

Description:

Although outages are rare, outages can be dangerous to university systems if energy is not managed properly. An effective severity scoring system and a response matrix based on this system need to be provided.

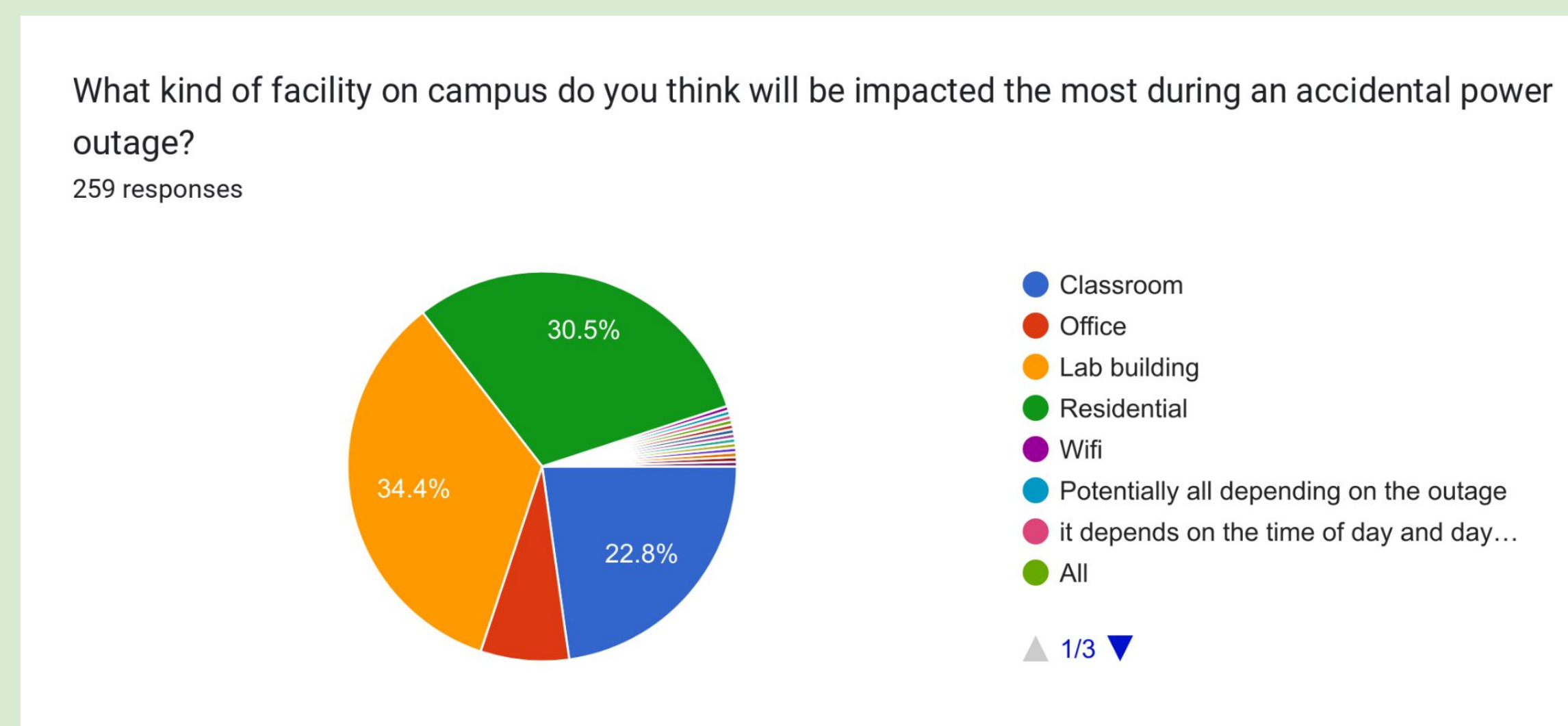
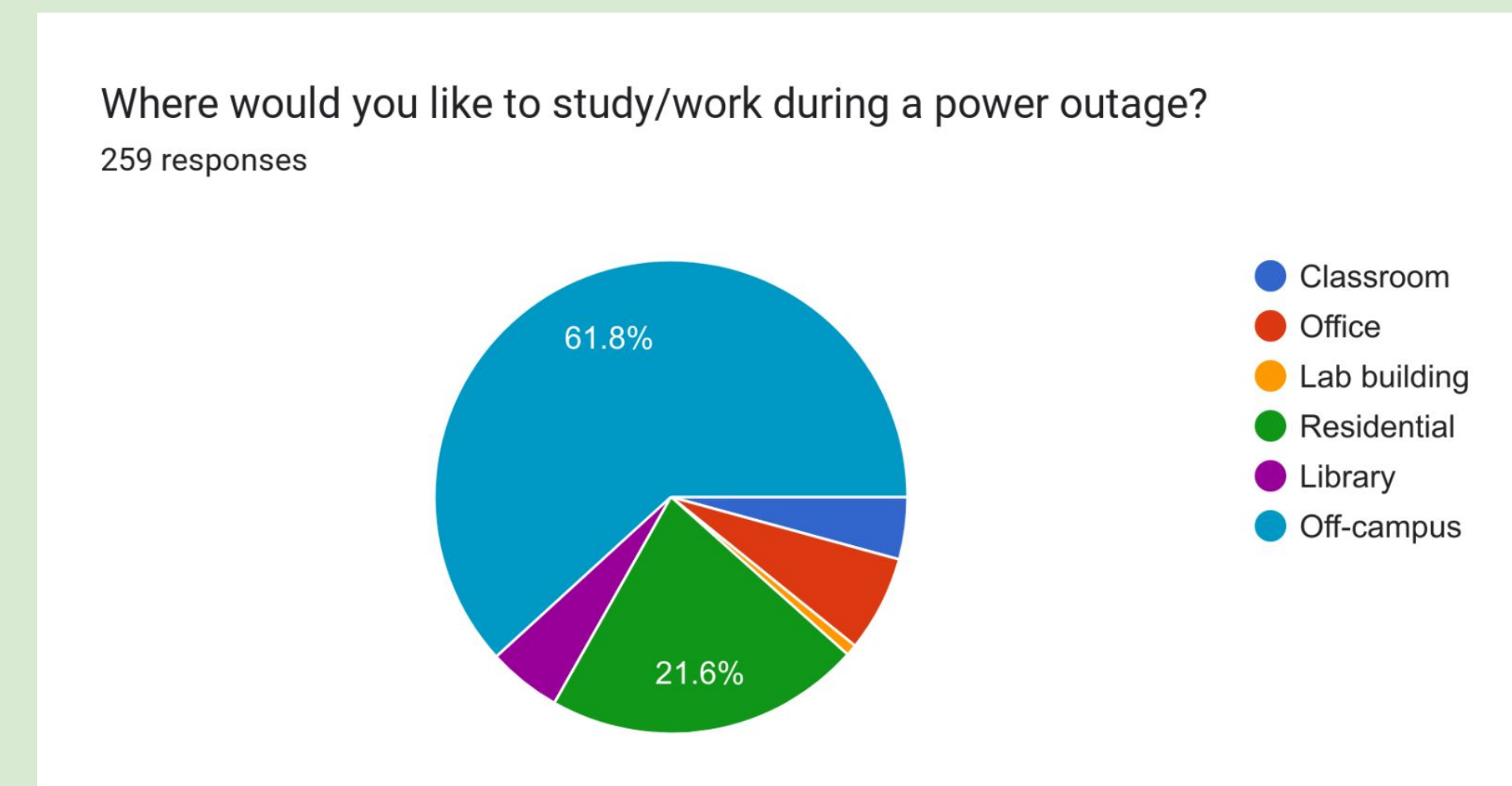
Goals:

- Prioritize buildings where operational losses would severely impact the campus
- Increase the likelihood of responding based on building and user priority

Life Essential Factors:

- Disability Access
- Elevator and Building Transport safety
- Communications Accessible for Hearing and visual impaired
- Emergency Oxygen and Blood Pressure machines requiring charge
- Refrigerated Medication
- Proper fire and Carbon Monoxide testing equipment

Comfortability Factors:



Severity Score:

Formulation =
 $(B)*0.1+(V)*0.15+(H)*0.2+(BP)*0.15+(Area/10^6)*0.2+ (E)*0.2$

B = 2024 - building year
 V = ventilation heat loss
 H = heat transfer coefficient
 BP = backup power level
 Area = Area of building
 E = electricity weight score

Matrix examples:

Time of power outage	Level of power outage	current severity reference score	LAB	Residential on Campus
NONE	No Risk	0	- Pause current work and contain and protect the critical materials researchers are working with. - Secure cabinet doors and flammable storage cabinets. -Avoid opening the refrigerator or freezer.	Instruct FM's to keep building managers and RA's informed of current status as well as potential greater risk
No affect (0-1 Hours)(x1)	Low risk	0-20	- Pause current work and contain and protect the critical materials researchers are working with. - Secure cabinet doors and flammable storage cabinets. -Avoid opening the refrigerator or freezer.	- Check if anyone is trapped in an enclosed space (such as an elevator) and notify FM if so - Check the impact of water supply systems
part of day (1-3 Hours)(x1.2)	Moderately safe	20-50	- Pause current work and contain and protect the critical materials researchers are working with. - Secure cabinet doors and flammable storage cabinets. -Avoid opening the refrigerator or freezer.	- Inform relevant dormitory staff to keep an eye on students and other personnel coming out of the dormitory buildings and tell them not to open freezers or refrigerators. - Residents are instructed to turn off all tools, appliances and electronic devices and turn home heating system thermostats to the lowest setting to prevent damage from power surges when power is restored. (Power is more easily restored when the electrical system is not heavily loaded.) - Check to see if anyone is trapped in an enclosed space (such as an elevator) and notify campus authorities if so - Check the impact of the water supply system and notify the school management agency if any
Majority of Day (3-8 hours)(x1.5)	Moderate Risk	50-70	- Pause current work and contain and protect the critical materials researchers are working with. - Secure cabinet doors and flammable storage cabinets. -Avoid opening the refrigerator or freezer. -Check to see if any workers are handling materials at reduced or elevated temperatures or pressures and notify appropriate personnel if so -Check maintenance systems to prevent uncontrolled reactions or releases. -Recommended evacuation	- Inform relevant dormitory staff to keep an eye on students and other personnel coming out of the dormitory buildings and tell them not to open freezers or refrigerators. (A full freezer will keep food frozen for 24 to 36 hours if the door remains closed.) - Residents are instructed to turn off all tools, appliances and electronic devices and turn home heating system thermostats to the lowest setting to prevent damage from power surges when power is restored. (Power is more easily restored when the electrical system is not heavily loaded.) - Check to see if anyone is trapped in an enclosed space (such as an elevator) and notify campus authorities if so - Check the impact of the water supply system and notify the school management agency if any
Full Day (8-24 hours)(x1.7)	Approaching High Risk	70-100	- After the above actions are carried out, notify all personnel to evacuate the laboratory and ensure that no high-risk substances/experimental instruments/experiments are left behind. - Turn off all power sources to ensure that they will not be in a high voltage state when the power is restored. - If the laboratory stores temperature-sensitive materials or samples, please contact relevant personnel for proper handling to maintain appropriate storage conditions during power outages.	- Remove all spoiled food and drinks before leaving - If a residence hall becomes uninhabitable due to a power outage (e.g., extreme temperatures), arrange temporary housing for affected students elsewhere on campus - Contact medical personnel or a first aid kit for any medical emergencies that may arise during a power outage. Make sure students know how to get medical assistance if needed. - Consider deploying additional staff or security personnel to monitor dormitories and surrounding areas, especially at night.
Greater than a Day (x2)	High risk	100 -	- After the above actions are carried out, notify all personnel to evacuate the laboratory and ensure that no high-risk substances/experimental instruments/experiments are left behind. - Turn off all power sources to ensure that they will not be in a high voltage state when the power is restored. - If the laboratory stores temperature-sensitive materials or samples, please contact relevant personnel for proper handling to maintain appropriate storage conditions during power outages.	- Contact medical personnel or a first aid kit for any medical emergencies that may arise during a power outage. Make sure students know how to get medical assistance if needed. - Consider deploying additional staff or security personnel to monitor dormitories and surrounding areas, especially at night.
Who is Affected			Faculty, students, researchers, academic staff, and administrators.	Students, residential life staff, and sometimes academic advisors.

Building Rank:

Rank	
Lab	5
Residential	4
Library	3
Classroom	2
Office	1
Other	1

5=Most Important
 1=Least Important

Graphics:

