

Heat Related Deaths on Hikes

Peoria Unified School District Champions

By Sunset Heights 8th grade students:

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Portfolio Section I: Identifying the Problem

The Problem

- In Arizona, hundreds of people die each year on hikes in the summer.
- This is due to the following:
- Extreme heat in the summer
 - People unaware that even 90 degrees can be fatal when physically exerting themselves.



The problem, causes, and evidence



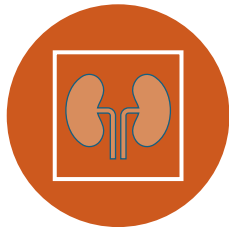
ON AVERAGE, MARICOPA COUNTY PARKS SEE OVER 200 RESCUES YEARLY ON HIKES DUE TO HEAT EXHAUSTION.



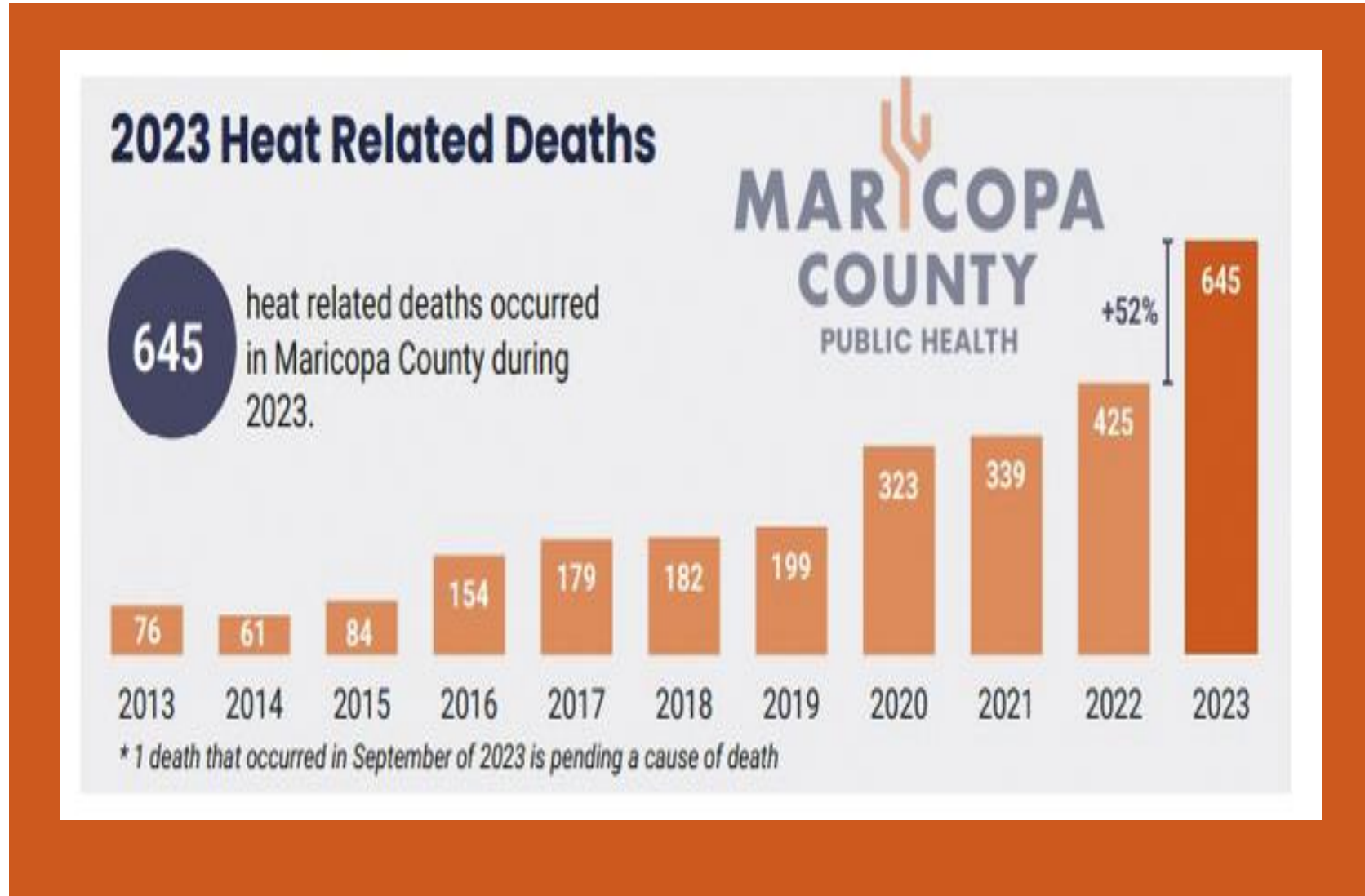
USUALLY, PEOPLE DON'T REALIZE HOW DANGEROUS IT IS TO HIKE IN HIGH TEMPERATURES, EVEN IF YOU ARE IN GOOD SHAPE.



AN AVERAGE OF 13 HEAT RELATED DEATHS OCCUR PER DAY IN THE MONTH OF JULY IN MARICOPA COUNTY.



THIS LEADS TO COUNTLESS UNNECESSARY DEATHS THAT WE WANT TO HELP PREVENT.



Past Statistics

As of September 30th, 2025, there were 156 confirmed heat related deaths along with 370 unconfirmed deaths. This is an increase from the previous overall total of 600 confirmed heat-related deaths.



<https://www.maricopa.gov/m/newsflash/home/detail/3468>

Importance

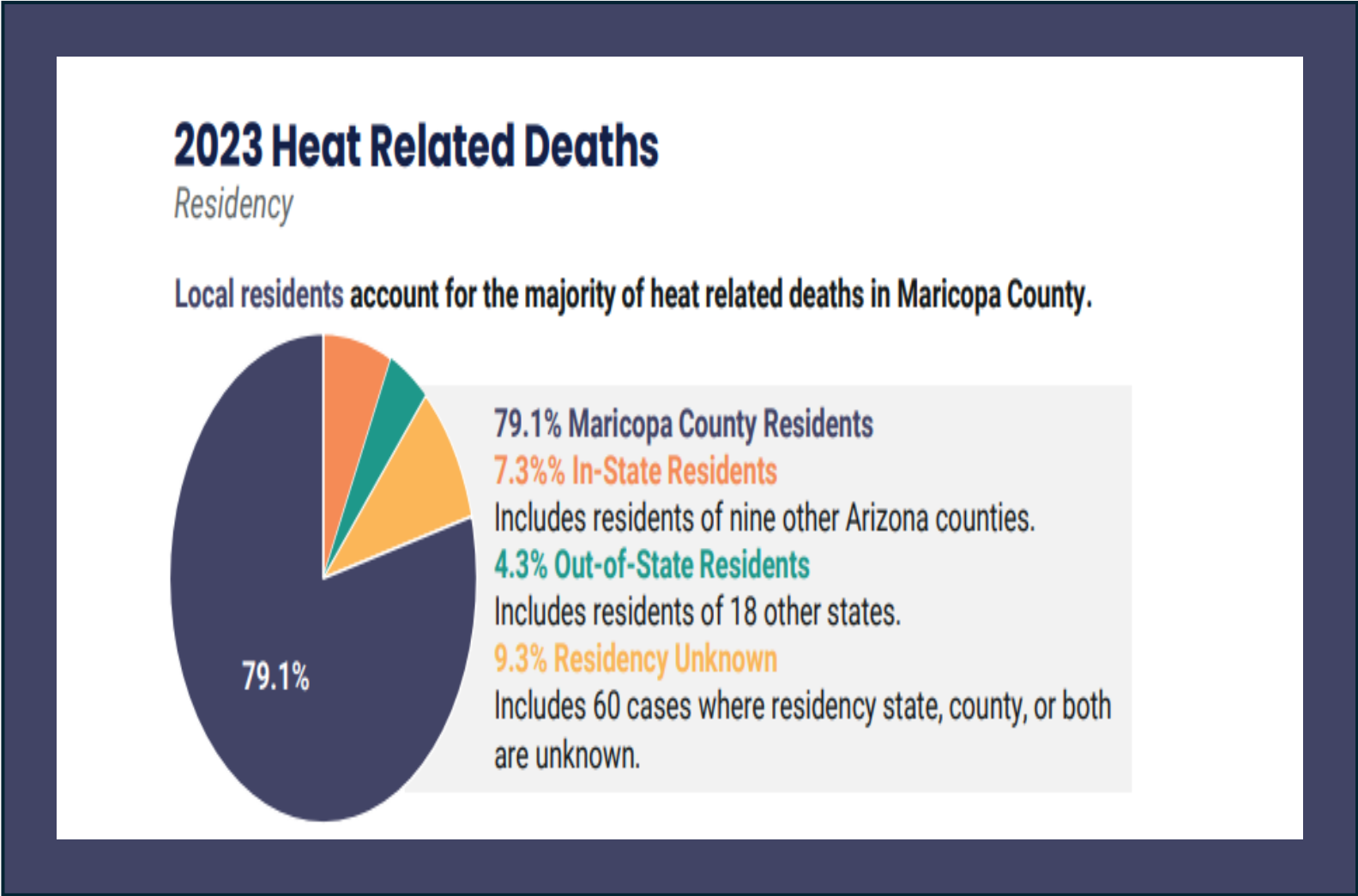
- This affects everyone in some way, regardless of your health, age, or whether you are acclimated to the heat. However, some are more susceptible to heat illness. For example;

- **79% of the people who die are residents of Arizona**

-Typically, people assume it is tourists who die. However, the statistics show it is mainly residents of Maricopa County who are overly confident in their ability to withstand the heat.

- . 78% of people who die are men 22% are women

- . 2/3 of the people who die are 50 years of age or older



Hannah Moody's Death News Story

- Hannah Moody was an Arizonan hiking influencer.
- On May 20th, 2025, she was reported missing after going on a hike in 103-degree weather.
- On May 22nd, she was found "dead and decomposing" on the trail due to environmental heat exposure.
- She was an athletic 31-year-old woman who was used to the heat but still died.

This tragic case shows that even an experienced hiker in the heat, who is not susceptible to heat illness by age or health demographic, could still be tragically affected.



Anthony Quatela III Death News Story

- According to Fox 10 Phoenix, a man going on a day long in Arizona hike died due to heat.
- 25-year-old Anthony Quatela III and his friend began hiking at 7:30
- They ran out of water and both him and his friend began to feel sick by 1:30.
- Quatela lost consciousness and died before the first responders could get to him.

If he would have had access to water on his hike, this tragedy could have been prevented.



[fox 10 link](#)

Existing Ordinance

- Several mountains in Arizona (ex. Camelback mt.) close when an extreme heat warning is issued (105+ degrees)



Arguments

- There have been concerns that people will feel like their rights are being taken away if the city were to tell them not to hike.



Arguments

- This is not a policy enforced by the state/county currently; the parks can decide individually when to close.
- We believe there should be an enforced ordinance to keep everyone safe.



City involvement

- The city government can be involved by creating an ordinance to prevent going on trails when the heat index is a certain intensity.
- We are speaking to officials from the City of Peoria to make this happen.



M.O.R.E. Division

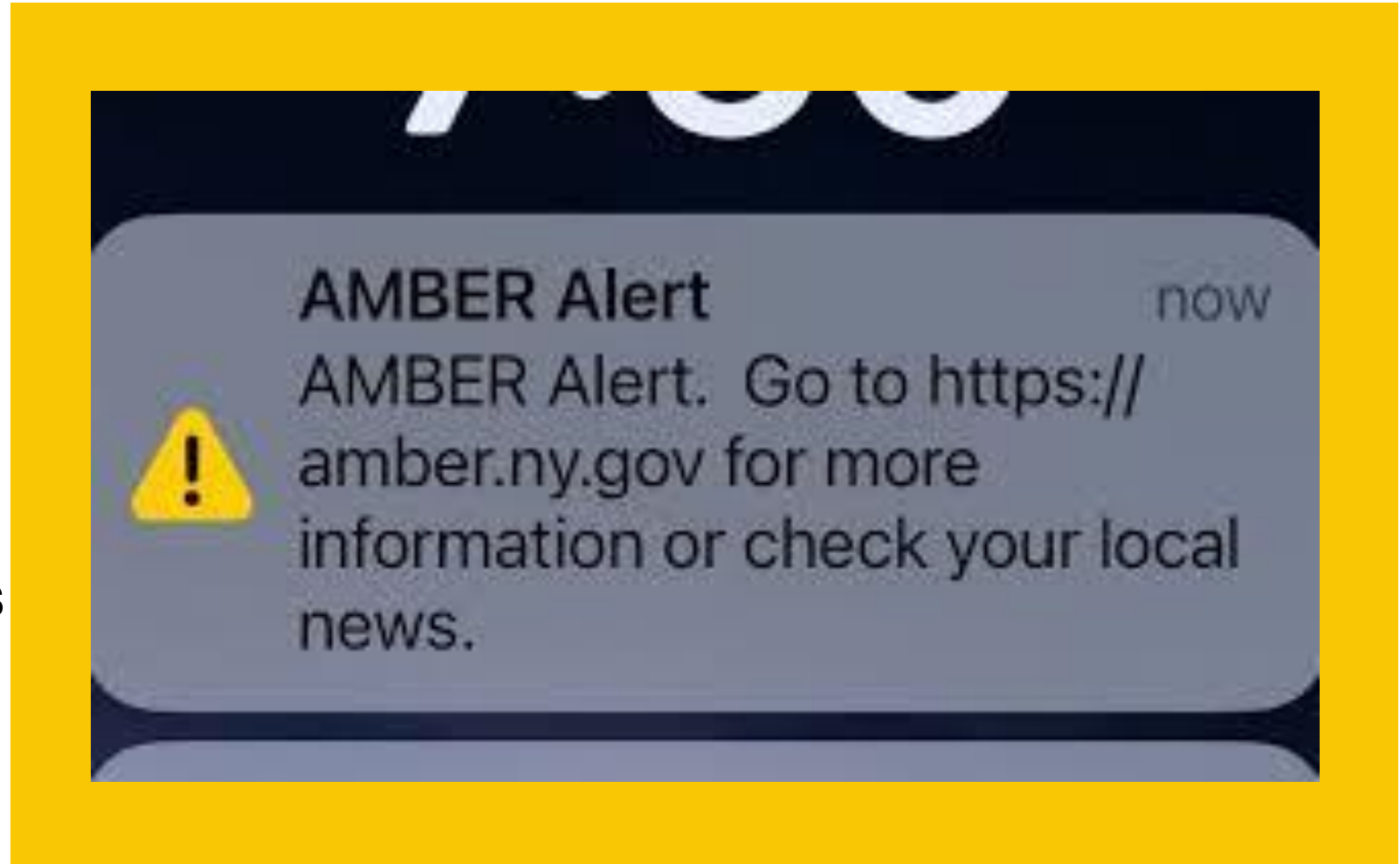
- The M.O.R.E. Division is a new division of the City of Peoria Parks + Recreation Department, as of July 2025.
- This program's purpose is to maintain existing mountain parks and increase the city's dedicated open space.
- Currently, they are putting in new trails throughout the city. These would be good places to install water stations because they can more easily be placed in the areas that are currently being built.



Portfolio Section II:
Alternative Policies

Alternative policy #1

- Contact the Federal Emergency Management Agency
- Send Wireless Emergency Alerts to all residents of Maricopa County when the heat index reaches dangerous levels.



Integrated Public Alert & Warning System (IPAWS)

- IPAWS is owned by FEMA Or Federal Emergency Management Agency.
- This is a federal agency whose focus is on Emergency Alerts.
- This is what makes the amber alerts and weather alerts.
- We would contact this agency to input heat type alerts.



Alternative policy #1

Advantages:

- The residents of Maricopa county and other residents in that geographical location are informed of the dangers of heat index.

Disadvantages:

- People may not listen to the alert and just do anything that they normally would.



Alternative policy #2

- Make it required that every hiking trail must have a sign to warn hikers.
- This will inform them from the start and keep them watching out for the signs of heat exhaustion or stroke

SIGNS OF HEAT ILLNESS

Heat Exhaustion	Heat Stroke
Faint or dizzy	Throbbing headache, confusion
Excessive sweating	No sweating
Cool, pale, clammy skin	Body temperature above 103°F
	Red, hot, dry skin
Nausea or vomiting	Nausea or vomiting
Rapid, weak pulse	Rapid, strong pulse
Muscle cramps	

TAKE ACTION

<p>MOVE to a cooler place</p> <p>COOL with ice/cold water and lay down</p> <p>DRINK cool water or sports drinks</p> <p>CALL 9-1-1 if symptoms last longer than 1 hour</p>	<p>CALL 9-1-1 IMMEDIATELY</p> <p>MOVE the person to a cool, shaded area</p> <p>COOL the person with a cold water or ice bath, or by placing ice packs on the neck, armpits, and groin areas</p>
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Call 2-1-1 to find a free cooling center, transportation assistance, water, and more.

maricopa.gov/heat

HEAT RELIEF NETWORK | MARICOPA COUNTY PUBLIC HEALTH

Alternative policy #2

- Having posters at the beginning of every hike is an easy way to keep people informed, safe, and healthy.

The infographic is split into two vertical panels: an orange panel on the left for Heat Exhaustion and a red panel on the right for Heat Stroke. A central figure of a person is also split vertically, with the left side orange and the right side red. The figure has a water bottle icon on the left side and a question mark icon on the right side. The text is arranged around this central figure.

Heat Exhaustion	Heat Stroke
ACT FAST <ul style="list-style-type: none">• Move to a cooler area• Loosen clothing• Sip cool water• Seek medical help if symptoms don't improve	ACT FAST CALL 911 <ul style="list-style-type: none">• Move person to a cooler area• Loosen clothing and remove extra layers• Cool with water or ice
<i>Dizziness</i> <i>Thirst</i> <i>Heavy Sweating</i> <i>Nausea</i> <i>Weakness</i>	<i>Confusion</i> <i>Dizziness</i> <i>Becomes Unconscious</i>
<i>Heat exhaustion can lead to heat stroke.</i>	<i>Heat stroke can cause death or permanent disability if emergency treatment is not given.</i>

Logos at the bottom left: NOAA, CDC, NIOSH. Text at the bottom center: Stay Cool, Stay Hydrated, Stay Informed!. Logo at the bottom right: NHHIS.

<https://www.weather.gov/>

Alternative Policy #2

- We interviewed City of Peoria Council Member, Jon Edwards, and because of us, he proposed the idea to the city council to implement signage onto trails in Peoria.
- He suggested it be done through the M.O.R.E (Mountain, Open Space, and River Ecosystems) program. This program is trying to preserve the wildlife and save lives of hikers.



Portfolio Section III:
Proposed Policy

Ordinance

Our proposed regulation:

In the City of Peoria, when a heat advisory is issued, hiking trails without water stations must close. Hiking trails with at least two working water stations may stay open until an excessive heat warning is issued.



<https://www.weather.gov/grb/he>

Advantages of policy

- Makes hiking less of a hazard during the summer
- Water stations will help prevent heat related injuries
- Helps keep first responders safe from high-risk mountain rescues



Disadvantages of policy

- Less opportunity to hike during the summer
- It will be expensive to fund water stations for trails that want to be able to remain open
- It may be argued that the policy unfairly takes away people's right to make their own judgement on whether they should hike or not.



Source: noahhelps.org

Concerns

- There may be concerns about the water stations disturbing the wildlife and environment nearby.
- Solution: eco-friendly water refill stations to avoid harming the surrounding nature.



Gary Bernard

- We spoke with **Fire-Medical Department Chief Gary Brenard**.
- We were curious if the cost of a Mountain Rescue compared to the cost of inputting water stations.
- We discussed costs with him about how much each helicopter rescue costs.
- He told us it costs \$250 per hour for a firetruck with four people and an additional \$1,000 an hour for helicopter.
- He said they see 15 to 30 rescues every summer and they take at least an hour.
- So, in the long run inputting water stations would be the best choice.
- **Chief Bernard agreed and thought very positively of our policy!**



Counterclaim

- We recognize that it might feel unfair to not be able to make your own decision in this situation.
- However, we believe that the most important thing to consider is the lives and wellness of our community. These are real people being affected, not just statistics on a graph.
- This would not be taking away their rights but instead ensuring that precautions are set in place to keep people alive and healthy.



Constitutionality

- Our proposed policy stays within the lines of the U.S. constitution.
- Specifically, the tenth amendment
- This proclaims that states have the jurisdiction to regulate as necessary in areas the federal government has not mandated.
- The state of Arizona experiences summers much different from the rest of the country; justifying the need for stricter regulations for hiking during the summer months.



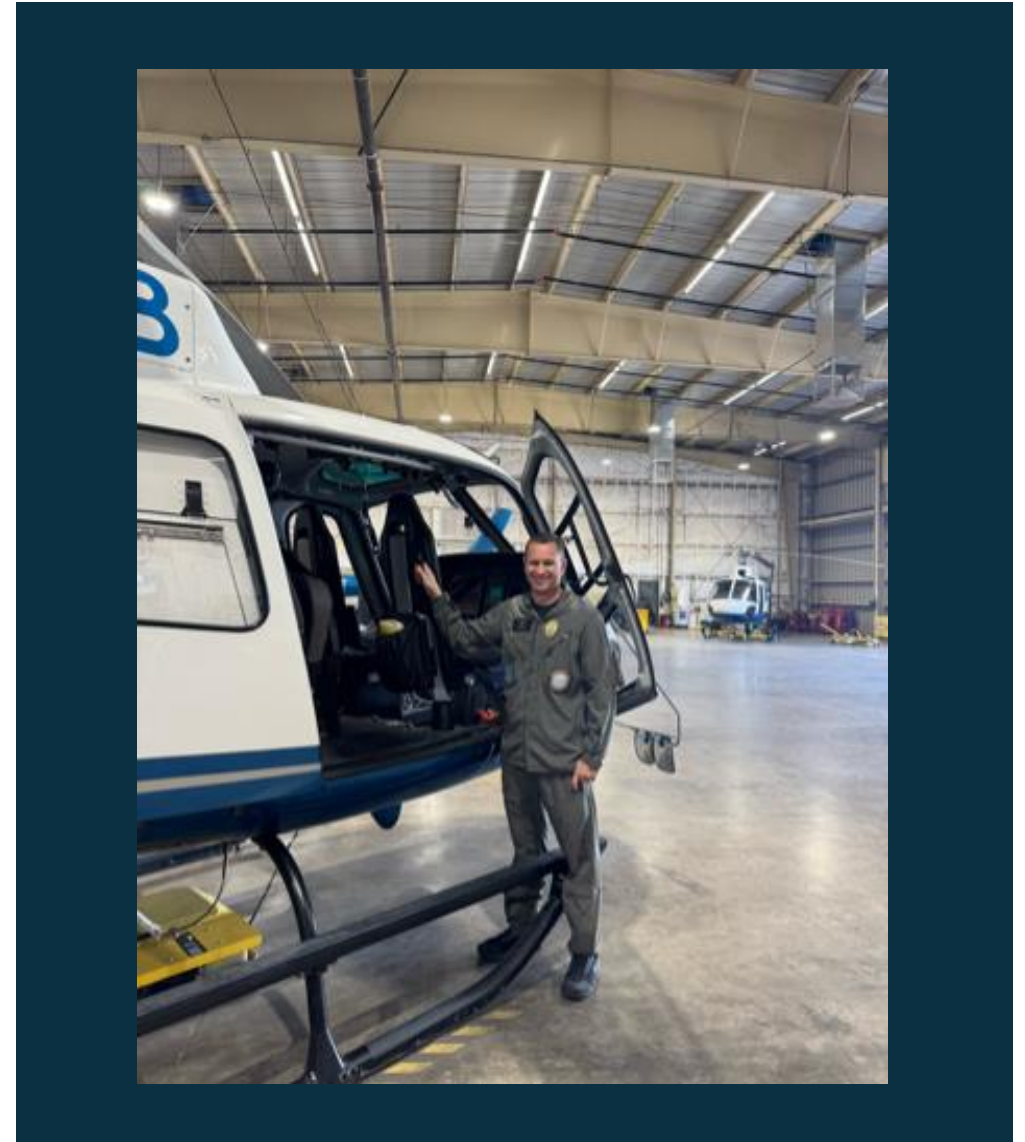
Interview with Mathew Bolin

- We interviewed Mathew Bolin, a helicopter pilot for the Phoenix police department.

-We asked, "Do you believe this is an important issue to our community?"

He responded;

"**Absolutely**, we want people to enjoy hiking and doing things outdoors and being active. But also, they need to do it in a manner that is safe for both them and for the people around them and for the firefighters who come and get them."



Portfolio Section VI: Action Plan

Gaining support

- We currently have support from the city of Peoria. We spoke with Councilman Edwards, and he agrees this is a very important issue and is helping us put this into place as an ordinance.
- We also need someone to refill the water stations.



<https://www.peoriaaz.gov/Home/Components/News/News/6951/439?backlist=%2F>

Councilman Jon Edwards Interview

We interviewed Councilman Edwards from the City of Peoria. He was so impressed with us and our presentation and speaking skills that he is advocating to get more signage added to hiking trails in the budget for this fiscal year.



Examples – Global Industrial Water Stations

Outdoor Freestanding Bottle Filler With Fountain



- \$1,225 no filter
- \$1,425 filter included
- Activates by pushing a button

Outdoor Freestanding Bottle Filler



- \$1,499 no filter
- \$1,699 filter included
- Activates by pushing a button

Alternative Water Station

Alternative example:

- An alternative example is water refill barrels like these. These will be less expensive.
- There may be concerns about the water not staying cold enough in containers like this. However, they are insulated enough to keep them from being boiling hot, but it will still be warm.



Alternative Water Station

Alternative example:

- We did some research:
- Warm water is better for you when you are in the heat, especially when it is very dry outside like our weather here in Arizona.
- If we chose this option, it is less expensive, that is something to consider.

Source: <https://www.mcgill.ca/oss/article/did-you-know/drink-hot-drinks-hot-weather-cool-down-faster>



Costs

- This would make each station around \$1,500.
- Which would be \$3,000 for each mountain
- Keep in mind - water stations would not be required to be installed, but they are mandatory to stay open in higher temperatures.
- \$250/ hour to rescue someone without a helicopter
- \$1000+ / hour for just a helicopter rescue



Action Plan

-We will start with our proposed policy, which is similar to an existing ordinance for some trails in Phoenix (such as Camelback mountain, Piestewa Peak, and parts of South Mountain) which close when an extreme heat warning is issued.



Hiking Trails in Peoria (Existing)

- [Paloma Preserve Trails Map \(PDF\)](#)
- [West Wing Mountain Preserve Trail Map \(PDF\)](#)
- [Sunrise Mountain Trail Map \(PDF\)](#)
- [East Wing Mountain Preserve Trail Map \(PDF\)](#)
- [Calderwood Butte Trail Map \(PDF\)](#)
- Calderwood Butte Trailhead
27180 N 99th Ave, Peoria, AZ 85383
- East Wing Mountain Trailhead
(found at Sonoran Mountain Ranch Park)
7098 W Miner Trail, Peoria, AZ 85383
- Sunrise Mountain Trailhead
(found at West Wing Neighborhood Park)
27100 West Wing Pkwy, Peoria, AZ 85383
- West Wing Mountain Trailhead
(found at West Wing Neighborhood Park)
27100 West Wing Pkwy, Peoria, AZ 85383



Action Plan

-If this is effective, the ordinance will expand to the rest of the trails in Maricopa County.



Hiking Trails in Maricopa County (Existing)

- Buckeye Hills Regional Park
- Cave Creek Regional Park
- Estrella Mountain Regional Park
- Lake Pleasant Regional Park
- McDowell Mountain Regional Park
- San Tan Mountain Regional Park
- Spur Cross Ranch Conservation Area
- Usery Mountain Regional Park
- White Tank Mountain Regional Park

<https://www.maricopacountyparks.net/things-to-do/activity/hiking/>.



Action Plan

Timeline:

- First, we will install water stations in the new trails being put in by the M.O.R.E. program
- Apply the ordinance to the hiking trails and mountains in the City of Peoria
- Later, with approval, fully change the ordinance and expand to the rest of trails in Maricopa County



Funding

We interviewed Joeseeph Wagner-Corona who is the Assistant Director of Finance at City of Tolleson. We were curious how this project could get funded. He said we have **many options** and we could get creative with how we tackle the cost of this project. For example, through the city, with grants, with a sponsorship, or by creating a park pass.



Through the City

To get funded through the city you need to be made part of the city's budget.

To do this you need to be approved by the city council.

You would need to speak with someone from the council or the parks and recreation department. We have already done both.



Grants

If the city could not find money in their budget for our project, we could work with them to apply for a city, county, state, or federal grant.

A grant that we would qualify for is the RTP (Recreational Trails Program) Grant from Arizona States and Parks.



Sponsorship

Another option is that we could ask a business to sponsor a water station; similar to how businesses can sponsor highways.

They could pay for the water station and maintenance.

If they could only pay for part, we could ask the city to cover the rest, and it would be a significantly smaller amount.



Park Pass

Another possibility is the city could charge people, who use the parks, a fee to help cover maintenance cost.

You could call it a park pass, and it could give you access to all parks in Peoria if you purchase it.





We presented our proposed policies to the following people-

- Jon Edwards, Councilmember, Willow District, City of Peoria
- Chris Calcaterra, Director of Parks & Recreation, City of Peoria
- John Loleit, M.O.R.E. Manager, Parks & Recreation, City of Peoria
- Bill Murphy, Assistant City Manager, City of Scottsdale
- Scott Cutty, Park Ranger, City of Peoria

Feedback

They agreed that the issue we presented was important, and they complimented our speaking skills and initiative to make a difference. They are currently considering/working toward adding signage on hikes warning people of the dangers, water stations at the new hiking trails, and increasing awareness/creating programs to educate the people about the heat related risks of hiking.

Thank You!

Thank you for your time! This is a very important issue to us and our community, and we hope it now is for you too.

