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Members of the Kirkland City Council,

Thank you for the opportunity the other night to present information about the plastic grocery bag ban being proposed by Kirkland City staff. As I mentioned, science from leading environmental organizations indicates banning plastic grocery bags would do little to benefit the environment, and that it would actually increase environmental damage – harming water quality while increasing energy use and waste.

The report prepared by Kirkland City staff contains three significant flaws: it makes unscientific claims about the environmental impact of plastic bags, it assumes banning plastic bags would reduce these impacts, and it fails to consider the environmental impact of alternatives.

First, the staff report provides no science to back up claims about the impact of plastic bags on marine life. Instead, they offer a litany of popular, but false, myths about plastic bags.

For example, while the staff report admits there is “no way to know the actual size” of the Pacific Garbage Patch, they include a graphic showing it covering much of the Eastern Pacific Ocean. The source of this graphic is listed only as “Vimeo.com,” an online video site similar to YouTube. Anybody can post anything on Vimeo.com. The inability of the staff to cite a single scientific resource is evidence of how flimsy this claim is.

The staff report also claims, without evidence, that the “increase in plastics in the ocean is alarming.” This is contradicted by the leading oceanographic scientific resources. Angel White, an ocean scientist from Oregon State University notes, “We have data that allow us to make reasonable estimates; we don’t need the hyperbole. Given the observed concentration of plastic in the North Pacific, it is simply inaccurate to state that...we have observed an exponential increase in plastic.”

Wood’s Hole Oceanographic Institute backs up Dr. White’s assessment. Their research found the amount of plastics in the ocean had not increased since the 1980s, indicating that plastic grocery bags simply are not reaching the ocean in any meaningful way.

The staff report also claims “marine wildlife can become entangled in plastics,” insinuating that plastic bags contribute to this problem. This claim is so widespread that NOAA officials have actually debunked it on their web page. NOAA points out that such claims appear to originate from a decades-old study that has nothing to do with plastic bags, noting the study “does not state that marine mammals are dying from plastic pieces, but rather that mortality is caused by entanglement from lost fishing gear and other unknown causes.”

While working at the Washington State Department of Natural Resources, I was involved in solving the problem of “ghost nets,” fishing gear that is lost but continues killing fish and mammals as it floats in the ocean or rests on the ocean floor. We removed several such nets from Puget Sound and I can attest to the severe impact they have. That problem, however, has nothing to do with plastic bags and conflating the two issues is simply misleading.

The only source the report does cite is the Monterey Bay Aquarium. The video they cite, however, does not measure impact on the environment, only raw numbers. Those numbers are not put in context or connected to environmental impact. Of course it is desirable to reduce the amount of trash in the ocean, but the question is whether banning plastic bags would help that without creating offsetting environmental impacts. The data provided in the staff report does not do that.

In fact, even Greenpeace says banning plastic bags does nothing to solve this problem. The Times of London quotes a Greenpeace biologist saying, “It’s very unlikely that many animals are killed by plastic bags. The evidence shows just the opposite. We are not going to solve the problem of waste by focusing on plastic bags.” It is important to remember that unsubstantiated and inaccurate claims undermine sound science and decision making. That is one reason Dr. White, who last year won the Alfred P. Sloan award, given to “scientists and scholars identified as rising stars and the next generation of scientific leaders,” notes “this kind of exaggeration undermines the credibility of scientists.”

If the problem was simply that the impacts of plastic bags were exaggerated in the report, a ban might still be justified for the still real, but significantly lower, environmental benefit. Unfortunately, banning bags causes real environmental damage that is greater than any trivial benefit it might offer. The staff report simply assumes a ban would reduce the impact of plastic bags and the use of resources, writing plastic bags are a “drain on our non-renewable natural resources.” To back up this claim they cite the particularly low rate of recycling of plastic bags of only five percent. They contrast that with the high rate of recycling for paper bags of 85 percent.

The mantra of environmental resource use, however, is not just “recycle” – it is “reduce, reuse, recycle.” The staff report basically ignores the other two-thirds of this formula. In fact, in the one nod to the other two elements, the report notes that plastic grocery bags are reused at a very high rate, with between 60-75 percent of them being used for garbage bags or picking up after pets. When these bags are not available, consumers simply purchase other, typically plastic, bags to fill the same role. This is exactly what has happened elsewhere. Peter Nickerson of Seattle University reports that after Ireland heavily taxed plastic bags there was “a significant increase in the use of other types of plastic bags since the implementation of their tax.” He noted “the consumption of trash can liners (also made of plastic) doubled as a result of the tax.”

Reusing plastic bags is also better for the environment than recycling. The U.K. Environment Agency studied the impacts of plastic bags and alternatives, finding, “Reusing lightweight carrier bags as bin liners produces greater benefits than recycling bags due to the benefits of avoiding the production of the bin liners they replace.”

Thus, without the option of a plastic grocery bag, consumers will not only use an alternative, but will buy a replacement for the plastic bag. As a result, banning plastic bags fails both to reduce or to reuse resources. This is why advocates of plastic bag bans tend to focus only on the “recycle” element, ignoring the rest. Ironically, banning plastic bags would also increase environmental damage, both for the climate and for water quality.

The central reason plastic bags have become popular is that grocery stores, which give the bags away for free, want to offer the least expensive option. Plastic bags fill the bill because they use fewer resources and

energy to produce. This amounts to less impact on the environment. The more expensive alternatives all use significantly more energy and have a greater demand on resources and, as a result, cause significantly more environmental damage.

The U.K. Environment Agency completed the most comprehensive life-cycle analysis of various types of carrier bags, examining the impact on both the climate (in the form of CO₂ emissions) and water quality. Their conclusion was that plastic grocery bags are the best choice for both.

For example, the study found that paper bags have about four times the “global warming potential” of plastic grocery bags due to the higher energy use. Additionally, the life-cycle analysis showed that reusable cotton bags have 173 times the global warming potential of plastic bags. Consumers would need to use their bag once a week for more than three years before it broke even compared to using plastic bags.

Most ironic is the fact that the U.K. Environment Agency found that plastic bags have the least impact on water quality. Paper and cotton both require fertilizer and other chemicals to grow to produce¹. These can impact water quality, especially creating deoxygenated “dead zones,” known as eutrophication, due to fertilizer runoff. As a result, the alternatives to plastic are extremely harmful to water quality.

Paper bags cause 6.5 times as much eutrophication as plastic bags. Reusable cotton bags create an astonishing 392.9 times as much impact. Even if Kirkland families used cotton bags once a week for nearly four years, they would still double the amount of damage they caused to water quality.

And, each time they replace an old, worn out bag, the clock starts over again.

One can quibble with the numbers, of course. Substituting products from the United States instead of the U.K. would change the numbers. So too would updating the data. The study was completed in 2011, but considers options available in 2006. The differences, however, would be marginal. Even if these changes reduced the impact of paper and reusable bags by 25 percent, they would still have substantially more environmental impact than plastic bags.

Additionally, the U.K. Environment Agency report is consistent with what other life-cycle environmental studies have found.

There simply is no way around the fact that the environmental damage of paper bags and reusable cotton bags is vastly greater than that of plastic bags.

Instead of a scientific assessment, the staff report presented to the Council uses an entirely subjective grid, assigning points to a range of policy options. Both the categories and the numbers themselves are imagined. There is no explanation of the difference between a five rating and a four rating other than feel. No metrics of any kind are used to determine the rankings. There is no explanation why “no effect” is a zero rather than a 2.5. There is no reason why a narrow consideration like, “Net effect on recycling diversion,” and the entirety of “Social Equity and Fairness” are each given one column and treated equally in the score. Not to mention the question of what “social equity and fairness” means or how it would be measured.

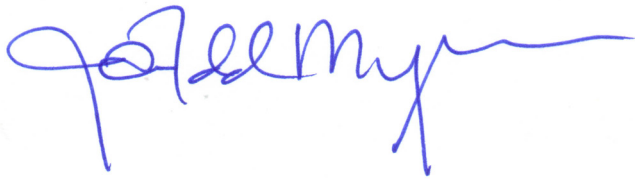
¹Most paper bags are made using fast-growing trees often grown in the Southeast United States, which are cultivated more like a crop than NW forests. More than 90 percent of Washington state trees are harvested for construction material and only a small portion is used for paper.

Too often, our environmental policies reflect this kind of subjective, feel-good approach. As a veteran of state environmental agencies and boards, I have seen many instances in which staff tilt the information in their preferred direction, ignoring inconvenient science. Policies that ignore the science in favor of popular myths are more likely to harm the environment than to help it. Subsidies for corn-based ethanol is a dramatic case in point.

I encourage the council to choose science over politics, and not vote for a measure that would increase harm to the environment. The science from the leading scientific organizations and scientists point to the reality that banning plastic bags would not reduce impacts on marine life, would increase demand for other plastic substitutes and actually increase environmental impact.

If you have any questions or would like to discuss this issue further, feel free to call me at (206) 963-3409 or e-mail me at tmyers@washingtonpolicy.org.

Sincerely,

A handwritten signature in blue ink, appearing to read "Todd Myers", with a long horizontal flourish extending to the right.

Todd Myers