**CAP Retreat 2023 Re-Cap: Mt. SAC Climate Action Plan**

**Episode 181**

**Tania** (00:00):

A lot of students have this real strong barrier to come to our offices. If we're sitting somewhere under a tree in a designated spot that's there for faculty to hold office hours for example, then we might have more students come to us. If they want to talk to us about something confidential, we can always still go to our offices.

**Tania** (00:19):

But to have a space with whiteboards and to just be out there and engage with the students, those are some opportunities that I think we have and that should go into the next CAP.

**Christina** (00:33):

Hi, I'm Christina Barsi.

**Sun** (00:34):

And I'm Sun Ezzell. And you're listening to the Magic Mountie Podcast.

**Christina** (00:39):

Our mission is to find ways to keep your ear to the ground, so to speak, by bringing to you the activities and events you may not have time to attend, the resources on campus you might want to know more about, the interesting things your colleagues are creating and the many ways we can continue to better help and guide our students.

**Sun** (00:55):

We bring to you the voices of Mt. SAC from the classroom to completion.

**Speaker 1** (00:59):

And I know I'm going to achieve my goals and I know people here are going to help me to do it.

**Speaker 2** (01:04):

She's a sociology major and she's transferring to Cal Poly Pomona, Psychology major, English major.

**Sun Ezzell** (01:11):

From transforming part-time into full-time.

**Speaker 1** (01:12):

I really liked the time that we spent with Julie about how to write a CV and a cover letter.

**Christina** (01:20):

Or just finding time to soak in the campus.

**Speaker 1** (01:22):

Think of the natural environment around us as a library.

**Christina** (01:26):

We want to keep you informed and connected to all things Mt. SAC. But most importantly, we want to keep you connected with each other. I'm Christina Barsi, Mt. SAC alumni and producer of this podcast.

**Sun** (01:37):

And I'm Sun Ezzell, Learning Assistance Faculty and Professional Learning Academy coordinator.

**Christina** (01:42):

And this is the Magic Mountie Podcast.

**Voiceover** (01:49):

If you missed the CAP Retreat 2023, then in this episode you'll get a recap of CAP. The Climate Commitment and Environmental Justice Committee acts to advocate, guide, and inform the campus community about the Climate Action Plan. The carbon commitment, and the sustainable and equitable implementation of the requirements of the CAP and carbon commitment. Enjoy.

**Eera** (02:19):

So, good morning, everybody. How you guys doing?

**Audience** (02:21):

Good.

**Eera** (02:22):

Thank you first and foremost for making time to come to today's Climate Action Retreat. We're really excited to brainstorm some ideas and make this not just a plan, but an actionable plan. So, let's get started. Good morning. For those of you who don't know me, I am Eera Babtiwale, I'm Director of Sustainability on the facility side. And Tania.

**Tania** (02:43):

I'm Tania Anders and I'm the sustainability coordinator, which is a faculty position appointed by the Academic Senate. And we've really been working very closely together for the last two years or so. So, we're happy to be here.

**Eera** (03:00):

Thank you again. And we've been working with all of you in some sort of capacity. Some of you are from our campus, some of you're from outside of our campus, but all of you are part of our community and we're really excited to have you here today.

**Tania** (03:11):

One of the changes in terms of messaging that we're doing with CAP '23 is to infuse the sustainable development goals, which touch on the three pillars of sustainability, which is our planet, our people, and our prosperity.

**Tania** (03:30):

And very often people, when they hear the word sustainability, think of the planet side of it only. And so, a big push that we want to make with this new Climate Action Plan is that we maybe lift up a little bit the other two pillars as well, so that people can see themselves in being part of it.

**Tania** (03:51):

As a campus community, I'm faculty member as I mentioned earlier, and when I talk to people like infuse it into your classes, they're like, "Well, I don't know how to do that. I'm not in the sciences like you." And it's like, it's about zero hunger, it's about prosperity, it's about gender equality. Everyone can infuse sustainability into their courses.

**Tania** (04:16):

So, really at the center of the three spheres of sustainability, that's where we want to see all of us as a Mt. SAC campus community.

**Tania** (04:26):

So, Eera gave a little bit of a background of the 2018 CAP. We now report out to second nature as she mentioned. And one of the requirements is that we revise our CAP every five years. That's why we're all here. Because we're now in that process.

**Tania** (04:42):

So, one of the really big accomplishments I think that we made with the 2018 CAP was that we now have a sustainability director and a sustainability coordinator. We're the first ones in this role on our campus. So, I think that was a major goal that was accomplished so that we can help with the implementation of the CAP and really push that forward.

**Tania** (05:06):

We also have changes in the laws all the time. We'll touch on that a little bit later. It's really helpful that we are in the state of California, I'll say, because the state is also making big efforts in helping reduce our carbon footprint, for example.

**Tania** (05:25):

So, I know all of you in the room here are aware of the IPCC reports, Intergovernmental Panel on Climate Change rate resource. They report out every couple of years, but really it's more or less annually at this point that they give some kind of publication updates.

**Tania** (05:41):

And we are responsible for a lot of other changes happening on our planet. So, it's a great resource. As I mentioned, the state of California is doing a lot. It wants to be carbon neutral by 2045. So, that helps us in our efforts.

**Tania** (05:59):

Also, the California Community College system has really strong goals that it wants to achieve. So, that's another way for us to push forward at Mt. SAC to say, look, we are a community college here and these are the goals set forth for the community colleges. We need to do our share.

**Tania** (06:16):

And again, the messaging with the sustainable development goals, that's a big part of CAP 23.

**Tania** (06:23):

Here is some of the goals that the California community colleges have set forth. And so, for example, by 2025, very ambitious goal is to reduce greenhouse gas emissions to 50% before the 1990 levels. Just to give you an example.

**Tania** (06:38):

Eera's going to pull up the project here. So, that's the energy group.

**Eera** (06:44):

Okay, so the first focus group is energy. So, Ken Bohan is a big piece, a big voice of that. Bill Asher, Director of Maintenance and Operations. Janet Truttmann, Louis Vayo who you also just met. Fernan Siocon, who is the Senior Project Manager and also a mechanical engineer at Mt. SAC. Myself, and then our amazing student intern, Tracy, is also part of our focus group for energy.

**Eera** (07:06):

So, it's a very big group. We meet actually every week. The other focus groups meet every two weeks. And we talk about all the nerdy things around energy, which is a big deal, especially right now.

**Eera** (07:19):

Energy is basically scope one and scope two. So, it's a big component of our carbon footprint. As mentioned, scope three, which is transportation and waste is the biggest component of our carbon footprint.

**Eera** (07:29):

But scope one and scope two are a really big piece, especially right now because of all the focus on renewable energy and coming off of our reliance of gas. So very, very important to discuss.

**Eera** (07:40):

But I also wanted to give you an opportunity to hear from Tracy who's our sustainability intern because understanding our climate and our environment and the effects of being in this particular zone is crucial to understanding what strategies are best to mitigate carbon emissions. So, with that, I'd like to ask Tracy to come up.

**Tracy** (07:59):

Hello. My work is collecting and analyzing environmental data. So, it is about recording and summarizing climate data for different climate zones. And this include temperate, humidity, sun, wind, radiation, and many other things.

**Tracy** (08:17):

So, I learned to use the climate consultant, which is a tool that we collect data, and we choose the proper model that meets the requirements and we record graphs and make simple analysis of the graphs.

**Tracy** (08:34):

So, the sun shading graph, it help us to design the sun shading equipment to maintain the comfort of the room instead of using electric appliance such as air conditioners. There is some percentage before each design strategies, which means the frequency of its use, the larger the percentage is the more suitable it is for this climate zone. So, we can find the best set of design strategies of the buildings. Thank you.

**Eera** (09:08):

I mean that's really awesome that Tracy just jumped right in. Environmental analysis is not her focus and yet she was able to really jump right into that program and begin to use it. And this is something that's going to help us or that tool's going to help us hone in on specific strategies that are the best fit for our campus. So, big, big round of applause for Tracy because she's just amazing.

**Eera** (09:32):

So, the energy focus group, I mean the purpose, I could read this, but basically, we all know temperatures are rising. Global warming is an issue that's not really a dispute at all. But what can we do? In terms of energy, we can really optimize how we use energy on campus. Ken has been working really hard at that with his team. And then we can also then offset with renewable energy.

**Eera** (09:53):

But the first step is to really understand how we are using energy and why we're using energy during certain times of the day, certain times of the year.

**Eera** (10:00):

And also making this connection with our community. So, we know that we serve a great number of students who are coming from disadvantaged communities. Those same communities are impacted by power outages. So, they're coming to our campus for reliable clean energy and it's our responsibility to provide it for them.

**Eera** (10:20):

Because we know that if they can come here and study and plug in, they're going to have a better ability to learn. They're going to progress; they're going to succeed. So, energy isn't just about saving money and dollars, although important. It's not just about solar panels, it's about student success.

**Eera** (10:36):

So, for us, our job is to really analyze the data, generate a list of strategies that's going to help us mitigate emissions because of energy. And then again make that connection to student success.

**Eera** (10:47):

A little bit about the energy in California and what California's looking to do. So, by 2045 the state wants to be off the grid. It seems like a really tall order, but if you look at our portfolio of energy, a good percentage of it is coming from renewables already.

**Eera** (11:01):

By 2045, we hope to be entirely off of the grid and using clean energy, both in terms of solar and even some wind, but also looking at energy storage in our state. What this tells us is that we're well positioned. So, we have the support that we need at the state level to ensure that we have the ability to be off the grid here at the campus.

**Eera** (11:23):

And then I'm going to ask Ken to share the data that he's been able to collect for the utilities.

**Ken** (11:29):

Okay, so the biggest challenge we have is trying to reduce energy consumption. And we have greatly changed our campus, all the massive buildings going in and they are energy hogs. I will tell you we have the nicest pool in California, but one of the requirements of having a swimming water polo program is you maintain 80-degree temperature in the water. And so, that's 24/7.

**Ken** (12:06):

And with these two new buildings, we've added 275,000 square feet of high technology. And I will tell you, we just opened the student center for those that attended the nursing program graduation. And it was a challenge. We expected 700 people. I think we had a thousand people. There were people packed in the hallways.

**Ken** (12:35):

But again, the technology having to make adjustments and drive that space to the required temperature. Normally what we do is we mix our chilled water; we make it a little bit warmer so we can extend it through the day.

**Ken** (12:54):

So, our strategy is we have a 2-million-gallon thermal energy storage tank, which is in the north parking lot. You can drive over the top of it. It is the concrete section. There is actually a massive tank below that. So, what we do is we charge up that tank at night and after 9:00 PM it is a lower rate.

**Ken** (13:21):

So, I get started each night after nine and I have to work my magic and pray the chillers start up. So, I've developed a procedure. I have chiller number three. There are three centrifugal chillers. They're kind of unique. We run R123 and that refrigerant is an old refrigerant but it's very efficient and when it runs, it actually runs under a vacuum.

**Ken** (13:50):

So, that's very good for us because it minimizes any leakage. So, we have 2,400 tons of chilling capacity in our chiller plant, and we have two additional chillers over in the theater building, two hidden way up on the roof. So, combined we're close to 3000 tons of cooling on campus.

**Ken** (14:14):

Now when we get to September, October, I will have to use every little bit of that cooling capacity. So, when we hit the two weeks of 105, we had various names for those two weeks, which I cannot repeat here. And so, very difficult. It really stressed the system out. Hence, we had to run all five chillers during the day in addition to the 2 million gallons, which lasted six hours. So, it was very brutal, very draining. And we had excessive penalties. We had to pay to SCE because of that.

**Ken** (14:57):

We hope we don't see that again. But when it does occur, our first goal is to provide a suitable temperature for the campus. So, our big spikes in natural gas have been caused basically by our beautiful monstrous pool. We've got 1.4 million gallons of water that we have to heat up every day and every night. It's spectacular operation, if no one's seen it. We actually have a separate diving pool with a competition pool, and we are the only ones I know of that has a hot tub spa next to the diving pool.

**Eera** (15:43):

So, it's a lot of demand, a lot of demand. I mean all these new facilities are amazing and beautiful, but they consume a lot of energy and that means we have to be very innovative about how we want to supply all that energy.

**Eera** (15:56):

And Ken's been working really hard to really fine tune operations. So, we're not consuming so much with the existing buildings. So, you take the kilowatt hours, and you take the therms and you get kBTUs and then that's what our overall carbon emissions look like from 2019.

**Eera** (16:10):

And why we use 2019 as a snapshot is because that was really when we were at full tilt, right before COVID hit. So, that's a good reference here. We'll probably ramp back up to that. And with these new facilities, even more energy consumptions coming online.

**Eera** (16:24):

So, what does it tell us? It means that we really have to start getting real about our energy consumption and offsetting energy. Do you want to talk about the heat map?

**Ken** (16:34):

Yeah. So, you’re going to look at your biggest buildings, you're going to look at your science building. I don't know if anyone realizes we've got people from the science community. We have 100% outside air handling units in the science buildings. We have a lot of fume hoods, lab hoods.

**Ken** (16:54):

Because of chemicals, you cannot recirculate the air, hence you're going to have a hundred percent fresh air. You don't send it back and recirculate it and obviously it costs you a lot more in energy cost to treat a hundred percent outside air.

**Ken** (17:13):

So, typically you are recirculating 80% and you've got anywhere from 10 to 20% outside air to get fresh air into the building by code. So, in unique buildings, building 80 has some food service. Anywhere you have a kitchen is also going to be a hundred percent outside air. So, these are areas and zones which are energy hogs.

**Ken** (17:41):

So, the big thing on natural gas, the first approach is to take out lower efficient boilers and go to higher efficient and then eventually to go to new technologies.

**Eera** (17:55):

In terms of what that means per person, if we looked at all the pounds of CO2e, which is carbon dioxide equivalent, that's how we measure carbon footprints. In 2019 we were at 15.1 million pounds across our unduplicated student headcount and across about 270 days or so, in terms of the academic year anyways, that means about 0.8 pounds of CO2e per person. That equates to about 1.5% of a person's daily carbon footprint.

**Eera** (18:22):

That doesn't seem like a lot if you think of it that way. But if you think about it in terms of what they're actually doing, they've just inherited that carbon footprint. They're just attending class; they're just going to PrimeStop. They're not actually turning on the lights, turning on the AC, doing any of that. They're there for a split second, maybe a few hours and then they're off to the next class.

**Eera** (18:44):

So, they've inherited those 0.8 pounds of CO2e per day. It's our job to make sure that goes down to zero. So, these are the phase energy goals. By phase one we want to get to a 50% reduction and that's by 2030, by 2040 when we want to get to 80% reduction. And then by 2050 or sooner, we want to get to a hundred percent reduction in terms of energy use emissions. So, we think it's doable.

**Eera** (19:08):

And then this is one of the ways that we can do that. We're currently looking at bringing solar onto our campus anywhere between 2.3 to 2.7 megawatts of energy. That'll offset about 18 to 20% of our total energy consumption before tech and health, before student center. So again, it's a balancing act.

**Eera** (19:26):

And then we're also in the process of doing what's called a decarbonization plan. So, our same energy focus group is part of this focus group and that is the big plan. But it looks at coming off of our gas reliance by 2045.

**Eera** (19:38):

The detailed work that Ken goes through is no small order. It's a big task. And making sure that our campus is running smoothly, and people are comfortable is a very big responsibility. And then balancing that with how much gas we're using, how much energy in terms of electricity we're using is also a really big responsibility and keeping it all together. I also want to touch on our zero-waste group next.

**Eera** (20:02):

So, this is all the members. We have folks from M&O, folks from management, folks from faculty for our students. It's actually a really big group. And I think partly because there's such a tangibility to waste, it's an everyday thing. We all produce waste, and we all understand it to be a challenge. But again, it's also an opportunity.

**Eera** (20:20):

So, the waste sector is responsible for methane and methane is 80 times more potent than carbon dioxide. So again, another really big opportunity for us to make an impact, positive impact. This is a snapshot of landfills in the area and the stars denoting where we're located.

**Eera** (20:35):

Again, if you were to superimpose this on the disadvantaged community map, a lot of the same areas, the same zip codes are near these landfills. So again, our disadvantaged community, majority of them are coming from food deserts. Why I'm bringing this up is because food waste of course accounts for a good portion of our total waste on campus. How can we be better about that and not throw away food and really serve our community better?

**Eera** (20:59):

So, our goals and objectives are to reduce greenhouse gas emission and we have the opportunity to take action right now on our campus in real ways.

**Said** (21:08):

So, we are talking about the carbon footprint. And she just mentioned above methane. So, when it comes to this, California came in 2018 with this new bill. It says that by 2025 we're trying to reduce short-lived climate pollutant, which is referring to the waste that we are coming from the food. That's the one causing almost 45% of the greenhouse gases, methane, black carbon and hydrofluorocarbon.

**Said** (21:40):

Even though they're short-lived, but the whole thing is that it is doable. We can still stop it. You have to be careful which city that you live. From 2020 I think January 1st, it is kind of a mandatory that you have to kind of take care of those organic waste away from your trash. We can actually handle that.

**Said** (22:02):

So, these are some of the goals, by 2025 we are making sure that we are going to achieve our target as almost 75% reduction. I think one of the way when it comes to the food waste, what is one thing comes to your head? How we can reduce those? Composting. That's the way we're going.

**Said** (22:23):

So, perfect example, she said that 2019 that we all start from there. The diversion is meaning that how much of waste we are trying to keep away from the landfill. So, what are the ways you can keep the food from the landfill? Reuse, recycle.

**Said** (22:38):

By 2022, we are actually doing much better when it comes to we're recycling. We're trying to reduce the organic waste. Even all this organics waste, all those, the green waste sometime when it goes to landfill, because recently, I was in Maryland, there was a landfill fire. It is causing from there, it's no fun. When you have those smoke coming out of a landfill, they're very toxic.

**Said** (23:04):

The air quality index pretty much jump from 50 to 401 in a day. But some of the trash is that stuff that which we can recycle. We will recycle the one we can reuse; we do have program in here in Mt. SAC. If you want to know more detail about that, other than that we also have the universal waste and how we are trying to do, there's nothing much we can do from what the biologists or chemistry is generating at that. There's no way we can reuse or recycle those that's beyond our scope.

**Said** (23:34):

But then we're trying our best to reduce the waste also over there. So, how much off we are actually stopping? So, obviously when it come to 2020, we went down because that's the COVID period.

**Said** (23:46):

This probably mostly that probably we did not have enough data to show what we have done and then but again we just climbed up and we are kind of steady. So, amount of the waste that we are recycling and reusing. That's why Eera was asking that come up with your reusable cups.

**Said** (24:02):

You all know about those Big Bellys and everything that we showed over there. As a student, encourage yourself to use those and read them. It says which goes where. It does help in terms of not only the waste, also the energy manpower to go and take those trashes out from there. So, just help us in that aspect too.

**Eera** (24:22):

Thanks so much. So, Said does amazing work and we're going to continue to work together so that we can really amplify all the different opportunities to recycle on campus and also all the opportunities to responsibly dispose of our universal waste.

**Eera** (24:36):

So, if you have batteries or different types of tech that you need to bring to campus, we'll eventually have a place that is very obvious and very approachable to use.

**Eera** (24:46):

So, 51 pounds of waste per person annually is what we're currently sitting at. Again, we want to get to zero. We want to be able to see how we can reduce that to the absolute bare minimum.

**Eera** (24:56):

So, you might see in the Big Bellys that Said just mentioned, those Big Bellys we have four currently that have been installed. They're called trios of Big Bellys. So, one for landfill, one for a cycle, one for organic collection, which is new for our campus, and we're really excited about that.

**Eera** (25:11):

The new student center is getting 11 more. The new health and wellness is getting 12 more. The new tech and health is going to have a whole bunch as well. So, slowly but surely, we're converting all of our exterior receptacles to be these guys and interior wise we're also going to revamp that so that we have a more sinuous set of receptacles for interior use as well.

**Eera** (25:30):

We participated in the campus race to zero waste this year again, two years in a row we placed 10th. Big shout out to PTK and Eagle who participated with us. Understanding food waste is a big piece of that. To help us understand that we've worked with Rolando, our sustainability in turn to conduct a food survey.

**Rolando** (25:50):

I worked on the food survey which generally focuses on food waste and food selection habits on the student population. I was looking at prior existing surveys from other educational institutions, how they were delivered to their student population, what types of questions they asked and the types of answers they gave.

**Rolando** (26:13):

And then I tailored that to Mt. SAC so that we could get an understanding of the student population behavior in terms of their campus dining. Maybe feedback in terms of what they want implemented, whether that be like more vegan or vegetarian options. Also understanding their waste disposal habits and maybe why they're not able to compost or if they don't understand it.

**Rolando** (26:35):

And myself and Eera managed to collaborate with other departments from the school such as the food pantry and Sodexo to gather information and see how we could implement that and move forward collectively. And this all ties back into the CAP goal of the race to zero emissions and reducing the 12% of our total emissions, which is due to solid waste to eventually zero hopefully one day.

**Eera** (27:03):

These are our zero waste goals. So, by phase one we want to have 70% waste diversion. Phase two, 80%, phase three, 100% waste diversion.

**Eera** (27:12):

Transportation is the behemoth of our carbon footprint. These are all the wonderful members in our group. So, we have Raul Madrid, professor of Poly sci, Aaron Salinger who's here, professor of Chicanx studies. Aubrey Kellum with Campus Safety. Denise Franco, community services officer. They're both within the parking department.

**Eera** (27:30):

Jaime Rodriguez, he's senior research and analyst with REI. And then myself and Jasmine Jean and Stephanie who are both students who participated in our various meetings.

**Eera** (27:39):

Transportation is a big piece of our carbon footprint, not just here at Mt. SAC but nationwide, statewide. So, there is certainly a lot that we can do not just to reduce emissions. Again, if we're talking about where our students are coming from, there's just a lot more we can do to help them get here safely and more sustainably.

**Eera** (27:56):

So, majority of them, no surprise, are commuting to our campus usually in single occupant cars. So, we know that there's a lot of work that needs to be done. And in our focus group, what we've talked a lot about is the fact that there isn't enough infrastructure in place to make it happen. And so, we need to really be that model for others to emulate. And that's going to be what we focus on today as well.

**Eera** (28:19):

Transportation, it's not just about how many miles we're commuting and how much carbon dioxide is being emitted, but how much methane is being emitted, which again is so much more potent than carbon dioxide.

**Eera** (28:29):

We know that we want to focus on the following, increasing access and awareness of environmentally responsible transportation by a hundred percent. Increase bus ridership and increase bike ridership by certain percentages. And then as a result of doing those things, reduce our emissions.

**Eera** (28:44):

To help us get there because this is such a big animal to sort of understand, we have also issued that transportation surveys. So, it was really successful in terms of how many people have responded. It was a long survey, about 28 questions, but we had 928 respondents, which I'm told is a pretty good number. It opened in April and actually it ran till the end of this week. And revises again data on greenhouse gas emissions but data on lifestyle and habits. Which is very, very key.

**Eera** (29:12):

So, one of the questions of course, how do you get to campus? We know most people are driving by themselves. How often do they use public transportation? Most people barely or hardly ever, never use it. But why? So, if you don't use public transportation, what keeps you from doing that? So, majority of people are saying it takes too long, it's not reliable, it's not on time, it doesn't stop where I need it to stop. It doesn't even show up. Perceived safety conditions.

**Eera** (29:37):

So, this immediately tells us what we need to focus on, what we can do better, because we have a whole transit center, a bus transit center coming to our campus. Do you know that it's opening? Our students, majority of them don't even know it's opening in a few weeks. So, what do we need to do better? This transportation focus group can help really promote that bus transit center.

**Eera** (29:58):

So, what would help making public transportation more attractive? Well, kind of the inverse of the former question, it needs to be more reliable. There needs to be shortened travel time. We need more access. Mobile apps, more cleanliness, fewer transfers.

**Eera** (30:12):

So, we've just got to make it easier for them to get to campus and make it easier for them to get to campus using the bus.

**Eera** (30:18):

So, micro transportation, what factors are keeping you from using micro transportation? Again, takes too long, perceived safety conditions. Not enough infrastructure which can solve maybe the first two issues. So again, this helps us hone in on what we need to do in terms of strategies.

**Eera** (30:34):

So, a lot of people intend to buy an electric car in the next couple of years. So, in terms of infrastructure there we know that we can do a lot to help support people who want to drive EVs.

**Eera** (30:44):

So, I'm going to jump to the water focus group next. So, our water focus group, it includes Ruben Flores who's our grounds manager, so helps keep our beautiful campus and the horticulture and all the irrigation around it up to date. John Gaston, who's here, he is our senior project manager over in facilities and has quite a few civil projects under his belt. Cesar Castaneda, he's our irrigation specialist. Steve Walters, our lead plumber, Steve Williams, professor Steve Williams, professor of horticulture and then myself.

**Eera** (31:10):

So, in this focus group what we really wanted to do is dive in, no pun intended to the fact that it's not actually part of the calculation of a carbon footprint, but it is actually always a part of our climate change challenges. And arguably it's probably one of the biggest challenges that we face in terms of climate change, water security in terms of water safety and also just access to water, especially in California.

**Eera** (31:36):

So again, we're analyzing different strategies and generating a list of recommendations. And even a draft water policy.

**John Gaston** (31:42):

You may have all heard that we've just come out of a 22-year drought, so that an agreement was just signed here just last month between the lower basin users here to reduce water use by 3 million acre feet a year over the next few years.

**John Gaston** (31:57):

So, this now has to take place and actually it's a short-term fix because they need to have a major agreement by 2026 of reducing water here in California.

**John Gaston** (32:07):

A year ago, what the state of our reservoirs was. And currently as you know, we've had a lot of rain. The reservoirs are filling, if anything we're going to have too much water and we don't know what to do with it. We're not capturing it and that's a major problem is capturing that water. But our reservoirs are filling and would probably be filled here very soon.

**John Gaston** (32:23):

The Delta Conveyance project is taking place up in the Delta region, has been going on for years and it still hasn't started construction. It's supposed to capture water coming off the snow melt and secure the region from environmental disasters and afford us more water here and down in the South. But we'll likely not see that for many, many years.

**John Gaston** (32:44):

And of course, the drought itself A year ago the major drought that we were in and now currently we are in a very good state. But you know the climate changes. We've had a 22-year drought, who knows what next year will bring. We may be back to a drought again.

**John Gaston** (32:57):

And then consumption of water here on campus. When we had a major break here that the usage was much more during times of COVID, maybe a little less but now it's back up again.

**Eera** (33:09):

So, in terms of water use demand, so majority of our water is going to, anybody has a clue? Irrigation. So, a lot of our water, just a smidge is going to people and space heating if you will. But majority of it's going to irrigation.

**Eera** (33:23):

So, this is the average monthly play field water consumption. So, all this data was actually provided by John Gaston who's done a lot of work to analyze the data in terms of where our water's going. So, he's actually been working really hard on the wildlife sanctuary as well and working with city of Pomona on addressing the ruptured line along temple.

**Eera** (33:43):

And then also conversations with Walnut Valley Water District to look at recycled water opportunities. Basically, it's about six gallons per person per day. An average California household uses 48 gallons per day. So, six gallons per person per day is what a person is "responsible" for here on our campus.

**Eera** (34:01):

And so, by using recycled water, that number can go down significantly because we're not using a one time a virgin water resource for irrigating play fields, for example.

**Eera** (34:10):

In terms of our goals, by phase 1 2030, we want to see a 10% reduction in potable water use. That includes both domestic and irrigation. And that's because we're in the midst of bringing new buildings online. We have a ruptured line that we have to fix. We still need to have really concrete conversations with the various agencies to bring recycled water in.

**Eera** (34:29):

By phase two, we think we can achieve a 70% reduction in potable water. And that's because if we bring recycled water in, then we're no longer using drinking water for irrigation. And then by phase three we think we can get to about 80% reduction. So, we can't see 100% reduction, we don't recycle and treat our water here on site, but we think we can get to an 80% reduction in potable water by 2050.

**Tania** (34:51):

So, focusing in on the four different areas now, the curriculum integration and learning environments, I wanted to just share a few things with you there. Benjamin Brown, he has put together a curriculum for a sustainability course. It's on the books for this fall for the first time. So awesome.

**Tania** (35:11):

Those of you not familiar with how to write a curriculum, it is much harder on the credit side because we are community college, we can't just write up new courses. I taught at a four-year school for 15 years and I was like, oh, I have this idea for course, let me just write it up, run it by the department. And it's like go for it.

**Tania** (35:28):

It's not like that when you're at a community college, you have to make sure it's either transferable or it's part of a local degree has to be at 100, 200 level. So, meaning the first two years of the students’ experience. And so, you can't just write up a course and run it and that's why it's taking us a little bit longer.

**Tania** (35:48):

But what's really awesome is that we have examples in the state where this has already happened. I'm Senate Vice President, so I've been going to state senate meetings, and I met someone from San Diego who sent me all of his stuff. He said, this is how I went about to get it going. So, that's definitely one of my goals for CAP '23 is to get a sustainability degree. And so, it's a local degree. Again, it's really hard to get these transferable.

**Tania** (36:14):

And I'm going to ask one of our students up here who has invested a lot of time into researching, actually a couple of our students, researching degrees at two-year schools and four-year schools. Paul?

**Paul** (36:26):

Yeah. So, one of the topics that I researched was sustainability programs in community colleges. I found about 10 different campuses around the area that offer sustainability degrees. Some of them are non-credit and some of them are credit.

**Paul** (36:40):

And also, the more notable programs that I found were at San Diego Mesa College. They offer a AA degree in sustainability. Santa Monica College also offers multiple degrees in more technical side of things such as solar, affordable TEAC installations and energy efficiency and resource management. And those are both AS degrees and they also offer certificates for those.

**Paul** (37:01):

And then also Citrus College offers an AS degree in water efficiency management and natural resources and forestry. And Pasadena City College offers an AS and certificate degree in sustainable building construction.

**Paul** (37:13):

And so, these are kind of important programs to know because they'll inform how we want to kind of form our own program at Mt. SAC. Yeah.

**Maya** (37:20):

Hi. I am Maya and I focused on four-year universities with sustainability degrees and Adib isn't here, but he also specifically focused on bachelor's degrees. So, I kind of have a little condensed chart of a few really notable universities.

**Maya** (37:37):

So, I thought it was really interesting that UCR has sustainability studies and environmental sciences, and you'll see sustainability studies is focused on the gender and sexualities department. So, I really thought that their emphasis in both gender and sexualities and sciences is really interesting.

**Maya** (37:57):

And then I'm also working on comparing Mt. SAC courses and how transferable they are and working on a percentage of what you can do at Mt. SAC towards these degrees.

**Paul** (38:07):

So, another area that I researched were sustainability careers. There were different careers that were offered in the sustainability field. It is a pretty broad field. So, I found careers that students can have with different degrees in an AA degree or a bachelor's up to a master's degree.

**Paul** (38:26):

Some examples include sustainability manager, like we have the director and coordinator here at Mt. SAC, a conservation or natural resource technician, a field biologist, environmental consultants, and also positions in urban planning.

**Paul** (38:38):

And we also set up students for careers in sustainability at Mt. SAC by offering, I think we have a solar installation program here that's non-credit. And we also have the air conditioning and refrigeration program, which is an AS degree and also a certificate program at Mt. SAC.

**Paul** (38:52):

So, we do offer some opportunities for careers in sustainability already, but I think being more aware of the different types of careers will help us understand how we can offer more of those here at Mt. SAC.

**Tania** (39:03):

So, we have internship opportunities here on campus. We had maybe two-year, three years ago now a student who developed a sustainability tour. So, we really want to use her material so that we can build on that and actually offer regular tours.

**Tania** (39:21):

We've had students work closer with Eera. We've had really the big push this semester where we were able to use some of our funding that we get for our committee to support our students. Two of our students were also supported by SSEED, so we're trying to really spread.

**Tania** (39:37):

We also help students find internships externally. And a few examples which HMC Architects where Eera used to work as one example.

**Paul** (39:47):

Yes. So, I'm speaking for one of the interns who couldn't be here today. Her name's Gladys and she researched internships and volunteer opportunities across the state. She found a couple paid internships as well as unpaid volunteer work. And they kind of ranged across different fields such as the California Conservation Corps and also different opportunities like with the

**Leo** (40:08):

Hi everybody. I'm Leo. Throughout working with the sustainability and CAP program, I've learned that many of our goals and projects that we're seeking are long-term pretty much. And some of us interns will sadly no longer be here to continue our projects as we transfer to four-year universities.

**Leo** (40:23):

So, here I've created a proposal to keep us student interns sustainable within the sustainability program. This is the Sustainability Internship Continuation Structure or SICS. And this is what a future hierarchy could look like for the new internship program.

**Leo** (40:39):

Of course, the sustainability department director, which is a staff run position, obviously final say and just checks in with interns. And the next position, which would be the intern project manager. And so, the project manager would go on to lead experienced interns and junior interns, department directions, and of course with the department director.

**Leo** (41:01):

And for the next one we have senior experienced intern, which would be assigned a junior intern and they would mentor the junior intern, which would be a sort of like, they would work for like one year and anyone that's moved on wouldn't be an intern at all. And for the junior intern, once they come in, they would be mentored by this experience/senior intern.

**Tania** (41:25):

So, one of the areas that we've had already on our campus for a number of years, I think year seven or so we're in, is Student Sustainability Awards. And this is an opportunity for our students to be recognized for work that they do either in their classwork or also outside.

**Tania** (41:42):

So, for example, some groups have done park cleanups in communities near Mt. SAC. It's been great to have this, and it's been great to have the funding for it, two and a half thousand dollars every year. But since the pandemic, we've really been challenged with students submitting work and we need to get better at advertising it. So, another area where I would please, please, please like to get feedback from you how we can grow this again.

**Tania** (42:10):

So, this section is also about outdoor learning environments. Here are just some examples. We already have a lot of amazing outdoor teaching spaces like the wildlife sanctuary. And we have the sustainable gardens that Steve is working so much with.

**Tania** (42:25):

But we also want to think about outdoor teaching spaces and engagement spaces for faculty to, for example, offer office hours. A lot of students have this real strong barrier to come to our offices. If we're sitting somewhere under a tree in a designated spot that's there for faculty to hold office hours, for example, then we might have more students come to us. If they want to talk to us about something confidential, we can always still go to our offices.

**Tania** (42:54):

But to have a space with whiteboards and to just be out there and engage with the students, those are some opportunities that I think we have and that should go into the next CAP.

**Tania** (43:04):

So, the phases, we don't plan till 2015 necessarily. We want to have shorter steps, incremental steps. So, 2025, 2030, and 2035 is what I have. For example, if we want to get to 50% of the students hearing about sustainability by 2025, it needs to become part of the student orientations when they onboard. This is how we can capture all of them.

**Tania** (43:29):

So, these are just some suggestions. Of course, sustainability department and sustainability center, those are some big-ticket items that I would like to see in the new CAP.

**Tania** (43:38):

So, our professional development for all employee groups is the second part of the presentations for us here. We have a professional development plan, and the sustainability is included in this plan. So, it's on the radar.

**Tania** (43:56):

There are really daily opportunities. And I want to emphasize again the three pillars of sustainability. It's not necessarily only about taking a professional development course for the faculty, which I'll talk about more in just a moment.

**Tania** (44:09):

But it's really about thinking differently. Like you all here, so many of you brought your own mugs. We can all do that. We need to just do a mental shift, bringing our own things. We have the water refilling station. I want to … since we have so many students here, also, this is because associated students pushed for it. We have the water filling station on our campus. They're the ones who started that. So, thank you students for making sure that we think about those things.

**Tania** (44:44):

We heard about the waste bins already, so make it a habit. And you heard earlier, please use them the right way. Educate yourself, read about what goes in what. We have the amazing wellness center. We heard about the pool. They shouldn't keep it at 80 degrees for nothing.

**Tania** (45:00):

We should all be over there every day. Because that is part of the people aspect of sustainability. Only if we're all healthy, we can do our jobs and live healthy happy lives. The EV charging stations, we heard earlier the survey, more and more people want to get EV vehicles. This is all part of sustainability in our culture that everybody can do on our campus.

**Tania** (45:23):

So, what Eera and I have started doing to get the word out a little bit more, and I hope you see it and notice it and look at it. And we have a sustainability newsletter that we send out every month and we also started the Green Bag luncheon series where we've had invited speakers and we've had a good number of the classified show up for that because we're doing it from noon to one, which I know is a lot of faculty teach at that time.

**Tania** (45:45):

So, we're brainstorming how can we reach more people. But it's been really lovely to see that a lot of the classified have been spending their lunch hour with us when we offered these.

**Tania** (45:54):

So, for faculty, I mentioned earlier, the 70 leaf designated courses that we had this past academic year. So, the faculty go through a training for which they can earn up to 16 hours towards their professional growth increment.

**Tania** (46:09):

Those of you not familiar with that, faculty have the opportunity through a large number of professional development opportunities to collect these hours and get a one-time salary bump and that actually stays. So, it's an incentive. And so, this is one of the trainings they can do.

**Tania** (46:26):

But really what I want to emphasize is how lovely it is that this is a interdisciplinary approach that you are in a cohort with faculty from across the campus. And that's what's been the funnest part about it.

**Tania** (46:39):

So, there's synchronous Zoom meetings and then synchronous work. And we use, again, the SDGs as a foundation so all faculty can see themselves in it, how they can infuse sustainability into their courses.

**Tania** (46:53):

And just real quick, three examples that I wanted to share. So, for example, a counselor took this course and what did she have students do? She had them look at new evolving careers. We just heard about careers, researching careers that might not even yet exist in her class.

**Tania** (47:10):

And beta is here. Beta for her course, anatomy course she had students look at, and this was during the pandemic, how are different groups affected differently? And you see at the bottom the sustainable development goals that each of these faculty members touched on with the activities that they develop for their classes. So, for example, health in Beta's case.

**Tania** (47:36):

And then finally the last example I'll share is from math. The math faculty were like, how can we do this? Well, they teach students about line graph. So, they just used a graph that shows waste production per day in the U.S. as their example to teach students about line graphs. So, anybody can infuse this into their curriculum. Those were just some examples I wanted to share.

**Tania** (47:57):

So, big plus of course, we have the courses on our schedule. We have 24 faculty trained at this point from across campus credit, non-credit, four different divisions. Really awesome. To summarize some of the strategies, phase one, my goal is to have at least 15 new, we call them leaf trained faculty every year, but also maybe start thinking about very targeted professional development for our classified and managers and implementing that in all our work.

**Tania** (48:30):

So, the next part is outreach. And now I'm going to turn it over to the students because they did a lot of work for the outreach sections.

**Eunice** (48:37):

Thank you. So, a couple students and I, we covered the outreach section of CAP, and this section is basically divided into three parts. The first part covers Mt. SAC’s current activities on campus to engage with campus community, but also the local community.

**Eunice** (48:55):

The second section covers what other institutions are doing on their campus. And the third part of the outreach covers recommendations on what we could do at Mt. SAC. What better things we could do.

**Eunice** (49:09):

Overall, what we did was we kind of extracted the information that was in the 2018 CAP, and we extracted key points from that and created a graph so that it's easier to see what types of progress we've made and what improvements we need to make.

**Student** (49:28):

This is a work from Gladys, and as she said, it's with the purpose of remaining progressive and advocating for areas of injustices in our area. As Eunice said, it's information that we pulled from the Climate Action Plan, what the intended goals were for 2018 and whether or not they were achieved in progress or not achieved. And then it gives you current updates along with recommendations.

**Eunice** (49:54):

So, the Zero Waste event is an example of an on-campus activity that we've accomplished this year. Eera briefly covered this earlier, but it was basically an eight-week competition nationwide across campuses to reduce waste and increased recycling efforts. We placed top 10 both last year and this year while competing.

**Eunice** (50:13):

So, this was an interesting event because it also involved several other student clubs and also a lot of different campus groups including Athens and — I was a part of and it was pretty fun.

**Eunice** (50:26):

And lastly, the third part of the outreach, which is the recommendations part and is an important part. So, for example, Cal State University of Long Beach, they have a Center for Community Learning. And something that we learned from that group is that they have a key teaching strategy, and they call it the service learning.

**Eunice** (50:48):

And basically, what they do is they incorporate volunteering hours in their academic curriculum. And we thought that was a really interesting and engaging way to help inspire students to want to engage with their community.

**Eunice** (51:01):

And the last example was Pitzer College. And they did a really great job incorporating their community voice as they designed their outdoor setting. We like that it was a very inclusive strategy.

**Christina** (51:21):

Thank you for listening to the Magic Mountie Podcast. And don't forget to share your favorite episodes.