My name is Jared Hershkowitz. I live at 5 Ryder Avenue, Dix Hills 11746.

I was president of the Flower Streets Civic Association in Nassau County and later Vice President of House Beautiful Civic Association in Suffolk County. I am now a Citizen Advisory Board member for the Dix Hills Water District, a member of Water4 Long Island and a member of LICAP, The Long Island Aquifer Protection Commission.

Senator Hannon, Senator O'Mara, Assemblyman Englebright, Assemblyman Gottfried and members of the Health Committee and Committee on Environmental Conservation.

Thank you for holding this hearing on Long Island where the problems of drinking, surface and coastal water contamination are profound. I am glad we are to examine water contamination and assess the effectiveness and implementation of laws and public policies in protecting water quality and public health.

However, we have been doing just that for decades and, although, we have made inroads in bringing our waters back a bit from the precipice, some say we may be in worse shape than ever before.

I believe that all people are good at heart and if they were informed and rewarded, would do the right thing. Politicians don't get into it for the money, public workers work for the common good and environmental activists do it to advance the future health and well being of our citizens. Give a person some knowledge and an incentive and they will do what's right.

Last week on The Daily Show, the CEO of Starbucks, Howard Shultz, announced a new program called, Upstanders, that recognizes ordinary citizens practicing good neighbor activism. In a time when vitriolic politics, government corruption and seemingly little getting done for the public good, its great to see our business community stepping into the void that government has relinquished.

And there are many other CEO's who are husbands, wives, fathers, mothers and sons and daughters who have realized that our government is at a standstill and that if they don't do something for our earth, what we leave for our grandchildren will in no way be what our parents left us-a pure and beautiful environment where the water is pure and the air clean and the food safe to eat.

A few years ago I proposed a comprehensive P3 Plan, a public, private, partnership, to address in a comprehensive and long term way a multitude of problems contaminating our waters. And the costs to implement this plan would be amortized over many years. Public utilities all across the country are partnering with the private sector to encourage the public to do the right thing and off set the costs of infrastructure improvements and achieve common goals. In an era of challenging economics it often difficult to find the money needed to make the necessary improvements and provide the staffing to accomplish these goals.

This is not new. In New York we have encouraged alternative energy sources, clean energy cars and other abatement and tax incentive programs to carry out needed policy. We can do the same for our environment.

But we cannot listen to the deniers that the piecemeal plan to attack the multitude of problems we have now will work. What we have now is no different from what we have had for the last 4 plus decades and what are the conditions now?

In March of 2015, the Suffolk County Comprehensive Resources Plan called our drinking water at the tipping point. Recently, Newsday called our surface and coastal waters in crisis. And Dennis Kelleher, the well respected President of H2M, the consulting firm for many of Long Island's water suppliers, said that the DEC has a skeletal staff. And even though there were two new hires, that in no way comes close to their needs. And even when they were fully staffed over the last four decades of governance the DEC has left us with this mess. A while ago, a DeNapoli report said that the DEC has not had, does not have now and will not have in the near future the

funds nor staff to do the job of protecting our waters.

Our sole source drinking water in three aquifers ranging from Kings and Queens Counties through Nassau and Suffolk Counties has no single manager, no single entity necessary to protect, enforce laws and regulations, and clean up water issues. We cannot go back to the disjointed way we manage our water.

We are reactive instead of proactive. A P3 plan managed effectively attacks the problems at their source. We still find thousands of dead fish and turtles, beaches closed, discover new super fund sites because of contamination and continue to examine the health effects of even the filtered water we drink.. There are those that believe that even our filtered water contains contaminants in too high a concentration for human health. We know the effects of too much nitrogen on infants younger than six months of age. But what happens to children in the womb exposed to nitrate and pesticides.

In an Indiana University study, children conceived in summer perform more poorly in school than other children. An Indiana research team has linked poor school results to pesticides and nitrate exposure in the early weeks and months of development. A study of more than 1.5 million children in grades 3 to 10 found that children conceived in the months when pesticide and fertilizer levels were highest achieved significantly lower results in standard math and English tests.

I'm not saying that's the case here, but we don't know that.

We don't know what the many contaminants both measured and not are doing to our health because it is only in the last few years we have seen nitrogen and other contaminant levels rising so high as to threaten state standards. And when were those standards set? They were set almost five decades ago and it is time we examined their validity.

This is a must!

We also need to examine how we treat our water. Improper blending in our utilities hides from the state the real levels of contamination. And chlorine, a pesticide, unevenly used, may be responsible for

many illnesses. A recent study in Hartford, the first of its kind in North America, found that, "women with breast cancer have 50-60% higher levels of organochlorines (chlorination by products) in their breast tissue than women without breast cancer". We have studied the effects of pesticide on breast cancer but, to my knowledge, we have never done research like this. We need to do this. The USGS has identified dissolved organics in the aquifer that mixed with chlorine may produce these toxins.

I'm not saying it does, I'm saying we need to find out in a comprehensive study if it does. This is new information. There are water utilities in this country and abroad that do not use chlorine to treat their water.

But more importantly, we need an all encompassing entity that brings together all the players in drinking, surface and coastal waters. And we can do this in a cost effective way. Isn't it better now to spend a little and prevent the huge costs of major infrastructure building and health costs later. Water for Long Island has spent the last seven years developing a plan that costs less than a cup of coffee at Starbucks per person per year. We need to put the DEC, the USGS, the Departments of Health and others at the same table run by scientists and professional city planners

without political influence or interference, to independently, in an on-going way, comprehensively collect data, model, study, plan, assess, oversee, protect, implement policy, ensure sustainability, foster coordination and cooperation, and, using the latest scientific information, manage our waters regionally.

This kind of management entity is NOT new and has had success in other areas of our country and around the world.

The time for setting up commissions and boards and task forces is over. We cannot afford to wait any longer. This is the time for bold action which will ensure the health and safety of our citizens, a politician's ultimate overriding responsibility.

I implore you to meet with scientists, academics and activists to establish a Long Island Regional Management Entity that will ensure the health of our citizens, the beauty of our waters and the tourist and fishing industries that made Long Island a great place to live in and work in and visit.

Hershkowitz

Chlorine, cancer and heart disease

"We are quite convinced, based on this study, that there is an association between cancer and chlorinated water"
~ Medical College Of Wisconsin research team.

The addition of chlorine to our drinking water began in the late 1800s and by 1904 was the standard in water treatment, and for the most part remains so today. We don't use chlorine because it's the safest or even the most effective means of disinfection, we use it because it is the cheapest. In spite of all our technological advances, we essentially still pour bleach in our water before we drink it. The long term effects of chlorinated drinking water have just recently being recognized. According to the U.S. Council Of Environmental Quality, "Cancer risk among people drinking chlorinated water is 93% higher than among those whose water does not contain chlorine."

Dr. Joseph Price wrote a highly controversial book in the late sixties titled "Coronaries/ Cholesterol/ Chlorine" and concluded that " nothing can negate the incontrovertible fact, the basic cause of atherosclerosis and resulting entities such as heart attacks and stroke, is chlorine." Dr. Price later headed up a study using chickens as test subjects, where two groups of several hundred birds were observed throughout their span to maturity. One group was given water with chlorine and the other without.

The group raised with chlorine, when autopsied, showed some level of heart or circulatory disease in every specimen, the group without had no incidence of disease. The group with chlorine under winter conditions, showed outward signs of poor circulation, shivering, drooped feathers and a reduced level of activity. The group without chlorine grew faster, larger and displayed vigorous health.

This study was well received in the poultry industry and is still used as a reference today. As a result, most large poultry producers use de-chlorinated water. "It would be a common sense conclusion that if regular chlorinated tap water is not good enough for the chickens, then it probably is not good enough for us humans!"

There is a lot of well founded concern about chlorine. When chlorine is added to our water, it combines with other natural compounds to form Trihalomethanes (chlorination byproducts), or THMs. These chlorine byproducts trigger the production of free radicals in the body, causing cell damage, and are highly carcinogenic. "Although concentrations of these carcinogens (THMs) are low, it is precisely these low levels that cancer scientists believe are responsible for the majority of human cancers in the United States". The Environmental Defense Fund.

Simply stated, chlorine is a pesticide, as defined by the U.S. EPA, who's sole purpose is to kill living organisms. When we consume water containing chlorine, it kills some part of us, destroying cells and tissue inside our body.

Dr. Robert Carlson, a highly respected University of Minnesota researcher who's work is sponsored by the Federal Environmental Protection Agency, sums it up by claiming, "the chlorine problem is similar to that of air pollution", and adds that "chlorine is the greatest crippler and killer of modern times!"

Breast cancer, which now affects one in every eight women in North America, has recently been linked to the accumulation of chlorine compounds in the breast tissue. A study carried out in Hartford Connecticut, the first of its kind in North America, found that, "women with breast cancer have 50% to 60% higher levels of organochlorines (chlorination byproducts) in their breast tissue than women without breast cancer."

One of the most shocking components to all of these studies is that up to 2/3s of our harmful exposure to chlorine is due to inhalation of steam and skin absorption while showering. A warm shower opens up the pores of the skin and allows for accelerated absorption of chlorine and other chemicals in water. The steam we inhale while showering can contain up to 50 times the level of chemicals than tap water due to the fact that chlorine and most other contaminants vaporize much faster and at a lower temperature than water. Inhalation is a much more harmful means of exposure since the chlorine gas (chloroform) we inhale goes directly into our blood stream. When we drink contaminated water the toxins are partially filtered out by our kidneys and digestive system. Chlorine vapors are known to be a strong irritant to the sensitive tissue and bronchial passages inside our lungs, it was used as a chemical weapon in World War II. The inhalation of chlorine is a suspected cause of asthma and bronchitis, especially in children... which has increased 300% in the last two decades. "Showering is suspected as the primary cause of elevated levels of chloroform in nearly every home because of chlorine in the water." Dr Lance Wallace, U.S. Environmental Protection Agency.

Chlorine in shower water also has a very negative cosmetic effect, robbing our skin and hair of moisture and elasticity, resulting in a less vibrant and youthful appearance. Anyone who has ever swum in a chlorinated pool can relate to the harsh effects that chlorine has on the skin and hair. What's surprising is that we commonly find higher levels of chlorine in our tap water than is recommended safe for swimming pools.

Aside from all the health risks related to chlorine in our water, it is the primary cause of bad taste and odor in drinking water. The objectionable taste causes many people to turn to other less healthful beverages like soft drinks, tea or other sweetened drinks. A decreased intake of water, for any reason, can only result in a lower degree of health.

The good news is that chlorine is one of the easiest substances to remove from our water. For that reason it logically should serve its purpose of keeping our water free from harmful bacteria and water borne diseases right up to the time of consumption, where it should then be removed by quality home filtration.

No one will argue that chlorine serves an important purpose and that the hazards of doing away with chlorine are greater than or equal to the related health risks. The simple truth is that chlorine is likely here to stay. The idea that we could do away with chlorine any time in the near future is just not realistic. It is also clear that chlorine represents a very real and serious threat to our health, and should be removed in our homes, at the point of use, both from the water we drink and the water we shower in.

Chlorinated drinking water: Health or hazard?

Josef Tyls III, MSc, PhD

Bladder cancer has been linked to chlorinated drinking water in epidemiological studies.

How harmful is it to consume chlorine and chlorine disinfection byproducts in our water? Proponents of chlorine claim there is no danger. But not all the information has been disclosed to the general public.

Water and our health and wellness

Clean water is absolutely essential for all proper body functions, including skin and organ integrity, immune system balance, cellular respiration and repair, waste elimination, and longevity.
The primary purpose of clean water within the body is to transport nutrients to the cells and then transport waste byproducts to the eliminatory system. It is absolutely essential in maintaining the critical balance needed to support life. Yet this system, with its multiplicity of interrelated dependencies, can be grossly affected by minute traces of chemical toxins like chlorine.

Hazardous byproducts of chlorination

Chlorine is used to disinfect municipal water supplies and swimming pools from harmful bacteria. But chlorine is also a highly toxic element, which has an ability to oxidize all proteins, effectively rendering them useless. All living organisms are made up of proteins. Hence, any living organism that comes in contact with even trace amounts of chlorine is affected and, if exposed to sufficient quantities of chlorine, killed.

The major health issue regarding the chlorination of municipal water is that it exposes us to a variety of toxic chemicals called Trihalomethanes (THMs), which are byproducts of chlorination. Studies have linked THMs to miscarriage and fetal malformations, and they may be also associated with an increased risk of stillbirths.

One of the most common of the THMs, chloroform, is classed as a potential cancer- causing agent. In public pools it has been measured at more than twenty times the level found in tap water. Little data exists regarding dermal and inhalation exposure routes to the chloroform body-burden from domestic and recreational use of chlorinated water. And not all harmful bacteria are effectively disinfected by chlorine.

The bacteria Cryptosporidium parvum, excreted in the feces of infected humans, cattle, and other mammals, is highly resistant to chlorine at the levels normally found in swimming pools and drinking water. Giardia lamblia is also more resistant to disinfection by chlorine, but can be effectively filtered.

How safe is showering?

Volatile chemicals like THMs can evaporate from water in a shower or bath. Conservative calculations indicate that inhalation exposures can be as significant as exposure from drinking the water; that is, one can be exposed to the same amount of THMs by inhaling during a shower as by drinking two litres of water a day. People who shower frequently could be exposed through ingestion, inhalation, and/or dermal absorption. Some studies found that the dangers from inhaling chlorine can even exceed those derived from drinking chlorinated water. The amount of chloroform, the most common Trihalomethanes in chlorinated water, inhaled or absorbed through the skin during a typical shower, may be six times higher than that absorbed from chlorinated drinking water.

The cancer connection

Epidemiological studies funded by Health Canada concluded that 14 to 16 percent of bladder cancers in Ontario may be attributable to drinking water containing relatively high levels of chlorination byproducts. According to the results of a 1992 Norwegian study published in the International Journal of Epidemiology, the consumption of chlorinated drinking water has been associated with a 20- to 40-percent increase in the incidence of colon and rectal cancer.

A study done by the Medical College of Wisconsin and Harvard University found that the consumption of chlorinated drinking water accounts for nearly 15 percent of all rectal cancers and nine percent of all bladder cancers in North America. The study also concluded that drinking chlorinated water over long periods of time increases the chances of contracting rectal cancer by 38 percent and contracting bladder cancer by 21 percent. In addition, among those who drank chlorinated water, the researchers found a higher incidence of cancer of the esophagus, rectum, breast, and larynx, as well as Hodgkin's disease.

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