

The Problem

Missouri's State Park system contains 93 state parks and historic sites with 3,500 campsites. Many of the most popular state parks have experienced severe weather including tornadoes that often create many other hazards including falling trees, flooding and infrastructure damage. Missouri has a record for severe weather and is considered to be in the top 5 states having the most tornadoes, yet only 7 state parks have warning sirens. The remote location of many Missouri State Parks results in minimal to no cellular coverage for alerts, causing minimal to no warning of inclement weather or emergency alerts. Based on 2022 attendance data and a survey of parks with a 74% response rate:

- 24% of visitors protected by sirens
- 57% of visitors unprotected and in need of sirens for severe weather or emergency warning

As current mitigation, park staff and campground host volunteers risk their own safety in order to warn visitors of threats. With each new natural disaster incident, it is prudent to research and fund further emergency preparedness projects so that there are continual efforts to maintain public health and safety as a priority. However, limited staff and budgets has resulted in State Parks having to manage and maintain what is existing, with reduced efforts and depleted resources for funding newly identified mitigation initiatives and needs. Grant opportunities for disaster mitigation are available, but there are hurdles to eligibility of each, mainly, that most are reactive rather than proactive and require that a disaster or incident has already occurred in order to receive funding for future mitigation.

The Proposed Solution

The Show Me MO Sirens project—aligned with Missouri's Hazard Mitigation Plan goals and objectives—requests and proposes funding for the installation and implementation of sirens in 29 parks over the next 5 years. Protection will increase from 24% of visitors to 80%, or from 4 million visitors protected to over 15 million visitors protected. Parks would first identify and confirm commitment in partnership from their county or area to share costs, then priority for installation would be as follows, sub-prioritizing parks with campgrounds:

- Start installation and implementation in parks without sirens or partnership commitments
- Then install and implement in parks without sirens but with partnership commitments
- Finally, install in parks that have insufficient reliance on sirens outside of the park

The Potential Impact

For every dollar spent by Missouri State Parks to operate the state park system, Missouri's economy saw a \$26 return on investment; parks enhance our state's economy as well as improve visitor's health and well-being. The implementation of warning sirens would provide an added layer of protection for our economic assets, staff, and visitors at the identified parks. Sirens would result in equal opportunity, real-time warning and benefit all emergency management, safety and preparedness efforts. As Missouri is known for ever-changing weather conditions that are often unpredictable during peak visit times at State Parks, and as public safety becomes a growing concern for many, the ability to take action to prevent tragic accidents has become the forefront of everyone's mind. There is no monetary value for saving lives. The benefits outweigh all risks and costs when it comes to life safety.

Team Information

Project Name

Show-Me MO Sirens

Team Lead

Kimberly Pedigo, DNR, State Parks, 417-276-4259

Team Members

Minimum: 3; Maximum:10

	Name	Department/Division	Email address
1	Kimberly Pedigo	DNR/State Parks	kimberly.pedigo@dnr.mo.gov
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7			
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Your Pitch

What problem are you addressing? (No more than 200 words)

Missouri has a record for severe weather and is considered to be in the top 5 states having the most tornadoes. The remote location of many Missouri State Parks results in minimal to no cellular coverage for alerts, causing minimal to no warning of inclement weather or emergency alerts. Therefore, staff and volunteers risk their own safety in order to warn visitors of inclement weather.

What is the root cause of the problem? (No more than 200 words)

Remote locations of many parks make it impossible to hear sirens from the nearest town and result in little to no cell reception for warnings.

What is your proposed solution? (No more than 200 words)

The Show Me MO Sirens project—aligned with Missouri’s Hazard Mitigation Plan goals and objectives— requests and proposes funding for the installation and implementation of sirens in 29 parks. Based on 2022 attendance data, approximately 4 million of the visitors to MO State Parks were protected by a siren within or near the park. By installing sirens in the 29 additional parks, we would increase that protection to over 15 million visitors.

Which area of impact is your primary focus? (No more than 10 words)

Improve citizen experience and increase public safety

What is your primary measure for impact?

Primary measure	Current Status	Target
Determine the number of state parks that would benefit the most from the installation of a tornado siren.	7 MO State Parks currently have tornado sirens. 29 parks want/need tornado sirens installed.	Install tornado sirens at all identified locations within 5 years.

[OA's guidance on performance metrics](#)

Project Plan

What are the major activities and milestones to deliver your solution? (Additional steps may be added)

	Activity	Milestone or deliverable	Due date
1	Divide the 29 parks into 3 categories: Parks that cannot hear any siren and do not have partnership opportunities, Parks that cannot hear any siren but have possible partnerships available, and Parks that can hear a nearby siren.	Parks divided by 5 years	1 week into the project
2	Determine best location within parks for first round of installations	Locations identified	1 month into the project
3	Submit Natural and Cultural Resource Clearances	Clearances are approved	2 months into the project
4	Write up the specifications for the first round of sirens	Request for Quotes submitted	6 months into the project
5	Get bids for installation of first round of sirens	Projects awarded to winning bids	7 months into the project
6	Install first round of sirens	Sirens installed	1 year into the project

7	Parks in the second category will work on required paperwork to form partnerships with local HOA's, 911 dispatch, county emergency management, friends of parks groups, etc.	Partnerships developed and approved	1 year into the project
8	Repeat activities 2-6 each subsequent year for the next group of siren installations	Sirens installed	Within 5 years, project complete

Req

What is the expected project duration? Choose one from the list below.

Long term (> 6 months)

How many people will be required to finish the project in the given duration? Choose one from the list below.

Large (>6 people)

Does your project require any specialized skills to complete? If so, explain. (No more than 100 words)

Yes, a contractor will do all the installation as well as any future replacement of batteries. Park staff will be trained in usage of the siren and PA system. 911 dispatch will be the primary authority for setting the siren off.

Does your project require any statutory change to complete? If so, explain. (No more than 100 words)

No

Can you implement your project with your current resources? If not, explain. (No more than 50 words)

Strongly recommended: Provide a cost breakdown in your additional materials.

No, due to funding restraints the project could not be completely implemented with current resources. Grants are primarily given to areas that have already been declared as disaster areas, and are therefore reactive rather than proactive.

Are there other factors critical to design and implement your project? (No more than 50 words)

Sirens would be standard with PA systems that will allow for announcements to be made in the parks as well.

Add

Please list any additional materials you have provided.

1	Grant Opportunity Research
2	Frequently Asked Questions
3	

Show-Me MO Sirens
GRANT OPPORTUNITY RESEARCH

<i>Program</i>	<i>Grantor</i>	<i>Cost Share</i>	<i>Intent</i>	<i>Hurdle(s) to Eligibility</i>
<i>Hazard Mitigation Grant Program</i>	Federal Emergency Management Agency/ State Emergency Management Agency	75% Federal 25% Non-federal	For projects intended to alert the nearby population of an imminent risk of natural hazards, such as tornado, tsunami, flash flooding, wildfire or any eligible hazard mitigation project that requires an emergency response.	This grant funding is available after a presidentially declared disaster.* <i>* DPS said a notice of interest (NOI) can be submitted to DPS to be considered for leftover HMGP funding.</i>
<i>Pre-Disaster Mitigation Grant Program</i>	Federal Emergency Management Agency/ State Emergency Management Agency	75% Federal 25% Non-federal	For planning and implementing sustainable cost-effective measures designed to reduce risk to individuals and property from future natural hazards, while also reducing reliance on federal funding from future disasters.	Must be congressionally directed.
<i>Building Resilient Infrastructure and Communities</i>	Federal Emergency Management Agency	75% Federal 25% Non-federal	For addressing future risks to natural disasters. Added focus on infrastructure projects benefitting disadvantaged communities, nature-based solutions, climate resilience and adaption, and adopting hazard resistant building codes.	Must have received a major disaster declaration under the Robert T. Stafford Disaster Relief and Emergency Assistance Act. States must designate one agency as the applicant, so competition would exist in order to be the project submitted.
<i>Community Development Block Grants – Mitigation Program</i>	Missouri Department of Economic Development/ U.S. Department of Housing and Urban Development	Varies	For increasing resiliency and safety from future severe weather by installing warning systems in vulnerable communities.	Current eligible applicants are units of general local government (UGLGs), cities and counties only, within a Presidentially Declared Disaster county.

Conclusion

Grant opportunities that relate to our efforts in installing sirens exist, but there are hurdles to eligibility of each, mainly, that most are reactive rather than proactive and require that a disaster or incident has already occurred in order to receive funding to mitigate the problem in the future. Post-disaster recovery is beneficial, but our focus is to get ahead of the threat; an ounce of prevention is worth a pound of cure, and it is imperative that Missouri willingly invests in systems that can aid in prevention and promotion of safety where grant funding opportunities fall short.

Show-Me MO Sirens
 FREQUENTLY ASKED QUESTIONS

<i>Question</i>	<i>Answer</i>
<i>How much does it cost to install a tornado siren?</i>	Currently, approximately \$25,000.
<i>What maintenance is needed? How often? Cost?</i>	Replace the 2 batteries every 3-4 years costing about \$500.
<i>Who would set the siren off during a tornado warning?</i>	911 dispatch Could also be set off by park staff, if needed. Looking into the possibility of linking with a weather radio.
<i>Do MO State Parks have shelters?</i>	Most state parks do not have FEMA certified shelters. That would be a separate project that could possibly be looked at in the future. First goal is to warn the guests.
<i>How many weather related loss notices have occurred in MO State Parks?</i>	Approximately 9% of last year’s loss notices were weather/tree related.
<i>How does this align with Missouri’s State Hazard Mitigation Plan?</i>	The efforts in installing sirens in rural areas of state parks most closely aligns with Goal 1, objectives 1.1 and 1.2 of the plan. Goal 1: Preserve human life, health, and safety from the adverse effects of disasters. Warning sirens are specifically called out as aligning with action number 22, action category M13, supporting projects that are consistent with the State goals and objectives, but difficult to quantify the benefits using the standard benefit-cost analysis.



Example siren installed at Mark Twain State Park

PROBLEM

Remote location of parks =
little to no cell reception

No warning of inclement
weather

Park staff and volunteers risk
own safety in order to warn
visitors

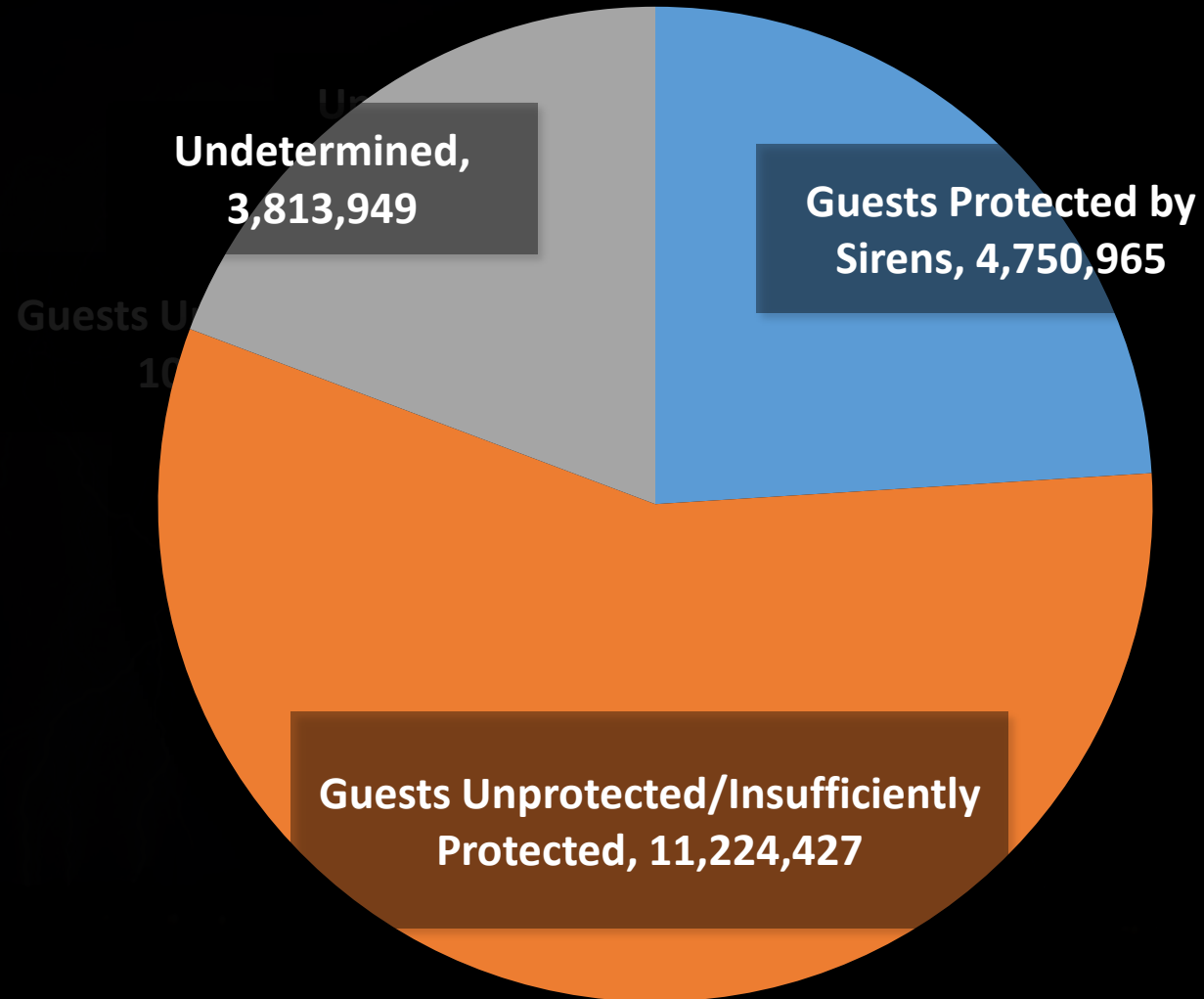
Time wasted warning visitors
with good cell reception

SOLUTION

- Install sirens in 29 parks over the next 5 years
- Equal opportunity warning system with installation of sirens

WHY

2022 State Parks Attendance



ADDED BENEFITS



- Other Warnings
 - Wildfire
 - Flood
- Lost Person in Park

- Keep up with surrounding states
- Guests feeling secure

WHY SHOW ME CHALLENGE

- **Promotes statewide concern for safety**
 - Park visitors
 - Surrounding communities
- **Opportunity to be proactive rather than reactive**
- **Budget requests may not get funded & grant opportunities are limited**
- **Opportunity for bulk pricing/contract**
- **Aligns with the Missouri State Hazard Mitigation Plan**
 - Goal 1: Preserve human life, health, and safety from the adverse effects of disasters.

RETURN ON INVESTMENT

PRICELESS

