

To: Mike Dunleavy-Governor of Alaska

From: Victoria Westerman-Staffer of the Office of the Governor of Alaska

Re: Proposed Position on Addressing Climate Change in Alaska

Date: April 27, 2023

Introduction:

When looking at the topic of climate change in Alaska, each scientist and agency has their own predictions and calculations of how long it will take for the situation to become severe. Some scientists predict that “the Arctic could be nearly ice free during the late summer by the 2030’s,” (Mustonen et al., 2021) while others make the argument that the area of most vulnerable permafrost “is predicted to increase from 4% in 2000’s to 15% in 2050’s,” (Panda et al., 2021). Regardless of who you ask, there is a consensus that climate change has already reached the state of Alaska, especially from the residents experiencing the consequences firsthand. As Brian Brettschneider, a resident and climate scientist of Alaska explained, “I’ve seen rivers not freezing when they’re supposed to... and an absence of sea ice where it should be present.” (Krzyzaniak, 2020). Along with these voices of concern from locals, experts report that “temperatures in Alaska have been rising twice as fast as the global average,” (Motiwalla, 2020). The data and evidence has made it clear that permafrost and ice is melting right now in Alaska. This has implications that are more far-reaching than the immediate ones that may come to mind, such as sea level rise. As a result, it is recommended that the state of Alaska takes the appropriate steps to reflect this urgency. Within this memorandum, the background of climate change in Alaska will be discussed briefly. Based on this, options and recommendations will then be listed and analyzed. Given the current

information available, this office recommends that the Governor of Alaska partake in option 2. This recommendation advocates for the creation of a panel that includes community leaders, leading scientists, and other government representatives to collectively decide on options and future actions that will be taken to better the State of Alaska.

Background:

Currently in Alaska, there are little to no comprehensive climate solutions being acted upon. Naqiya Motiwalla mentioned that Governor Mike Dunleavy “formally disbanded the task force established to oversee the state’s response to climate change,” in 2017.

Science:

From a scientific perspective, the data is abundantly clear that the effects of climate change in Alaska will continue to worsen. “Only tiny areas on the Northward facing slopes of high mountains are expected to have near-surface permafrost in the 2050’s,”. (Panda et al., 2021). There is also concern surrounding the concept of the ice-albedo feedback system. Darker surfaces absorb more heat than lighter and brighter surfaces, as they are not able to reflect as much sunlight back. As a result, these darker surfaces create a constant loop of increased dark surfaces due to the melting ice. In addition, particulate matter from air pollution is now covering these ice surfaces, which also has an increasing effect on the amount of ice melting. Additionally, there has been new speculation regarding the impact of algae and algal blooms in the Arctic as temperatures continue to increase. (Di Mauro et al., 2020) It is virtually impossible to make a decision regarding the environment without taking into consideration the scientific data behind a policy choice.

Economic:

As is the case with almost everything, the economic impacts are vital to decision making. Many of the recommendations and solutions to climate change are extremely costly. With many of the policies being large scale provisions, mass amounts of funding are required to implement them. On the other hand, sometimes lack of action can be more costly. For example, it is currently estimated that “damages from climate change could add up to \$3.6 to \$6.1 billion (10% to 20%) to future costs for public infrastructure from now to 2030,” (Alaska, 2023). A critical part of Alaskan livelihood is hunting. “Up to 70% of their annual caloric intake,” is from fish and wildlife that individuals catch (Krzyzaniak, 2020). The implications of climate change on local wildlife could lead to widespread levels of food insecurity for the state, and that is a pressing economic concern as warming continues.

Another economic sector to consider is the oil and gas industry. Alaska is a large source of the United States’ resource of oil and gas. As temperatures continue to warm, more ice and permafrost will melt, making these resources more easily accessible. One of the avid concerns of this is the potential of an oil spill. A congressional research service report voiced this by mentioning that oil spills would be more difficult to remediate and clean than other areas. They explained that this was “primarily because effective strategies for cleaning up oil spills in ice-covered waters have yet to be developed,” (O’Rourke et al., 2022). This has in fact been one of the main arguments against the Willow Project, which would allow a private company to start oil drilling in areas of Alaska.

Values:

The demographic makeup of the state of Alaska is very different to that of the overall US population. There is a much larger indigenous population in the state which contributes to the local

culture and ideas. Given this, it is also important to keep in mind the disproportionate impact that climate change will have on Indigenous populations. The US Census Bureau reported in their 2020 census that the “American Indian and Alaska Native alone” accounted for 15.7% of all Alaskans (US Census Bureau, 2023). Compared to the national projection of 1.3% of Alaska Natives for the US, any policy (or lack thereof) will have a direct impact on this group. Ignoring this factor becomes an environmental justice concern that has dangerous altering effects for Alaska.

Options:

Option 1:

The first option to address the warming of Alaska would be a long-term investment into green and renewable energy. Matthew Berman, an economics professor from the University of Alaska Anchorage told Motiwalla in an interview that the major sectors are “transportation, mining, fishing, air cargo, and tourism,” all of which are energy intensive industries. These generate “a large share of greenhouse gasses within the state,” which is only contributing to the issue at hand (2020). By investing in green energy sources, the state of Alaska would be initiating in-state solutions which could benefit the economy, the environment, and the local communities.

An important point to note would be the vast amount of funding that would be necessary for this shift. Currently, the infrastructure of Alaska is reliant and built on the usage of fossil fuels. A shift of such dimensions would be a lengthy and costly process that without the support of federal funding, would be unlikely to succeed.

While the implementation of green energy would lead to a shift of employment, this does not have to be a negative one. By providing direct training to individuals previously in the fossil fuel industry, it would allow for a cohesive and smooth shift from fossil fuels to renewables while

also keeping unemployment levels at bay. This would be beneficial for both the economy and the environment.

On the topic of the environment, a shift towards renewable energy in Alaska would be a drastic step. This is especially true given that the Biden Administration recently signed off on the Willow Project. This project would allow the private firm, ConocoPhillips, to extract mass amounts of oil from federally owned land in Alaska. In an economy that is still largely revolving around the usage of fossil fuels, decisions such as these are likely to be unpopular if tangible alternatives are not provided.

A difficult obstacle to tackle would be the stigma that surrounds the implementation of renewable energy. Alaska is a republican-leaning state, meaning that many of the constituents may already have preconceived and polarized opinions on the topic. This has the potential of making it very difficult to implement if there were to be any pushback from the local communities. As we have seen on a number of topics, polarization is a strong and driving force in policymaking.

Option 2:

The second option that we have listed is much broader, but given the circumstances, this seemed to best answer and solve many of the other pending problems that option 1 was unable to. This option advocates for the creation of a panel that includes community leaders, leading scientists, and other government representatives to collectively make decisions regarding the climate of the state. This would allow for a variety of opinions and inputs from different areas of expertise, which is crucial to finding cohesive solutions.

After looking through several peer reviewed journals regarding this topic, there was a consensus that community involvement was crucial to making meaningful change. Story after

story only hardened the reality that residents had been cast out and ignored in most past choices, despite their lives being the ones directly impacted. This was especially true for those of indigenous communities. In order to address this disparity, authors Tero Mustonen and Brie Van Dam proposed that “National policies to alleviate and protect those indigenous communities bearing the worst of the impact... are urgently needed.” (Mustonen et al., 2021). By addressing past environmental injustices, there is room for healing and growth within this state.

It is also important to change the methods of how conversations are conducted within these spaces. Within this research, another commonly found theme was a lack of communication between indigenous and scientific communities. In previous times, climate concerns expressed by Native communities have often been given little attention from the scientific field. This mistake has only fueled the divide of these two groups. Instead, “documentation of difference and exploration of the issues and reason for difference is needed instead of dismissal,” (Mustonen et al., 2021). Providing the opportunity for discussion between various groups is a key factor to the success of the second option.

Recommendation:

Given the better applicability, as well as the room for flexible options, we recommend the second option as the approach to be used. A multi-community approach provides a more cohesive and representative solution to the issue of sea ice and permafrost melting in Alaska.

The first option underestimates the complexity that is present in the given situation. While renewables are something to be considered for combating climate change in Alaska, it cannot be as simple as deciding that this is best and then implementing the policy. Cultures and a number of other factors outside of science need to be considered within this process, and the first option ultimately does not include that.

By giving all these parties a seat at the table in the decision-making process, we would bridge the gap and disconnect that is present between residents, scientists, and policymakers. In order to make meaningful change and progress in addressing climate change within the state of Alaska, it is crucial to apply this framework to all discussions.

Taking this course of action gives the greatest number of groups the opportunity for involvement. This is beneficial for the individual groups themselves, but it can also inhibit cooperation in these often times difficult and complicated processes.

Conclusion:

If the current lack of inaction continues to persist, citizens of Alaska will face the worsening effects of climate change. The consideration of scientific, economic, and social justice factors provides a well-rounded compilation of areas of discussion. While both options listed in this memorandum provide solutions, we found that the second one allows for the most meaningful involvement by a variety of groups and opinions. The creation of the climate panel in Alaska is a crucial step in addressing climate change at a variety of levels within the state. As a result, this is the recommendation that we provide to you, as the Governor of Alaska.

The state of Alaska can act as a leader of the country, and trailblaze the way for others to follow in its path. By doing so, this provides the citizens of Alaska with a model to continue to address the hard-facing issues of future climate change, as well as other hard-to-make decisions.

Works Cited

- Alaska. (2023, March 10). *Climate Change in Alaska*. Climate Change, Division of Community and Regional Affairs. Retrieved April 27, 2023, from <https://www.commerce.alaska.gov/web/dcra/climatechange.aspx>
- Depenbrock, J. (2022, December 22). *This is what's at risk from climate change in Alaska*. NPR. Retrieved April 27, 2023, from <https://www.npr.org/2022/12/22/1144942195/climate-change-is-transforming-the-arctic-and-alaska-natives-are-on-the-frontlin>
- Di Mauro, B., Garzonio, R., Baccolo, G., Franzetti, A., Pittino, F., Leoni, B., Remias, D., Colombo, R., & Rossini, M. (2020). Glacier algae foster ice-albedo feedback in the European Alps. *Scientific Reports*, 10(1). <https://doi.org/10.1038/s41598-020-61762-0>
- EPA. (2017, January 13). *Climate impacts in Alaska*. EPA. Retrieved April 27, 2023, from https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-alaska_.html
- Green, K. M., Beaudreau, A. H., Lukin, M. H., & Crowder, L. B. (2021). Climate change stressors and social-ecological factors mediating access to subsistence resources in Arctic Alaska. *Ecology and Society*, 26(4). <https://doi.org/10.5751/es-12783-260415>
- Krzyzaniak, J. (2020). Brian Brettschneider: How climate change has already arrived in the Arctic. *Bulletin of the Atomic Scientists*, 76(3), 129–132. <https://doi.org/10.1080/00963402.2020.1751964>

Motiwalla, N. (2020, March 27). *Local climate action persists in Alaska*. Local Climate Action Persists in Alaska. Retrieved April 27, 2023, from <https://climate-exchange.org/2020/03/27/local-climate-action-persists-in-alaska/>

Mustonen, T., & Van Dam, B. (2021). Towards a shared understanding of Arctic climate change and urgency in Alaska. *The Geographical Journal*, 187(3), 269–277.
<https://doi.org/10.1111/geoj.12382>

O'Rourke, R., Comay, L. B., Frittelli, J., Leggett, J. A., Ramseur, J. L., Sheikh, P. A., Keating-Bitonti, C., & Tracy, B. S. (2022, March 24). *Changes in the Arctic: Background and Issues for Congress*. CRS Report. Retrieved March 11, 2023, from <https://sgp.fas.org/crs/misc/R41153.pdf>

Panda, S. K., Romanovsky, V. E., Marchenko, S. S., & Swanson, D. K. (2021, October 26). *The fate of Permafrost (U.S. National Park Service)*. National Parks Service. Retrieved April 27, 2023, from <https://www.nps.gov/articles/aps-16-1-9.htm>

U.S. Census Bureau. (2023, April 27). *U.S. Census Bureau quickfacts: Alaska; United States*. U.S. Census Bureau. Retrieved April 27, 2023, from <https://www.census.gov/quickfacts/fact/table/AK,US/PST045222>