

From: [Sigrid Strom](#)
To: [Betsy Robertson](#)
Subject: [EXTERNAL] Comments to Draft Climate Change Action Plan
Date: Monday, October 10, 2022 5:36:18 PM
Attachments: [City council letter re climate action _10-10-2022.docx](#)

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Please see the attached document. I may also provide copies of this for everyone at the meeting tonight as well, but this maintains it in your relevant e-mail files.

Thanks for your efforts on this subject.

Sigrid Strom

October 10, 2022

To: City of Shoreline City Council
Shoreline City Hall
17500 Midvale Avenue N.
Shoreline, WA 98133
council@shorelinewa.gov

RE: City of Shoreline Draft Climate Action Plan

Members of the City Council:

After spending many hours reviewing the draft and scanning the 2013 climate action plan, I no longer have time to prepare a detailed section-by-section analysis of the plan as I had hoped. For this reason, I'm providing a brief summary of what I've found to be some significant issues in the plan. This does not imply that there are no positive suggestions or plans of action in this draft or that the City has not done significant things up to now in addressing other environmental issues, such as surface water management. But there are serious issues that still need to be addressed in the arena of climate change action.

The plan suffers from the following serious deficiencies:

Failure to define the problem accurately:

The actual problem is the global rise in temperature in the atmosphere.

Greenhouse gas emissions (release into the atmosphere of gases that are by-products of burning fossil fuels) are a problem, not the problem. Greenhouse gas emissions were and still are a major factor in the global rise in atmospheric temperatures. They were the most important factor in the initial stages of global warming because of their rapidly increasing volumes over the past century or so. But they were not the only factor even then, and increasingly over time will probably be less significant than methane release, warming-loops, and release of particulates into the atmosphere, which are independent of greenhouse gas emissions.

Yes, they all work together. We still need to pay a lot of attention to reducing and eliminating greenhouse gas emissions as much as possible. But we cannot ignore the very serious threat posed by negative conditions resulting from feedback-loops such as warming-loops and the release of methane and particulate pollution from various sources. It is already known that even if we were able to eliminate or reduce sufficiently greenhouse gases to stop their effect of elevating temperature increases through the introduction of CO₂ and other gases, the current disruption in wind patterns that change distributions of rainfall would continue for several years. Estimates of the length of time thereafter to reduce ocean surface water temperatures are unknown, at least to me at this time.

When we don't define problems accurately, we make seriously inaccurate assumptions that affect our ability to create appropriate solutions to the problem.

Failure to acknowledge or address warming-loops:

A warming-loop is a type of feed-back loop, which is a condition that once started becomes self-perpetuating and self-accelerating.

A warming-loop is a feed-back loop that involves heat generation. It develops when surface conditions create a situation whereby heat is absorbed, stored, and then released back into the atmosphere, thus increasing the atmospheric temperature in the area. The more the temperature rises in the area, the greater amount of heat absorbed, stored, and released, which then again raises the temperature in the area.

Accumulated heat generated in a warming-loop has an effect both locally and globally. Warming-loops are now being seen as a factor in the increasing frequency and strength of forest fires. They are a factor as well as in urban environments where heat domes or heat islands are created.

Failure to acknowledge the entire effects of natural vegetation in reducing air temperatures locally and globally:

This draft and previous iterations of a climate action plan or sustainability have focused only on sequestering of carbon from CO₂ in the atmosphere.

It is very well known and documented that green vegetation has a much wider and more significant impact on reducing negative impacts of greenhouse gas emissions, reducing air temperatures, dampening sound “pollution,” enhancing wellness in patients (see hospital studies on this topic), reducing surface water runoff, and so forth.

The positive effect of trees in particular in reducing surface heat is very significant. When impervious surfaces are added to an area, heat generation increases, creating heat domes and initiating warming-loops; when the removal of trees from built environments is added to the increase in heat-generating surfaces, you have a double whammy environmentally.

Even when talking about just carbon sequestration, I’m not sure where the idea comes from that carbon sequestration in trees (or any other vegetation) is a “passive” activity. There is nothing “passive” about photosynthesis. And, it does not just remove CO₂, it creates oxygen.

Failure to address particulate pollution adequately:

Particulate pollution is carried by wind currents around the entire globe. It doesn’t just affect local environmental air quality.

Failure to separate technical issues from social issues related to climate change:

Although there are social justice issues to be addressed in relation to the negative impacts of climate change and to the ability of lower income groups and other vulnerable groups to respond to these negative changes, they are things that need to be addressed separately from the actual technical issues.

This doesn’t make them less important. It just means they need to be addressed separately in a related plan. Why? Because you have to understand and evaluate the actual technical parameters of climate change and the actual physical feasibility of addressing these parameters from a technical standpoint on their own with respect to their merit before it is possible to talk about solutions for the related social issues.

Also, asking the general population to speak to technical issues they do not understand before we have an idea of what is really going to be effective in terms of reducing heat rise is not fair to them.

Failure to address the radical need for educating people about climate change:

Failure to educate both ourselves and the general public on an ongoing basis with respect to what we know about climate change now, to what researchers are learning on a yearly basis, and to what the impacts of climate change will be now and in the future on people in their personal lives limits and skews perceptions of what is needed in terms of remediation and prevention of negative impacts..

The research is revealing new perspectives that were not known or realized even a year or two ago. We need to keep up, not just depend on other government sources for information. When we don't, we can't talk about "resilience" because we won't know what to do to create resilience. Resilience today is only possible in the long run if we slow down and ultimately stop or reverse the progression of negative environmental processes.

Failure to acknowledge tipping points:

There is a tendency to assume that we can always "adapt" to climate change. That is not the reality.

"Tipping points" are the point at which the progression of events has produced effects that are no longer reversible. Beyond a certain tipping point, there is no adaptation. Nature doesn't wait for us to "get it." It just does what nature does according to natural laws that govern how the planet works.

Failure of the public comment process to reach more of the residents in Shoreline:

The process was inherently discriminatory because it relied too much on digital/online technologies.

This needs to be explored in more depth than I have time to discuss here. But it was a limiting factor.

Failure to address the psychology of getting people out of their cars:

We tend to assume people will do something just because we think they will do it or because some people say they will do it or because we want them to do it.

There is no data that I know of that actually shows why or how people use cars or what might get them out of cars. This creates a huge problem if we dedicate resources to projects that we "believe" will help reduce car use or will help reduce temperature rises.

For example, walkability is often cited as a quality of life characteristic that is desired for neighborhoods, which is perfectly reasonable. But as a significant contribution to reducing air temperatures, the effect is not likely to be much, at least not in the immediate future, given the extremely high numbers of people getting out of their cars to walk that would be necessary, especially in a region with a hilly topography and rainy climate. We would have to be looking at an end result after many decades of this activity by hundreds to thousands of people. We also don't know why people get out to walk, or what the percentage of the population would be likely to change their behavior to do this. In addition, just blanketing the city with sidewalks can have a definite negative impact because of the increase in impervious surfaces that generate heat and then exacerbated by the removal of shade trees along the routes.

I hope that this brief summary will help you understand some of the issues. If the City is going to be spending \$16 million to \$18 million over the next 10 years to address climate change specifically, then let's be sure that what we're doing is going to have the desired effect and not in fact exacerbate the problem in some ways.

There are numerous things that can be done immediately that will help slow down or eliminate increases in atmospheric temperatures, both locally and globally, ones that will maybe cost less and not create negative impacts. This can include even very simple things like reducing particulate emissions from fireplaces and wood-burning stoves. Do you see?

Respectfully submitted,

Sigrid Strom, Shoreline resident