To: Honorable Mayor and Members of the City Council

From: Jennifer Ott, City Manager

Date: June 3, 2024

Supplemental Memo regarding 7-B on the June 4, 2024 City Council Agenda (2024-4063)

SUPPLEMENTAL INFORMATION

This memo is being provided to supplement the staff report already published for the June 4, 2024, City Council meeting.

Per the staff report, staff engaged Professor James Hurrell, from the Colorado State University, Chair of Environmental Science and Engineering Department to provide his independent professional insight and context related to climate intervention science ("Geoengineering"). The City has received correspondence, signed by numerous organizations, which raised specific concerns about Geoengineering. Staff shared this correspondence with Professor Hurrell and his emailed response dated June 1, 2024 is below.

From: Jim Hurrell <jhurrell@rams.colostate.edu>
Sent: Saturday, June 1, 2024 9:35 AM
To: Abby Thorne-Lyman <athornelyman@alamedaca.gov>
Cc: Alesia Strauch <astrauch@alamedaca.gov>
Subject: Re: [EXTERNAL] Finished statement

Hi Abby,

Thank you for sending this along. I think I speak to several aspects of this in my statement, but a few quick "talking points" are below.

Overall, the concerns expressed have validity - and most researchers are very concerned about marine carbon dioxide removal techniques if implemented at scale. But most researchers, including the UW team, are also extremely concerned about the worsening impacts of climate change, which are already having devastating impacts on the ocean that will worsen over the next few decades with additional warming. Coral bleaching is a great example, and many coral reef systems are on the verge of collapse, which will have serious impacts on marine ecosystems and people's way of life.

Researchers are not advocating for deployment - but rather to do the science to understand the potential benefits ***and*** risks of climate intervention (CDR and SRM). Only then can informed (policy) decisions be made. Doing such research might actually show that many climate intervention approaches are detrimental (i.e., not a "slippery slope" but the research might end certain approaches), but until science establishes that, countries will increasingly be trying things in a desperate attempt to slow the impacts of climate change (e.g., like the CI efforts of the Australians to save the Great Barrier Reef). And much

of the statement concerns start-up companies, some of which are indeed claiming carbon offsets and in the name of profits - but again not based on sound science. We need to do science!

The UW team is doing research through a very, very small scale experiment, not advocating for deployment, as I talk about in my statement. Nothing they are doing will harm the environment in any way, but we will potentially gain important knowledge that advances climate science in general. It will also give insights as to whether or not MCB could be effective and beneficial, or not. Why would we not want to know that?

Finally, there is no clear social science evidence to suggest the validity of the "moral hazard" argument. The NASEM study even pointed out that research into climate intervention might accelerate efforts to decarbonize.

When seatbelt laws became mandatory, the argument was that drivers would then be inclined to drive even faster, and deaths would increase. That has not been the case! When the first IPCC reports were coming out in the 1990s, some scientists argued against emphasizing the importance of adaptation, as it could lessen the incentives to mitigate.

Well, we are now near 1.5C of warming. We have firmly established the reality of climate change and the importance of mitigation, yet it is proceeding too slowly. Climate change is having catastrophic impacts across every region of the globe, and it ***will*** worsen in the coming decades. Isn't there a moral responsibility to ***research*** climate intervention approaches, so that we can understand all the possible tools we might have to combat climate change and its impacts? That is very different from advocating for deployment.

So the statement is right in that those who are ready to deploy or are at least advocating for it are a cause for concern. But that is not at all what is going on at the USS Hornet. That is research being done exactly the way many professional organizations, and the US National Academy of Sciences, have advocated.

Without efforts such as those being made by the UW team, then I am really scared people will do stupid things because we lack the scientific foundation to make good decisions. The alternative is to do nothing and watch the havoc of climate change increase.

All the best,

Jim

James W. Hurrell
Scott Presidential Chair of Environmental Science and Engineering Professor,
Atmospheric Science
Colorado State University
Department of Atmospheric Science

On Fri, May 31, 2024 at 6:26 PM Abby Thorne-Lyman <athornelyman@alamedaca.gov> wrote:

Hi Jim,

We have received correspondence, signed by numerous organizations, regarding concerns about Geoengineering: https://www.geoengineeringmonitor.org/2024/05/marine-geoegineering-statement/

The Mayor has asked University of Washington and the Silverlining institute for their response. However, given your more independent nature I wanted to share with you and see if you had any response as well, either in writing, or as talking points if questions are asked at the council meeting.

Thank you

Abby
Abby Thorne-Lyman (she/her)
Director
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City of Alameda