

Due date Friday 4/2 4pm

THEME: Data Gaps

Evidence from interviews:

- (No evidence from WSU & UM interviews)
- And honestly it felt really hard at the time, it no longer does because frankly technology and... the technology has improved and the... it's becoming increasingly more aware that we don't have that long. Let's just put it that way. So, I think everybody is motivated all the way up to the president to... to move faster further. But we just have to agree with what we can realistically do with what we know about today. (Carrol, Sustainability Coordinator, CSU)
- You know the technology that we knew about in 2010 when we wrote about this, solar seemed a long way off. And now it's like we're putting in 21 new systems in a project over the next year. So it's, there's all kinds of things that seemed really hard 10 years ago that frankly really aren't. Not anymore. (Carrol, Sustainability Coordinator, CSU)
- The world has changed a lot in 10 years and by the time, there's universities that are saying by 2030 we'll be carbon neutral. (Carrol, Sustainability Coordinator, CSU)

- I think it's a little hard for us to tell what's going, like what's what. What we saved in lighting because it's efficient because people didn't show up versus what we spent on ventilation so there's some of that going on. (Alexi, Sustainability Coordinator, USU)
- I think we've had a little more trouble on aspects to sustainability that require collaboration outside of facilities for the groups.(Alexi, Sustainability Coordinator, USU)
- I feel like when I am working with people a lot of people are kind of like one crisis at a time. I am dealing with a few other things right now but I'll get back to you next year maybe (Alexi, Sustainability Coordinator, USU)
- We don't have anybody on the academic side whose real job is to do this (Alexi, Sustainability Coordinator, USU)
- they don't necessarily have resources to dedicate it to it, other than maybe their interest or time. (Alexi, Sustainability Coordinator, USU)
- Just the way their mission is framed is that their job is to handle purchasing or travel. And it might feel like when I am asking them about sustainability issues that I am like adding to their work. And I think that's kind of a barrier to getting things done is that people are already busy and they have to kind of ration their resources. (Alexi, Sustainability Coordinator, USU)
- A lot of people felt like they weren't sure how technology or something else would come along and it would become more convenient later and just wait and see. (Alexi, Sustainability Coordinator, USU)
- that early 2000 plan just was really vague and not actionable. (Alexi, Sustainability Coordinator, USU)

- real challenges with dependencies on natural gas (Zac Cook, Utilities Senior Energy Manager, USU)
- But then the next hurdle that we have which has really been a challenge, (Zac Cook, Utilities Senior Energy Manager, USU)
- we purchase power from a local municipal utility provider. So we are struggling with procuring renewable power, because it's not as easy if you're dealing with an open utility market where you can go buy power from wherever you want. (Zac Cook, Utilities Senior Energy Manager, USU)
- I would say... the minds... the shift in the mindset of looking at carbon having a cost has been the biggest issue(Zac Cook, Utilities Senior Energy Manager, USU)
-

- [Cut and paste evidence from each of the coded transcripts here. Mark every quotation with the interviewee's name, title, and school, for example:](#)

["Our plan process was really fast."](#) – Kate Smith, Sustainability Program Mgr, Utah State University, 3/1/2021

Evidence from plans:

- "The Technical Working Group used best available data to develop the GHG reduction scenarios but there is great uncertainty as to what might be possible in the future. Detailed engineering analyses are needed to determine the most cost-effective ways to implement this plan" (UM, 4).
- "Funding for this effort is unknown at this time, but including these projects in the Climate Action Plan will show the GHG emission reductions that could be realized" (UM, 21).
- "One of the most significant barriers to this strategy is the present inability to measure results accurately. In order to do this, a metering system or some other method of measuring energy savings would need be designed and funded. Lack of evidence that behavior modifications are working is a barrier to gaining broad and long-term commitment to the strategy" (UM, 23).
- "A more detailed study is needed however to verify the change is worth the benefits [of a 4-day work week]" (UM, 23).
- "Challenges to implementing this strategy include getting buy-in from staff, faculty, and students. Not every position will be eligible for a 4/10 schedule which may require more buildings to be operated than desired for maximum savings. This alternative schedule may also have impacts on child care and the ability to utilize carpools/vanpools" (UM, 24).
- "Further study is needed to tell exactly which buildings could be closed. Events and staff schedules need to be considered" (UM, 25).
- "As this strategy is an expensive endeavor, more research on possible grant funding will need to be conducted in order to evaluate the feasibility of this project" (UM, 39).
- "Discussions about banning freshman from bringing personal vehicles to campus have circulated in transportation plan meeting. However, until Montana institutes better public transportation methods state-wide and inter-regionally, ASUM OT and the Office of Public Safety do not see this as a viable option because many freshmen rely on their cars to drive home for breaks" (UM, 40).

- “Students may be utilizing other online ridesharing tools such as craigslist.org or making personal connections. Tracking rideshares is difficult for the University and distributing a campus wide survey could allow ASUM OT to make better estimates of ridesharing” (UM, 40).
 - “Strategies to eliminate parking permits would most likely spur up a fair amount of resistance from commuters due to the inconvenience of purchasing a daily parking pass. Although it is difficult to determine, the Office of Public Safety may lose revenue which in turn would effect funding for campus security. The plan suggests evaluating how the Office of Public Safety receives its funding and possibly finding other sources of funding so that driving to campus is not continually incentivized” (UM, 41).
 - “Currently, we do not have the data to know how far people live from campus to calculate commuter miles saved” (UM, 43).
 - “The cost of this plan was not analyzed in detail because it is difficult to determine how much each new buyer would need for a down payment or loan. This strategy is highly dependent on market forces and the greater Missoula community development plan” (UM, 43).
 - “This data did not include athletic travel because that information was not available at the time of the inventory. Travel from student’s home to campus was also not included,” (UM, 49).
 - “Significantly reducing the University’s air travel is challenging because in order to continue the athletic program, study abroad and other university related travel, traveling by air is the most time efficient and sometimes the only means of transportation” (UM, 49).
 - “At this time more data is needed to adequately address which departmental units on campus are the highest air travelers...As shown, the only specific data calculated was from Athletics while the rest of campus was calculated as one. In order to move forward in reducing carbon emissions through air travel and developing a strong carbon offset program comprehensive data analysis research will be required” (UM, 49).
 - “By combining a variety of strategies, the University can diversify its greenhouse gas emission reduction options in the most cost effective way. As noted for several elements of this plan, more in-depth analysis is needed to determine the specific mix. This scenario is offered for the sake of comparison” (UM, 61).
-
- (UM Data Gaps Summary from Worksheet) The CAP does a good job of addressing challenges that action items may face in their implementation. Some of these challenges include high costs, lack of stakeholder support, and environmental concerns. There are many instances throughout the CAP where insufficient data is available and more detailed study is needed for implementation.
-
- “Weber State University does not, at this time, have meters on individual facilities and infrastructure components to determine utility consumption by facility” (WSU, 8).
 - “An effective method of determining university sponsored air travel does not currently exist” (WSU, 16).
 - “Overall progress is being impeded by Scope 3 emissions. As long as the vast majority of the WSU community chooses to travel to campus in a single-occupancy vehicle, it is given that

emissions from University commuters will remain high and will rise as population increases.” (WSU Progress Report, 8).

- (WSU Data Gaps Summary from worksheet) Most uncertainties stated in the CAP originate from lack of available data. Examples include shortage of facility metering for monitoring consumption and inconsistencies in university air travel data.
- (USU)“The University does not track student travel.” (42).
- (USU)“At present, there are no options for electrical power generated from renewable resources through the city of Logan.” (9).
- (USU) “In the absence of information gathering and evaluation, no educational program can be deemed to have been successful.” (16).
- (USU)“Investment opportunities for sustainability projects are often not realized because long-term operational savings are not recognized in capital project budgets.” (72).
- (USU)“Unless the campus purchases the Renewable Energy Certificates (RECs) generated from the project they cannot rightfully claim to have offset their greenhouse gas emissions through on-site renewable energy. That is because RECs are a tradable commodity that represent the attributes of clean, renewable energy.” (73).
- (CSU)“Some technologies that were considered for this plan but were not found to be viable at this time or are on the horizon today include synfuels, solar thermal, micro hydroelectric, anaerobic digestion for food and animal waste, additional cogeneration, plasma waste to-energy, algae biofuels, and other sequestration options such as capturing carbon for use on building materials.” (32).
- (CSU) “In addition to federal legislation that may affect the price of carbon, there is the potential of increased stringency in the state’s RES. The majority of CSU’s electricity purchases are from utilities that are currently required to supply 10 percent renewable energy by 2020. It is conceivable that this requirement will be elevated within the timeframe of this plan.” (34).
- (CSU)“As a living document, this plan will undergo regular reviews, and the opportunities to include new technologies will be many. A myriad of technologies on the horizon may become viable within the timeframe of this plan and alter the course of CSU’s path to climate neutrality.” (39)
- (CSU)“Currently, CSU does not include food processing and consumption in its greenhouse gas inventory. Food processing and consumption is, however, the most significant source of CSU’s nitrogen use according to the N-Print calculator.” (40)
- (CSU) “Much of the potential growth in CSU’s emissions will be driven by new construction, enrollment, and research growth, which are difficult to forecast in a continually fluctuating budgetary environment. While improving construction practices, efficiency and conservation in existing buildings can minimize the impact of this growth, the plan is still very sensitive to these trends.” (42).

- (CSU)“Utility rates – The potential cost savings associated with most of the strategies in this plan are sensitive to utility rates. Accurately predicting utility rates through 2050 is an impossible task and subsequently dependent on the cost of fuels (e.g., coal, natural gas, and renewables) and the cost of carbon in a potentially monetized carbon future. Under these scenarios, it is generally safe to assume that the cost of utilities will increase and the savings associated with these strategies will improve from this conservative analysis using today’s rates with no escalation.” (42)
 - (CSU)“Legislation – In addition to federal legislation that may affect the price of carbon, there is the potential of increased stringency in the state’s RES. The majority of CSU’s electricity purchases are from utilities that are currently required to supply 10 percent renewable energy by 2020. It is conceivable that this requirement will be increased within the timeframe of this plan.” (42)
 - (CSU)“Financing mechanisms – Legislation, tax credits, renewable energy standards, and community goals can drive the introduction of new financing mechanisms that could enable CSU to achieve some of these strategies with a minimum of up-front capital.” (43)
 - (CSU)“Changing technologies and associated costs – The technological picture with respect to the built environment, renewable energy generation, and transportation is changing rapidly, particularly with the current focus on development in these areas. There are likely to be existing technologies that become increasingly viable and new technologies that will be introduced into future iterations of this plan.” (43)
-
- (CSU)“Some technologies that were considered for this plan but were not found to be viable at this time or are on the horizon today include synfuels, solar thermal, micro hydroelectric, anaerobic digestion for food and animal waste, additional cogeneration, plasma waste to-energy, algae biofuels, and other sequestration options such as capturing carbon for use on building materials.” (32).
 - (CSU) “In addition to federal legislation that may affect the price of carbon, there is the potential of increased stringency in the state’s RES. The majority of CSU’s electricity purchases are from utilities that are currently required to supply 10 percent renewable energy by 2020. It is conceivable that this requirement will be elevated within the timeframe of this plan.” (34).
 - (CSU)“As a living document, this plan will undergo regular reviews, and the opportunities to include new technologies will be many. A myriad of technologies on the horizon may become viable within the timeframe of this plan and alter the course of CSU’s path to climate neutrality.” (39)
 - (CSU)“Currently, CSU does not include food processing and consumption in its greenhouse gas inventory. Food processing and consumption is, however, the most significant source of CSU’s nitrogen use according to the N-Print calculator.” (40)
 - (CSU) “Much of the potential growth in CSU’s emissions will be driven by new construction, enrollment, and research growth, which are difficult to forecast in a continually fluctuating budgetary environment. While improving construction practices, efficiency and conservation in existing buildings can minimize the impact of this growth, the plan is still very sensitive to these trends.” (42).
 - (CSU)“Utility rates – The potential cost savings associated with most of the strategies in this plan are sensitive to utility rates. Accurately predicting utility rates through 2050 is an impossible task and subsequently dependent on the cost of fuels (e.g., coal, natural gas, and renewables) and the cost of carbon in a potentially monetized carbon future. Under these scenarios, it is generally safe

to assume that the cost of utilities will increase and the savings associated with these strategies will improve from this conservative analysis using today's rates with no escalation." (42)

- (CSU)“Legislation – In addition to federal legislation that may affect the price of carbon, there is the potential of increased stringency in the state’s RES. The majority of CSU’s electricity purchases are from utilities that are currently required to supply 10 percent renewable energy by 2020. It is conceivable that this requirement will be increased within the timeframe of this plan.” (42)
- (CSU)“Financing mechanisms – Legislation, tax credits, renewable energy standards, and community goals can drive the introduction of new financing mechanisms that could enable CSU to achieve some of these strategies with a minimum of up-front capital.” (43)
- (CSU)“Changing technologies and associated costs – The technological picture with respect to the built environment, renewable energy generation, and transportation is changing rapidly, particularly with the current focus on development in these areas. There are likely to be existing technologies that become increasingly viable and new technologies that will be introduced into future iterations of this plan.” (43)

- (USU)“The University does not track student travel.” (42).
- (USU)“At present, there are no options for electrical power generated from renewable resources through the city of Logan.” (9).
- (USU) “In the absence of information gathering and evaluation, no educational program can be deemed to have been successful.” (16).
- (USU)“Investment opportunities for sustainability projects are often not realized because long-term operational savings are not recognized in capital project budgets.” (72).
- (USU)“Unless the campus purchases the Renewable Energy Certificates (RECs) generated from the project they cannot rightfully claim to have offset their greenhouse gas emissions through on-site renewable energy. That is because RECs are a tradable commodity that represent the attributes of clean, renewable energy.” (73).

Summary of clear subthemes:

When assessing data gaps within climate action plans several subthemes occurred:

Though technology has attributed to the improvement of environmental conscious efforts on campus, it has also caused a false sense of security. New technology has progressed at an impressive rate over the past ten years, and has made projects that seemed unattainable, achievable. This was especially prevalent in projects related to solar energy for sustainability coordinators like Carol Dollard at Colorado State University. However, as administrators and upper division staff has overseen these technological advancements, they have become complaisant, relying on future technology instead of administering viable options today. This leaves data gaps within climate action plans as certain attainable technologies that would be considered for projects within the plans were found to be nonviable options due

to associated costs, and the lack of knowledge for possible cheaper options.

Another subtheme that was apparent throughout several institutions was the ability to engage faculty and students. Multiple faculty members involved with the climate action plan reported difficulty in collaborating with groups outside their own departments. Many cited this was due to their difference in exposure and focus effecting prioritizing for this work. Alexi Lamm, sustainability coordinator at Utah State University, said “I feel like when I am working with people, a lot of people are kind of like one crisis at a time. I am dealing with a few other things right now, but I’ll get back to you next year maybe”. This outlook can lead to data gaps as university faculty are not on the same page regarding the priority of climate action plan projects. This leads to barriers in the progress for moving climate action plans forward.

The lack of involvement of faculty can also lead to a lack of funding and involvement of stockholders. Getting buy-in from stakeholders, faculty, and students can result in inability of institutions being able to advance their own climate action plans due to its effect on funding needed to complete projects. Most institutions require research in order to evaluate the feasibility of planned projects, however, this can take several years or more, especially if stakeholders, faculty, and students are not engaged facilitate the work leading to gaps in data.

Lastly, several institutions have a difficult time collecting scope three GHG emissions in regard to air travel. Though air travel is the most time efficient and, in some cases, the only means of transportation for conducting research, study abroad, athletic programs, and student commute, it can be the hardest to track. This type of emission is more elusive and harder to track in terms of measure leading to gaps in data.