset over ten years by planting 1861 trees. If the field lifecycle had not received the recycling credit, the required offset would increase to 3209 trees."

4) https://www.ttiionline.com/wp-content/uploads/2015/01/STC-Guideline-for-Recycle-Reuse_2017.pdf
From the Synthetic Turf Council (industry organization) document that is referenced when the topic of recycling synthetic turf is brought up. This document states up front that the onus of recycling is on the customer, not the synthetic turf provider, and furthermore the concrete examples given in the document for handling the 7-10 year replacement of turf are for reuse, e.g. turning the plastic into other plastic product, and not actual recycling (though the word "recycle" appears throughout the document. Here is their disclaimer: "The Guideline is not and should not
be considered, as standards for recycling, reusing, repurposing and removing synthetic turf systems pur poses. This document does not imply, suggest or in any way guarantee performance issues could not a rise if the recycling, reusing, repurposing and removing synthetic turf systems meet any or all of this

suggested Guideline and does it imply or suggest that if any of the guidelines are not met that the performance of such activities and the results therefrom will not fail. The suggested Guideline is not intended to be and are not, to be considered as safety standards and this document does not imply that an injury is less likely to occur if the suggested Guideline is followed"

05-21-2019

Item 6.0

City of Santa Clara

Action on the Raymond G. Gamma Dog Park Schematic Design Update with Synthetic Turf, and the Larry J. Marsalli Park Site Plan Update to include the Off Leash Dog Areas and Introduction of an Ordinance Approving the Raymond G. Gamma Dog Park Schematic Design Update in Accordance with City Charter Section 714.1

RTC 19-398

May 21, 2019

City of Santa Clara

City of Santa Clara
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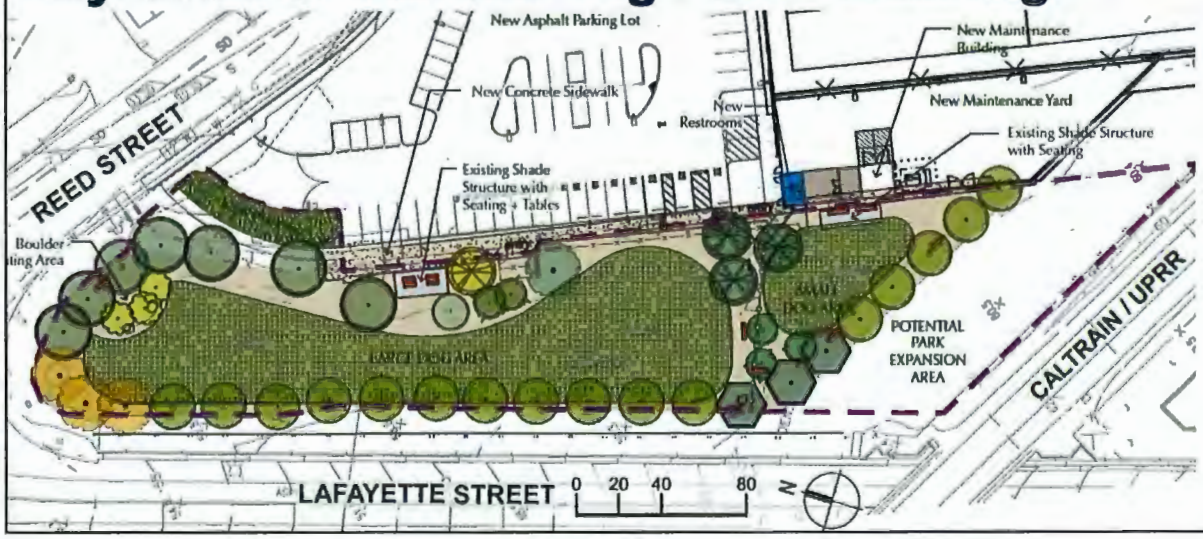
Raymond G. Gamma Dog Park - Existing



2

POST MEETING MATERIAL

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Raymond G. Gamma Dog Park - Proposed

3

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Dog Park - Design Comparisons

Attributes	Existing Dog Park	Proposed Design (B)
Large Dog Area	25,015 sf	26,326 sf (+/-)
Small Dog Area	9,553 sf	13,378 sf (+/-)
Total Area of Dog Park	34,568 sf	39,704 sf (+/-)
Net Total Add	N/A	5,136 sf (+/-)
Location of Dog Areas	Large–North; Small–South	Large—South; Small—North
Mounds	Yes, 36"+	Yes, 12-24"
Drinking Water Fountain	Yes - person	Yes – bottle filler, ADA, dog bowl
Dog wash station	No	Yes
Turf	Natural	Synthetic
High traffic wear	No	Yes
Duration of Closures	Long	Short
Frequency of Closure	Often	Periodic

4

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Parks & Recreation Design Standard – Drinking Fountain

Features

- Bottle Filler
- Accessible side arm fountain
- Pet bowl at base
- Two (2) to be installed at Raymond G. Gamma Dog Park

5

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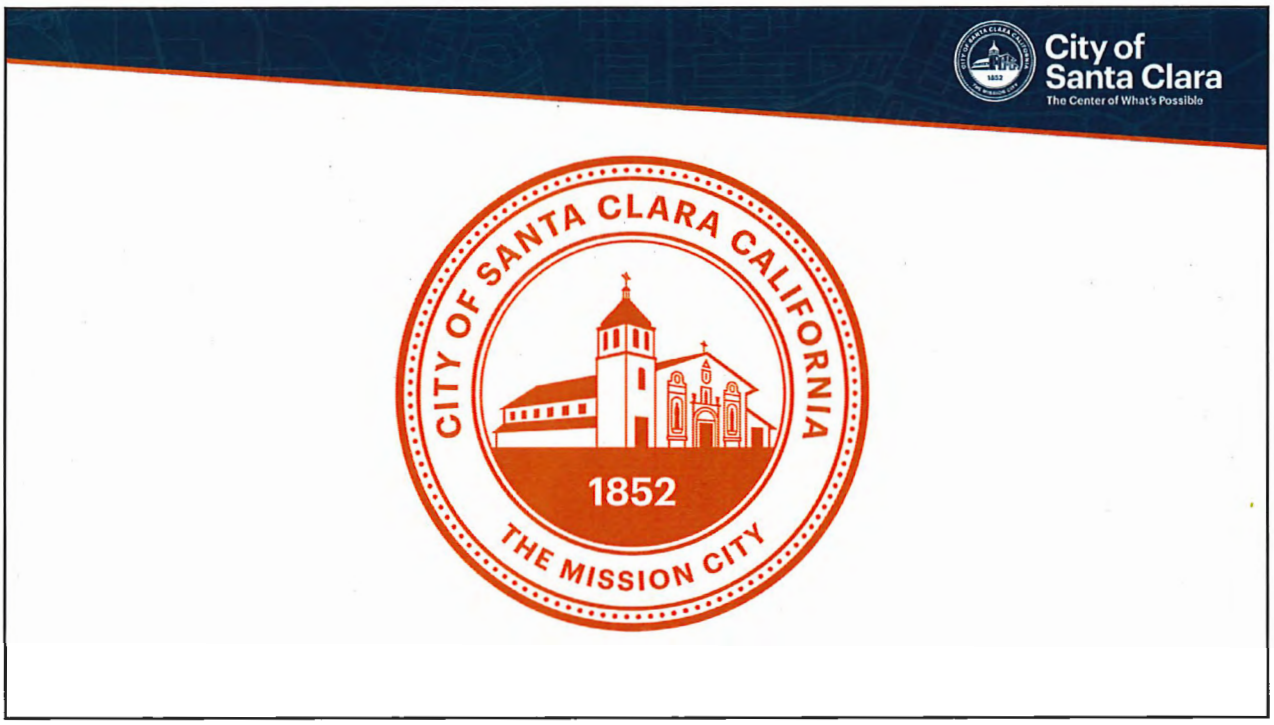
Larry Marsalli Park – Off leash dog areas

6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