The term "open space" is used to describe the public parks, greenways, hiking networks, and other recreational spaces designed to help people out of the congestion of their daily life. Some of the most well known examples include the U.S. National Parks, like Yellowstone and Yosemite, popular open spaces that were designated by Congress more than a century ago. These open spaces attract millions of visitors per year and are revered as *treasured lands*, though seem to be regularly underfunded, understaffed, and in disrepair, if not threatened by the residual pollution caused by neighboring oil and gas drilling. In this position paper, I will review a few policy issues facing the U.S. National Parks as a way to speculate about the barriers to the design of crowd civic systems that might be used to generate solutions to these systemic problems.

Attention recently turned toward the U.S. National Parks on March 16th, in response to President Trump's proposed 2018 budget that included a $1.5 billion cut to the U.S. Department of the Interior (which oversees the parks). The proposed 2018 cut translates to an estimated 1,242 fewer full time parks employees and to the closure of many facilities. These cuts come at a time when the parks have hosted a record number of visitors--more than 331 million people visited a park in 2016 (40 million in August alone). While there are ideas about how to accommodate some the proposed cuts (e.g., by increasing the daily entrance fees or limiting access through a reservation system) the concern is that these are short-term solutions that push off the $12 billion backlog of infrastructural investments that threaten the ability of the National Park Service to fulfill its mission: "[...] *to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.*"

How might the U.S. National Parks Service generate and vet proposals to address these and other short- and systemic problems? One idea might be to leverage the wisdom of park visitors, asking these record sized crowds to contribute, evaluate and converge on ideas that aim to preserve the parks for the enjoyment of future generations. We might imagine visitors thinking (if not talking) through specific problems as they hike around our treasured lands, and then using a mobile device to contribute their thoughts to some crowdsourcing technology. Through some algorithmic process of comparing and rank ordering the thoughts, a crowdsourcing technology might generate a series of proposals for the Parks Service to try. While the mobile and computational systems necessary to perform such a feat exist, it is unclear that any of the millions of park-goers would be sufficiently motivated to contribute.

Hikers might just want to hike. There's something nice about how hiking in silence can refocus you on the sounds of the here and now. The sound of breeze, birds rustling among fallen leaves, an occasional stranger up ahead. It's moments like these that help us to refocus in ways that work and the other commotion to our daily lives prevent, though this also suggests that there is an important opportunity cost to foregoing the full experience of a hike, and to participate in any crowd civic system. Further, this opportunity cost might be an intrinsic cost as opposed to an extrinsic cost, meaning that the personal value gained from a hike is measured in experience and pleasure, as opposed to extrinsic rewards like money, prestige or some threat avoidance. How might we operationalize the value that hikers attribute to a hike?

Some problems are perpetuated by the problem-solvers. Say that a hiker is willing to refocus some of their attention away from a hike and toward thinking through some ideation on the parks behalf. What if the problem that they're tasked to think through is about overcrowding at the parks? In blunt terms, a hiker might be tasked to generate ideas for dealing with the destruction caused by hikers. In policy deliberation research, this conundrum is often discussed as creating a cognitive dissonance -- exposing a person to a viewpoint that directly contradicts their position, views, or values. People tend to respond to

such dissonance by first feeling the blow to their senses, and second actively trying to remove themselves from the source of the dissonance. How might we frame short- and systemic problems in terms that invite investigation rather than dissonance?

Timing the task. It might be a bad outcome if some crowd civic system drove hikers deeper into their phones. Already phones are pervasive along a hike. A recent article about overcrowding at Zion National Park described the slow moving mobs of people posing for selfies, causing hikes to feel more like a line for the restroom at a concert than a stroll in the canyon. If people are already stopping to take a photo, tasking a crowd of people to stop one more time might result in even more congestion. When is the right time to task a hiker to provide some response? How much of a response could be asked of a hiker?

Visitors are not the only stakeholders. A regular concern in policy deliberation research is the tradeoff between equality of participation and equity of perspectives. If equal access to the discussion is valued, then the majority perspective might easily dominate; however, if equity of perspectives are valued then some people have to be denied access to participate, because their perspective is already represented in the discussion. Although visitors to a park represent a statistical majority, the park employees as well as the people who live in the surrounding communities may be more affected by new programs or changes to the administration of a park. Are there ways to empower these and other minority perspectives, through the tasked contributions of the hiking majority?

If you have reached this point in my brief position paper, thank you. I truly appreciate the time that you've taken to read this speculation about some of the design barriers to crowd civic systems. While the technology for building such a system is easily available, the paper has raised several challenges to the motivation, activation, and coordination of a crowd of hikers. My recommendation about how to think through these different challenges, is to print this paper out, fold it up a few times and then slip it into your pocket or favorite backpack and set out on a hike to think through some potential solutions.