Muir Beach Playground Turf Cushioning (prepared by Scott Bender, March 2015)

The Community Center playground utilizes ground rubber (crumb rubber) as a cushioning material in and under the green turf surrounding the playground play structures.

The vast majority of studies find no identifiable health risk from contact with this type of crumb rubber, even those studying actual ingestion of the rubber. The most credible studies appear to be those done by city and state departments of public health, including New York City, the state of New York; the state of Connecticut, San Francisco, the state of California, Torino, Italy, and Berlin, Germany.

Our installation actually uses one-eighth of the typical amount of material per square foot, and incorporates a grid that keeps the material trapped within the base of the turf. Both of these specs are different from those installations reviewed in the studies. A good compilation of all of the studies to date can be found here:

Independent Research and Reports on Crumb Rubber Infill

http://www.syntheticturfcouncil.org/?page=CRI_Research

Please note in particular the studies conducted by independent entities, such as by departments of public health. While Muir Beach's installation uses a design spec that is much safer than those being studied, it is a readily solvable issue should a problem be found to exist. The rubber is removed by cutting openings in the grid that presently encapsulates the ground rubber, uses powerful vacuums for extraction of the rubber crumbs and then replaces the removed rubber with imported sand. That revision results in a less durable turf surface, is less protective against falls and would be at an additional expenditure of approximately $4,000.

Comparison	**MB CC Playground Fall Protection**	**Athletic Fields**
Turf density	70 oz yarn	35 oz yarn
Fill per sq ft	2.5 lbs/square foot 2 lbs of sand over **0.5 lbs** crumb rubber	8 lbs per square foot 4 lbs sand over **4.0 lbs** crumb rubber
Fill entrapment	Thatch bottom layer to entrap crumb rubber and bottom of sand layer	None