CONTINUITY OF CARE
GLACIER NATIONAL PARK EVACUEE RELOCATION

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2023
Continuity of Care
Glacier National Park Evacuee Relocation
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Sponsors:
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Phil Wilson, Chief of Science & Resource Management

10/12/2023

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ABSTRACT

The intensity of wildfires in Glacier National Park is increasing every year. However, the Park does not have comprehensive post-evacuation plans for employees. We worked with park personnel to plan and care for evacuated employees working and living in the Headquarters District. We created the “Fire on the Horizon” exercise and other activities to determine priorities and elicit concerns about evacuation procedures. We developed an Incident Action Plan and other resources to facilitate planning for a potential evacuation of headquarters.
ACKNOWLEDGEMENTS

We would like to thank our sponsors, Emily Keil, Chief of Administration, and Phil Wilson, Chief of Science & Resource Management for their support. We would also like to thank Micah Alley, Ranger Operations Coordinator for his contributions to our tabletop exercise. Additionally, we would like to thank the Glacier National Park Leadership team for their participation in “Fire on the Horizon,” as well as all other park staff who assisted in our research. We would also like to thank Juanita Nelson, the Flathead County Emergency Management Planner, for her assistance in our research. Finally, we would like to thank our advisors, Professor Leslie Dodson and Professor Beth Eddy, for their support and guidance throughout this project.
EXECUTIVE SUMMARY

According to the National Parks Conservation Association, “climate change is the greatest threat the national parks have ever faced” (National Parks Conservation Association, 2018). In the last 50 years, the western United States has experienced increases in wildland fire activity, including greater numbers of large fires, longer fire seasons, and larger areas burned (Abatzoglou and Williams, 2016). The heightened threat of intense wildfires in Glacier National Park has significant consequences for the safety and well-being of all stakeholders in the Park, including park employees, residents, and their families. The Park has extensive evacuation plans for visitors, but does not have comprehensive evacuation relocation plans for employees. This is particularly pressing in the Headquarters (HQ) District of the Park, where 350 employees work and 175 employees live.

A wildfire in this region could leave hundreds of employees and family members in need of temporary shelter and other necessities, such as food, water, and bedding.

"CLIMATE CHANGE IS THE GREATEST THREAT THE NATIONAL PARKS HAVE EVER FACED"

OBJECTIVES AND METHODS

Our project aimed to assist Glacier National Park in its efforts to care for evacuated seasonal and permanent employees who work and live in the Headquarters District. We pursued four objectives to meet this goal.
EXECUTIVE SUMMARY

OBJECTIVES

1. Identify practices to prepare seasonal and permanent staff for a potential evacuation of the Headquarters District.
2. Identify gaps in the pre-and-post-evacuation process from the perspective of park supervisors and employees.
3. Identify potential post-evacuation resources that park residents and employees already have at their disposal.
4. Develop resources for the Park to help facilitate future pre- and-post-evacuation training.

We reviewed evacuation preparation resources provided by park personnel and conducted semi-structured interviews with park staff to gain a greater understanding of pre-evacuation planning in the Park. We designed the “Fire on the Horizon” tabletop exercise for the Park’s Leadership Team (LT). In it, we presented a fire scenario affecting the Headquarters District and asked the LT to proceed as if it were a real emergency. During this activity we also presented evacuation and relocation complications that may not have been considered. This activity was designed to gauge how LT would react to an evacuation order of the HQ District and to identify areas for planning.

Employee Responses

“WHERE TO GO & WHAT TO BRING?”
“Where to live once evacuated”
“EMT, WFR, First Aid”
“Not knowing where to meet once evacuated”
“Camping Gear”

To explore park employees’ perspectives we attended a staff potluck meal, where we facilitated evacuation-themed prompts and activities. These activities included Emergency Bingo and Resource Bingo, as well as four prompts about staff evacuation concerns, potential relocation assets owned by staff, and potential assets that would be helpful for staff members to have in an evacuation. These activities gave us insight into some of the concerns of park staff regarding fire evacuations, as well as what assets they had that could be used during and after a potential evacuation.

Emergency Bingo Game. Photo by William Pagliarulo.
Fire on the Horizon

“Fire on the Horizon” participants. Photo by William Pagliarulo.

The “Fire on the Horizon” and the bingo games and prompts revealed gaps in pre-evacuation procedures, including a gap in the communication and understanding of expectations during the “Ready” and “Set” evacuation stages. Park staff members expressed concerns regarding the thoroughness of evacuation preparedness, specifically regarding complications such as loss of communications and internet due to power outages. We also found that park staff are not provided with any details regarding wildfire evacuation within their residences.

FINDINGS

Finding: Glacier National Park does not have an established evacuation rally point

During the “Fire on the Horizon” exercise, we learned that there is not an established rally point for Glacier National Park staff in the event of an evacuation. Rally points refer to locations where employees gather outside of the Park to ensure that all employees have been accounted for. This is also a major concern for employees who live and work in the Park, as they are not typically informed of where to go after an evacuation until shortly before they have to evacuate, leading to confusion about evacuation procedures.

U.S. Department of the Interior
National Park Service
Glacier National Park
Continuity of Operations Plan (COOP)

Finding: The Continuity of Operations Plan does not assign specific evacuation or relocation responsibilities to supervisors

We found that the Continuity of Operations Plan (COOP) was useful to park staff for certain evacuation procedures, but did not provide insight for assigning evacuation roles and responsibilities or provide information regarding where to go and how to get resources after an evacuation. We also found that while supervisor checklists are a good resource to account for employees, they may be incomplete, particularly when accounting for seasonal employees and interns.
**EXECUTIVE SUMMARY**

**Finding: Headquarters employees can use shelters established by the Red Cross in an evacuation**

Juanita Nelson, the Flathead County Emergency Management Planner, provided crucial information about Flathead County’s ability to provide relocation sites after an evacuation. She confirmed that it is not the Park’s responsibility to establish relocation sites. The Office of Emergency Services for Flathead County works with the Red Cross to designate emergency shelters for evacuees. These shelters would be large enough and available to accommodate Glacier National Park employees.

**Finding: Food and other resources would be provided by community organizations after an evacuation**

The Nite Owl Restaurant has provided food for evacuees in the past and could be a potential source of meals for evacuees in the future. The Salvation Army also would provide food for evacuees during large-scale evacuation efforts.

*Responsibility delegation in a Glacier National Park emergency.*
EXECUTIVE SUMMARY

RECOMMENDATIONS

We made a number of recommendations based on our findings to help clarify the responsibilities and actions to be taken by staff members during and after an evacuation. Additionally, we recommend that Park Leadership identify assets and skill sets that their staff members possess that could aid in an evacuation.

**Recommendation 1: Establish evacuation rally points**

We recommend that Glacier National Park establish a single, reliable rally point and a few backup rally points outside of the Park to be used in evacuations of the Headquarters District. We suggest that the Park contact the Superintendent’s office in School District VI about using the schools in Columbia Falls as a rally point.

**Recommendation 2: Make use of the goodwill garage during evacuations**

We recommend that the park make use of the goodwill garage during evacuations. In order to establish a larger collection of post-evacuation supplies, we recommend that the park encourage employees to donate to the goodwill garage. We also recommend that a semi-regular inventory be taken so the park has a general idea of the supplies they have on hand. The park may then benefit from establishing a plan to deliver the resources in this garage to relocated evacuees.

**Recommendation 3: Develop an initiative to discover assets to use in an evacuation**

We recommend that Glacier National Park leadership develop an initiative to identify assets owned by park staff that can be used in an emergency. We suggest that lists be created that include the resources, including skills and physical items, that Glacier National Park staff own, and those that staff members would be willing to lend to their neighbors and coworkers. These documents and accompanying awareness-raising program will help inform park leadership of what resources are available to evacuees and how to distribute resources most effectively.
### Assets of Glacier National Park staff.

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<td>Camping equipment, RVs, survival gear, Supplies in the goodwill garage</td>
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#### Recommendation 4: Expand staff evacuation training

We recommend fire evacuation education for Glacier National Park employees to distinguish between “Ready” and “Set” stages, and to provide lists of actionable items for staff members to complete at these stages. These training sessions could be completed during division meetings for HQ staff and residents, LT meetings, as well as during less-structured events such as staff potlucks or brown-bag lunches. We recommend that employees also be provided with digital, virtual, or in-person spaces to voice evacuation concerns to evacuation decision-makers, such as the Leadership Team, who can then integrate these concerns in evacuation planning.

#### Recommendation 5: Develop a talent roster for evacuations

In order to clarify the roles and responsibilities of park employees in an evacuation, we recommend the development of a living “talent roster” that lists employees with specific skill sets who can fill various roles in an evacuation. This roster would also include many levels of redundancy, including multiple back-up employees to fill in each role in the case that the primary employee is unavailable, off-site, or filling other duties during an emergency. This list should also be updated on a regular basis in order to maintain its relevance.
Recommendation 6: Establish evacuation awareness materials for Glacier National Park housing residents

We recommend wildfire evacuation awareness materials and documents for residents that include what actions to take before and during an evacuation. These documents could also include a comprehensive checklist of items to take with them, information about what to expect during the relocation process, and the difference between all stages of evacuations, including the actions needed to be taken during each.

“Today brought light to the need to practice this.”
- Elizabeth Maki, Acting Chief of Interpretation

“We don’t know how long we have for the ready stage so it would be nice to already be thinking about this beforehand.”
- Emily Keil, Chief of Administration

OUTCOMES

Materials to support more effective evacuation and post-evacuation planning in Glacier National Park

Our project aimed to assist Glacier National Park’s efforts to care for staff during and after a fire evacuation of the Headquarters District. We created two facilitator’s manuals to provide Glacier National Park personnel with frameworks for future staff training. The Incident Action Plan and Supervisor Checklists provide outlines for park leadership and supervisors to plan for evacuation and relocation efforts. These resources serve to facilitate further work around fire evacuation and relocation for Glacier National Park staff and residents.

Template Incident Action Plan (IAP)

We developed an Incident Action Plan (IAP) template for the Park’s leadership to use before and during an evacuation event. This document, modeled on guidance in the FEMA Incident Action Planning Guide (2012), is intended to help leadership organize critical information and develop a course of action in an incident. The IAP template includes space to outline incident objectives, as well as work assignments, resource allocation, and contact lists.

Adaptable facilitator’s manuals for tabletop exercises and information gathering activities

We developed facilitator’s manuals for running a tabletop exercise and evacuation-themed information gathering activities. These manuals are designed to be adaptive, so their contents can be applied for a variety of purposes.
“Ready, Set, Go!” infographic

We provided the Park with an infographic detailing the evacuation process and the Park’s “Ready, Set, Go!” framework. This document addresses misconceptions that park staff may have regarding when each stage occurs and what each stage entails.

Employee relocation preparedness checklist

We also developed a supervisor pre-evacuation checklist, which provides a place for supervisors to list their employees’ relocation plans and to account for any additional needs of employees during park relocation efforts.

Our “Ready, Set, Go!” Infographic.

CONCLUDING REMARKS

We were honored to work with Glacier National Park’s Leadership Team and other park personnel to enhance their evacuation protocols and ameliorate difficulties that could arise during an evacuation, continuing to care for its employees.
Hi! My name is Bethany Atwood and I am pursuing a degree in Biology and Biotechnology. This project has taught me a lot about the impact of wildland fires on communities in Glacier National Park. I am very grateful for being able to meet so many different park personnel and to hear from so many different perspectives.

Hi! My name is Jack Cascone and I am from East Northport, NY. I am majoring in Actuarial Mathematics and minoring in Data Science. This project helped me improve my writing and designing skills. My favorite part of our research was getting to meet park employees and learn about their daily responsibilities.

Hi! My name is Andrew Cochran. I am majoring in Biomedical Engineering. This project encouraged me to learn how to facilitate activities and interviews. My favorite part about this project was getting to learn about different aspects of how the Park functions from a variety of perspectives.

My name is Lauren McAdams, and I am pursuing a Biomedical Engineering Major. This project allowed me to improve my writing skills, and I now have more confidence conducting interviews. My favorite part of this project was learning more about the “behind the scenes” of a National Park.

My name is William Pagliarulo, and I’m from Bedford, NH. I’m a student-athlete pursuing a Mechanical Engineering degree with a minor in Robotics Engineering. This project pushed my writing and graphic design skills. I enjoyed working closely with park staff throughout the term.
Our report has been edited by each of the team members thoroughly. It would be inaccurate to assign any one paragraph or section to a single team member. Below are the authorship credits for our deliverables and designs.

**Bethany Atwood:** Ready, Set, BinGO Facilitator’s Manual writing and design, Tabletop Exercise Facilitator’s Manual writing, Pre-Evacuation Supervisor Checklist writing

**Jack Cascone:** Tabletop Exercise Facilitator’s Manual Writing, Executive Summary design, Report design

**Andrew Cochran:** Ready, Set, BinGO Facilitator’s Manual writing & design, Tabletop Exercise Facilitator’s Manual writing

**Lauren McAdams:** Incident Action Plan writing and design, Report design, Pre-Evacuation Supervisor Checklist writing

**William Pagliarulo:** “Ready, Set Go!” Flyer writing & design, Pre-Evacuation Supervisor Checklist design, Tabletop Exercise Facilitator’s Manual writing & design, Ready, Set, BinGO Facilitator’s Manual design
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- Objective 2: Identify gaps in the pre-and-post-evacuation process from the perspective of park supervisors and employees.
- Objective 3: Identify potential post-evacuation resources that park residents and employees already have at their disposal.
- Objective 4: Develop resources for the Park to help facilitate future pre-and-post evacuation training.

**Clearing the Smoke: Findings**

- The Leadership Team used heuristics to make decisions during the “Fire on the Horizon”
- There are gaps in the “Ready” and “Set” stages
- The Leadership Team does not have an established rally point
- The Leadership Team has not established relocation sites
- The COOP does not assign specific responsibilities to supervisors
- Current checklists may not be comprehensive or easy to access
- Park leadership relies on hierarchical structures
- Supervisors may not be prepared for additional responsibility during evacuations
- There are concerns about a loss of communication during an evacuation
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GLOSSARY

Resources
A VALUABLE SKILLSET OR ITEM THAT CAN BE USED TO BENEFIT OR ASSIST THE USER.

Assets
A VALUABLE SKILLSET OR ITEM OWNED BY A SPECIFIC PERSON, GROUP, OR ORGANIZATION

Checkpoints
LOCATIONS WITHIN OR OUTSIDE OF THE PARK THAT ARE USED TO ACCOUNT FOR EVACUATING PEOPLE WHILE THEY ARE ON THEIR WAY OUT

Rally Points
LOCATIONS OUTSIDE THE PARK WHERE EMPLOYEES MEET AFTER THEY HAVE EVACUATED

Relocation Sites
SHELTERS FOR EVACUEES FOR AN EXTENDED PERIOD OF TIME, WHICH PROVIDE NECESSARY RESOURCES
Ignition

Introduction
INTRODUCTION

Glacier National Park is situated in northwest Montana and encompasses more than 1,000,000 acres. In the western United States, larger, more intense wildland fires have swept across the landscape over the last 50 years. Scholars note that, “widespread increases in fire activity, including area burned, number of large fires, and fire-season length, have been documented across the western United States (US) . . . over the past half century” (Abatzoglou and Williams, 2016, para. 3). Certain climate attributes can influence the likelihood of a wildland fire, including increased fuel availability and fuel aridity, or fuel dryness, which have led to the “unprecedented fire spread and energy release observed during these large fire events” (Goodwin et al., 2021, Introduction). When accompanied by increased dead fuel loads, increased tree mortality due to acute drought “alter(s) the arrangement, composition, and quantity of fuel available for combustion. These fuel changes directly influence the spread and intensity of wildland fires” (Scott et al., 2018, The impacts of tree mortality on wildfire).

“THESE FUEL CHANGES DIRECTLY INFLUENCE THE SPREAD AND INTENSITY OF WILDLAND FIRES”

Anthropogenic, or human-induced, increases in fuel aridity have approximately doubled the western US forest fire area from 1984–2015 (Abatzoglou and Williams, 2016). While much of the ecology of the west has been adapted to wildfires (Defenders of Wildlife), human-caused climate change is poised to increase the threat of more intense wildfires in the future, making them harder to combat (Abatzoglou and Williams, 2016).
INTRODUCTION

Glacier National Park is a heavily forested area that is susceptible to these wildland fires. Abundant fuel loads, coupled with the increasingly hot and dry weather in the summer months, has increased the annual risk of wildfire in this area (National Parks Conservation Association, 2023). The annual acres burned from wildfires in the western US has increased by 650% since 1986 (National Parks Service, 2023). This increase has posed a threat to people living and working in the park and increased the risk of evacuation orders. Despite the increased risk for wildfire evacuations, Glacier National Park does not have comprehensive relocation plans for its employees.

Glacier National Park has established evacuation procedures for each of the seven park divisions, including Headquarters, the Going to the Sun Road corridor, Many Glacier, West Lakes, North Fork, Triple Divide, and Walton Two Medicine. These procedures include Supervisor and Employee Evacuation Plans, which document the evacuation responsibilities of supervisors and employees (US DOI National Park Service, 2021). The Park has also developed an extensive Continuity of Operations Plan (COOP). This document contains most of the park’s information regarding wildland fire evacuations, with a focus on resuming park operations once staff have been safely evacuated.

These documents outline procedures to prepare for and execute an evacuation order, but do not include post-evacuation plans outside of instruction for continuing operations. Glacier National Park also periodically holds optional evacuation training. However, these trainings are primarily focused on the evacuation of visitors, not employees (E. Keil, personal communication, September 5th, 2023).

Smoke column from 2003 Fires.

INTRODUCTION

While Glacier National Park has developed plans for evacuation and continuity of operations, the park does not currently have pre-established rally points, relocation sites, or resources to be used in an evacuation (E. Keil, personal communication, August 30, 2023). This is particularly pressing in the Headquarters (HQ) District of the Park, which contains office spaces for 350 employees and housed 156 seasonal staff members and 19 permanent employees in 2023 (E. Madsen and M. Applegate, personal communication, September 27, 2023). Due to the large number of employees living and working in the Headquarters District, a wildfire in this area would result in the need to potentially provide hundreds of employees and their families with temporary shelter, supplies, and food that will last for the duration of the evacuation. The Park is responsible for removing employees from immediate danger, and also for providing resources and facilities after evacuations to ensure their comfort and safety.

This project aimed to assist Glacier National Park in its efforts to plan and care for evacuated seasonal and permanent employees who work and live in the Headquarters District. This involved identifying practices to prepare seasonal and permanent staff for a possible evacuation of the Headquarters District by reviewing park documentation and conducting interviews with park personnel. It also involved identifying gaps in pre-and-post-evacuation process from the perspective of park supervisors and employees and identifying potential post-evacuation resources that park residents and employees may already have at their disposal.

View from fire watch tower. Photo by Jack Cascone.
THE FLAMES
BUILD
BACKGROUND

BACKGROUND

CLIMATE CHANGE AND WILDFIRES IN THE WEST

According to the National Parks Conservation Association, “Climate change is the greatest threat the national parks have ever faced” (National Parks Conservation Association, 2018). Fire scientists project that the number of acres burned annually by wildfires in the western United States may increase by 200-600% by 2050 (National Parks Conservation Association, 2023). This projected increase is due to the “more frequent, higher-intensity, and longer-burning” nature of modern wildfires (National Parks Conservation Association, 2023, para. 2). Climate change has led to warmer, drier conditions, resulting in “longer and more active fire seasons” (NOAA, 2022, para. 4). The impact of climate change on the increased length of wildfire season, as well as the frequency and intensity of wildfires in the West has increased the threat of fire for Glacier National Park (GLAC) stakeholders, including park employees, residents, and their families.

WILDFIRES IN GLACIER NATIONAL PARK

Wildfires occur in Glacier National Park annually, with the majority of fires occurring between July and August (US National Parks Service, 2023). Despite the adaptivity of the park’s ecological systems, wildfires continue to pose a threat to park staff, residents, and concessioners. This was the case in the 1988 Red Bench fire, which “nearly wiped the community of Polebridge off the map” (Defenders of Wildlife, Scott, 2018, para. 4). The Red Bench fire started from a lightning strike. A smoldering dead tree burst into flames in the Flathead National Forest. The fire was pushed by northwest winds and burned through Polebridge and North Fork in the Park. Within a day, the fire jumped the North Fork Flathead River and entered the western boundary of Glacier National Park (Decker, 1989). Approximately 38,000 acres of land burned, including national park, national forest, and private land (Peterson, 2023). The burned terrain included a mixture of “intensively managed timber lands of the Flathead National Forest as well as pristine lands of Glacier National Park” (Wagner, 1993, Introduction). The fire actively burned for eleven days, and resulted in 19 firefighter injuries and one firefighter death (Franz, 2015).
BACKGROUND

THE FIRES OF 2003

In the summer of 2003, a series of 26 wildfires burned approximately 136,000 of Glacier National Park’s 1,000,000 acres, making it the most significant fire season in the Park’s history (Fire History- Glacier National Park, n.d.). These fires burned along the densely-forested western and central regions of the park, causing widespread damage (Franz, 2013).

The most damaging of the 2003 fires was the Robert Fire, which burned more than 57,000 acres of forest near West Glacier and the Lake McDonald Valley (Franz, 2013). Originating west of HQ in Flathead National Forest, this human-caused fire grew rapidly. The fire jumped the North Fork Flathead River on the western boundary of Glacier National Park and threatened the HQ District within the first two days of ignition (Chaney, 2023). Approximately 3,000 park staff and visitors had to be evacuated from Lake McDonald Valley, HQ, and Apgar Village within one day after the fire was spotted (Franz, 2013). After the evacuation, many seasonal park employees found local hotels to stay in, while most permanent staff stayed with community members in their homes. (T. Carolin, personal communication, August 30, 2023).

Areas of the Park (shown in red) burned by the 2003 Fires (Spencer et al., 2004).
In addition to workspaces, the HQ district also contains a housing compound for 156 seasonal summer employees, as well as 19 permanent staff members and their families (E. Madsen and M. Applegate, personal communication, September 27, 2023). Headquarters is the most heavily populated district in the Park, so a wildfire affecting this region would likely result in a large-scale evacuation, and would require post-evacuation relocation sites and resources for anywhere from 100 to 300 employees. Thus, an evacuation of this scale requires planning and consideration.

THE THREAT OF WILDFIRES IN THE HEADQUARTERS DISTRICT

Glacier National Park is divided into seven districts, each with individual fire evacuation plans (T. Carolin, personal communication, August 23, 2023). The threat of wildfires is especially pressing in the Headquarters (HQ) District, which contains workspaces for approximately 350 park staff members during the summer season, from late May to September.
BACKGROUND

GLACIER NATIONAL PARK COOP AND EVACUATION PLANS

When preparing for wildfire evacuations, Glacier National Park refers to district evacuation plans and the Continuity of Operations Plan (COOP) (Wilson et al., 2020). The COOP details the steps to be taken by the COOP team during an emergency. The COOP team is composed of the Leadership Team (LT) and an Incident Management Team (IMT). As noted in the COOP, the LT is responsible for establishing safety and operational goals and “provides the strategic direction and focus to ensure daily [park] operations” (Wilson et al., 2020, p. 8).

Leadership Team positions.

- PARK SUPERINTENDENT
- DEPUTY SUPERINTENDENT
- CHIEF RANGER
- CHIEF OF INTERPRETATION
- CHIEF OF FACILITIES
- SCIENCE AND RESOURCE MGMT
- CHIEF OF ADMINISTRATION
- CHIEF OF CONCESSIONS
- SAFETY AND OCCUPATIONAL HEALTH
- PUBLIC INFORMATION OFFICER
- EXECUTIVE ASSISTANT
- LEADERSHIP TEAM INTERN

Glacier National Park Headquarters District, along with labels of buildings and walking tour trails (Glacier National Park, 2017).

The LT includes the Park Superintendent, Deputy Superintendent, and six division chiefs. The IMT takes direction from the LT and carries out tasks that will maintain essential park functions, including “assigning responsibility, tracking status, and ensuring completion/accountability” as outlined by the LT (Wilson et al., 2020, p. 8).
BACKGROUND

READINESS PLANS FOR SUPERVISORS AND EMPLOYEES

The Leadership Team has also developed evacuation readiness plans for park supervisors and employees, which are listed in the COOP (US DOI National Park Service, 2021). These plans include Pre-Evacuation Checklists for both supervisors and employees to reference in the event of an evacuation order (Appendix A). Evacuation orders are categorized as deliberate, urgent, or immediate depending on the safety threat posed to people in the park (Wilson et al., 2020).

![Image of burned trees](image-url)


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**Characteristics of Glacier National Park evacuation levels.**

<table>
<thead>
<tr>
<th>Evacuation Levels</th>
<th>Definition</th>
<th>Timing</th>
<th>Action</th>
<th>Causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deliberate</td>
<td>Potential risk for a threat to human safety.</td>
<td>Far in advance of evacuation. No set timeline.</td>
<td>ICS already in place. Incident briefings held.</td>
<td>Utility failures, anticipated hazardous material release, forecasted extreme weather</td>
</tr>
<tr>
<td>Urgent</td>
<td>Threat to human safety in the near future.</td>
<td>Notification is hours or days before evacuation.</td>
<td>Initiate ICS if not already. Incident briefings held.</td>
<td>Approaching wildfires, threats of a hazardous material release.</td>
</tr>
<tr>
<td>Immediate</td>
<td>Imminent threat to human safety.</td>
<td>Little time for advance planning or warnings.</td>
<td>Initiate ICS. Responders take immediate action.</td>
<td>Wildfires in direct proximity to humans, hazardous material release.</td>
</tr>
</tbody>
</table>

Definitions of the deliberate, urgent, and immediate fire evacuation levels, including how far in advance these orders are given before evacuation, the actions taken by ICS for each level, and the cause of each level (Wilson et al., 2020).
HEADQUARTERS DISTRICT EVACUATION PLAN

Another key evacuation planning document is the HQ District Evacuation Plan. This document shows a map of the five notification teams responsible for notifying all seasonal and permanent staff in the HQ district, housing compound, and outlying offices of evacuation orders (Alley, 2017). Each notification team includes up to four employees, who are responsible for many tasks, including posting evacuation orders on exterior doors, flagging office doorknobs, and providing staff with Employee Evacuation Checklists (Alley, 2017).

Map depicting the evacuation route for the Headquarters District, as outlined in the HQ District Evacuation Plan (Alley, 2017).

<table>
<thead>
<tr>
<th>Unit Identifier</th>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1</td>
<td>Notify staff electronically</td>
</tr>
<tr>
<td>N2</td>
<td>Notify cooperators electronically</td>
</tr>
<tr>
<td>N3</td>
<td>Notify HQ Bldg staff in person</td>
</tr>
<tr>
<td>N4</td>
<td>Notify compound staff in person</td>
</tr>
<tr>
<td>N5</td>
<td>Notify outlying offices in person</td>
</tr>
<tr>
<td>A1</td>
<td>Prevent Egress and Provide Accountability</td>
</tr>
</tbody>
</table>

The tasks of each headquarters notification team in an evacuation are listed above. The “Unit Identifier” refers to the title of each notification team (N1, N2, etc) (Alley, 2017).
“READY, SET, GO!”

The main framework that park staff and residents use to plan for evacuations is called “Ready, Set, Go!” (Wilson et al, 2020). The “Ready, Set, Go!” framework lays out the course of action up to and in the moment of an evacuation (Ready For Wildfire, 2019). For instance, due to high temperatures and dry conditions in the summer at Glacier National Park, the “Ready” stage is ongoing throughout the summer months. During these months, Park residents are encouraged to prepare an emergency “go-bag” to be used in the event of an evacuation (Appendix A; Berger, 2020). A sample “go-bag” checklist is shown below.

<table>
<thead>
<tr>
<th>Emergency go-bag checklist.</th>
</tr>
</thead>
</table>
| Go-Bag/Emergency Supply Kit Checklist
| ___ Non-perishable food
| ___ Water
| ___ Prescriptions or special medications
| ___ Change of clothing
| ___ Extra eyeglasses or contact lenses
| ___ An extra set of ear keys, credit cards, cash
| ___ First aid kit
| ___ Headlamp and/or flashlight
| ___ Battery-powered radio and extra batteries
| ___ Sanitation supplies
| ___ Copies of important documents (birth certificates, passports, etc.)
| ___ Pet food and water
| ___ Cell phones and other communication devices
| ___ Cell phone chargers

The items that are recommended to pack in an emergency go-bag during the “Ready” stage (US DOI National Park Service, 2021).

The “Set” stage indicates that an evacuation is highly likely (US DOI National Park Service, 2021). In the “Set” stage, emergency alerts are disseminated through an Everbridge notification system to employees who have signed up to receive this information. Everbridge collects data from various sources, including “sensors, people in the field, social media trends, and weather inputs” (Chan, 2017, p. 2-3). Organizations such as the National Park Service use this information to determine the severity of a problem and disseminate necessary information as needed (Chan, 2017). Everbridge is utilized for evacuations, road and land closures, and a variety of other emergencies. These warnings are sent out within days or weeks of an evacuation order, alongside information regarding evacuation routes and relocation sites. However, this system is limited by the lack of cell service in many areas of the Park.

When fire danger is imminent, the Chief Ranger will issue an evacuation order, prompting the “Go!” stage of evacuation (US DOI National Park Service, 2021). This order is communicated through dispatch, email, text alerts, and door-to-door communication (E. Keil and P. Wilson, personal communication, September 5, 2023).
TYPES OF RELOCATION SITES

Before the “Go!” stage of evacuation, relocation sites are established for evacuees (FEMA, 2009). Cassidy Johnson, a scholar from the University of Montreal, notes that in determining appropriate relocation sites for evacuations, there are four main types to consider: emergency shelters, temporary shelters, temporary housing, and permanent housing (2007).

Emergency shelters are meant to accommodate evacuees briefly so they do not require “extensive preparation of food or prolonged medical services” (Johnson, 2007, p. 436). Temporary shelters are meant for a longer stay than emergency shelters, but also do not have all the resources necessary for a long-term stay, such as a large food supply, extra clothing, and refrigeration. Temporary housing is designed for a longer-term stay, and thus includes resources needed to sustain evacuees for weeks or months. Permanent housing is used when an evacuee loses their home, and they have to relocate to a new home. Depending on the needs of the population requiring shelter, multiple specialized relocation sites might be needed to meet a variety of needs and to provide adequate space (FEMA, 2009).

<table>
<thead>
<tr>
<th>Type of Lodging</th>
<th>Timeframe</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Shelters</td>
<td>Hours to Days</td>
<td>Stadiums &amp; schools</td>
</tr>
<tr>
<td>Temporary Shelters</td>
<td>Days to Weeks</td>
<td>Tents, self-built structures, public facilities</td>
</tr>
<tr>
<td>Temporary Housing</td>
<td>Weeks to Months</td>
<td>Prefabricated temporary house, winterised tent, mobile home, apartment, home of family or friend</td>
</tr>
<tr>
<td>Permanent Housing</td>
<td>Indefinite</td>
<td>Houses and apartments, reconstruction of former house</td>
</tr>
</tbody>
</table>

Types of relocation sites and the duration they are typically used for. Emergency and temporary shelters are intended for short-term use. Temporary and permanent housing require additional resources, as they are intended for longer-term stays (Johnson, 2007).
BACKGROUND

DETERMINING RELOCATION SITES

Relocation sites “require safe, secure and equitable access to essential services” such as water, fuel for cooking, and waste disposal (The Sphere Project, 2011, p. 255). Additionally, key considerations for planning include evaluating the risks associated with shelters and their accessibility. For shelters that require camping there should be a “minimum usable surface area of 45 square metres for each person,” and need to be appropriate for use for the location’s climate (The Sphere Project, 2011, p. 257).

Many lessons can be learned from previous relocation efforts during Hurricane Katrina, where flooding resulted in the evacuation of approximately 1.2 million people. This disaster “created an unprecedented need for shelter and temporary housing” for hundreds of thousands of people (Nigg et al., 2006, p. 113). In order to accommodate all evacuees, the state of Louisiana repurposed a variety of public spaces, including stadiums, convention centers, and arenas into relocation sites (Nigg et al., 2006). The Hurricane Katrina response illustrates the importance of flexibility in identifying multiple relocation shelters for a variety of potential evacuation scenarios (Nigg et al., 2006). However, in a survey of 680 Hurricane Katrina evacuees, more than 50% of the respondents lacked sufficient food or water, 33% did not have necessary prescription medicines, and 25% could not obtain the medical treatment they needed during their time in relocation sites (Brodie et al., 2006). Many people with disabilities also lacked necessary resources during the aftermath of Hurricane Katrina, as “many thousands of people with disabilities faced lack of access to emergency supplies, ... poorly designed shelter space, and non-accessible emergency housing” (Pyke & Wilton, 2020, Introduction).
BACKGROUND

DETERMINING DISASTER RELIEF RESOURCES

To anticipate the resources required in providing disaster housing, “planners must: 1) assess the nature and magnitude of a disaster, 2) prioritize individual and household needs, 3) understand the broader community characteristics, and 4) be familiar with available housing options that are appropriate within their area” (FEMA, 2009). According to the Humanitarian Charter, an international initiative aimed at improving the effectiveness of disaster responses, people have “the right to life with dignity, the right to protection and security and the right to receive humanitarian assistance on the basis of need” (The Sphere Project, 2011).

In accordance with the Americans with Disabilities Act, shelters must accommodate people with a variety of needs, including those with special needs and disabilities, and those who use assistive technology, medical equipment, or service animals (FEMA, 2009). However, people with disabilities often experience “difficulties in accessing emergency services because of preexisting health conditions or vulnerabilities” at relocation sites (Nick et al., 2009, p. 338). To accommodate for the needs of all people, shelter options should be “flexible and adaptable to enable shelter operations to be responsive as new issues emerge” (FEMA, 2009, p. 3).

As noted by the Office for Civil Rights and Civil Liberties, there are a variety of action steps that can be taken to better provide for individuals with disabilities in temporary shelters. These action steps include providing accessibility for people needing wheelchairs and handicap bathrooms, providing refrigeration and electricity for those needing life-sustaining medications and devices, adopting procedures in shelters for those who are hard of hearing, and allowing for accommodations regarding the use of service pets in temporary shelters (Office for Civil Rights and Civil Liberties, 2005).

DECISION-MAKING IN A DISASTER SITUATION

In an environmental disaster such as a wildfire, poor decisions can lead to “life changing consequences” (Andrzejewska et al., 2013, p. 9). Decision-making in a disaster situation is much more difficult for those without “experience of operational disaster management” (Paton & Flin, 1999, Incident Management and Control). “In addition to having to deal with a complex, unpredictable and dynamic response management environment, emergency managers may
have to contend with a degree of personal danger.... Time pressure is [also] a common stressor in certain types of disaster” (Paton & Flin, 1999, Introduction). According to Roger C. Hudler (2012), a Certified Emergency Manager in large-scale public events, an effective way to improve decision-making skills in a disaster is to make it a habit to analyze, exercise, and learn from previous efforts. Hudler says this includes not only studying the decisions that were made, but how they were made.

HEURISTICS-BASED DECISION-MAKING

Heuristics-based decision-making strategies can be employed to save time and effort. There are many types of heuristics, but in a broad sense, heuristics are informal rules that are simple and can lead to a solution of an intricate problem (Mousavi & Gigerenzer, 2014). Gigerenzer and Gaissmier (2001), scholars in the field of decision-making, previously stated that heuristics’ simple nature stems from omitting the confusing, time consuming aspects of a problem, ultimately increasing efficiency. The difference between the ‘simple’ framework and an optimization method is that “heuristics do not try to optimize (i.e., find the best solution), but rather satisfice (i.e., find a good-enough solution)” (Gigerenzer, 2008, para. 2). The use of heuristics allows decision-makers to “reduce [their] cognitive load,” delegating less time per decision (The Decision Lab, 2023).

THE ADAPTIVE TOOLBOX

The “Adaptive Toolbox” theory describes how the human mind works when making decisions (Gigerenzer, 2008). “The mind resembles an Adaptive Toolbox with various heuristics tailored for specific classes of problems—much like the hammers and screwdrivers in a handyman’s toolbox” (Gigerenzer, 2008, para. 3). These tools allow for decisions to be made quickly by performing a few basic observations. Decision-makers can consider the recognizability, familiarity, and sufficiency of any options they are presented with, as well as look to others for guidance (Gigerenzer, 2008).

The use of heuristics and the Adaptive Toolbox are relevant in response to a disaster, where there is often little time for decision-making. This toolbox provides heuristic tactics that result in “judgment that is fast in consciousness, whose underlying mechanism is unconscious, yet is nevertheless strong enough to act upon” (Gigerenzer, 2008, The Adaptive Toolbox). This judgment is applicable to determine how evacuees might be taken care of in a disaster context. The Adaptive Toolbox provides heuristic tactics that can thus be used to make decisions quickly in an emergency situation such as a disaster.
**BACKGROUND**

The Adaptive Toolbox.

<table>
<thead>
<tr>
<th>Heuristic Tactics</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognition</td>
<td>If there are two options and one is recognized, choose that one.</td>
</tr>
<tr>
<td>Fluency</td>
<td>If one option is recognized faster than the others, choose that one.</td>
</tr>
<tr>
<td>Satisficing</td>
<td>Choose the first alternative that exceeds a desired outcome.</td>
</tr>
<tr>
<td>Imitate Majority</td>
<td>Copy the behavior of the majority.</td>
</tr>
<tr>
<td>Imitate Success</td>
<td>Copy the behavior of the most successful.</td>
</tr>
<tr>
<td>Availability</td>
<td>Relies on information that comes to mind quickly, but may not be accurate</td>
</tr>
</tbody>
</table>

*Definitions of some of the tactics that humans use to construct their Adaptive Toolbox (Gigerenzer, 2008; Gigerenzer & Gaissmaier, 2011).*

**ASSET-BASED COMMUNITY DEVELOPMENT**

Should a wildfire cause an evacuation of residents in Glacier National Park, evacuees may have to leave their homes for an unknown period of time, and thus may be in need of shelter and other resources for both comfort and survival. Providing sufficient resources to many people in an emergency can be achieved by making use of the assets, or useful items, already owned by members of the affected community. According to Rolando Tomasini, a research program manager at INSEAD, an organization that conducts research in disaster management, explained that resource sharing in disaster relief operations may reduce operational costs (2009).

According to Johnson (2007), it is not possible to fully predetermine the resources required for temporary housing, as “the public resources required for sheltering cannot be locked into specific pre-planned programmes” (p. 438).
BACKGROUND

THE ASSET-BASED COMMUNITY DEVELOPMENT FRAMEWORK

One framework that may help to utilize resources is “Asset Based Community Development” (ABCD). The ABCD framework encourages communities to identify assets of individual members, associations, and institutions that can benefit the community at large (Nurture Development, 2016). ABCD encourages the use of resources internal to a community before looking outwards towards external resources. When using this framework, “external resources are not sought [by communities] until local resources have been utilized and clear understanding of what is needed is known” (Nurture Development, 2016). There are five types of assets that are typically recognized utilizing the ABCD framework. These include individual skills and knowledge, associations such as clubs and groups, institutions such as government agencies, location-based assets such as the land or heritage of an area and connections, including social networks (Nurture Development, 2016).

TRUST AND COMPASSION

A recent case study on the 2017 Southern California Wildfires investigated the willingness of evacuees to share resources in an emergency situation, hypothesizing that “trust and compassion could trigger willingness to share transportation and sheltering resources during an evacuation” (Wong et al., 2021, Abstract). A survey administered to approximately 500 individuals affected by these fires found that people were more likely to share their resources and offer help to others in the event of an evacuation than otherwise. Furthermore, communities with a pre-established “sharing economy,” who have a strong sense of community and a regular trade of goods and services amongst community members, are more likely to show compassion to their affected neighbors during a disaster (Wong et al., 2021, Section 2.2).

<table>
<thead>
<tr>
<th>Assets</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skills and Knowledge Based</td>
<td>CPR, EMT, Wilderness First Responder (WFR)</td>
</tr>
<tr>
<td>Associations</td>
<td>American Red Cross, Habitat for Humanity, Peace Corps</td>
</tr>
<tr>
<td>Institutions</td>
<td>Private businesses, schools, government agencies</td>
</tr>
<tr>
<td>Location-Based</td>
<td>Land, buildings, green spaces</td>
</tr>
<tr>
<td>Connections</td>
<td>Social and professional networks, friendships, partnerships</td>
</tr>
</tbody>
</table>

Examples of each type of asset under the ABCD framework.
BACKGROUND

APPRECIATIVE INQUIRY

One aspect of the ABCD framework is appreciative inquiry, which can be helpful in learning from past wildfire evacuation and relocation efforts. Appreciative inquiry focuses on “collective narratives and local histories to study how learning from the experiences and achievements of the past can prompt positive change” (Foster and Mathie, 2001, Appreciative Inquiry). Rather than focusing on the negative aspects of past experiences, appreciative inquiry places emphasis on how past experiences can be used to inform future action (Alevizou, 2016). This framework requires discussion among community members in order to reveal shared experiences. This discussion can be formatted as a group session or other “narrative exchange activities,” which give community members a platform to express their thoughts (Foster and Mathie, 2001, Appreciative Inquiry). This framework helps community members to identify past problems and how they can be addressed in the future using the resources available to the community (Foster and Mathie, 2001).
Embers Fly
Methodology
The goal of our project was to assist Glacier National Park in its efforts to plan and care for evacuated seasonal and permanent employees who work and live in the Park’s Headquarters District. To achieve this, we were guided by four objectives:

1. Identify practices to prepare seasonal and permanent staff for a potential evacuation of the Headquarters District.

2. Identify gaps in the pre-and-post-evacuation process from the perspective of park supervisors and employees.

3. Identify potential post-evacuation resources that park residents and employees already have at their disposal.

4. Develop resources for the Park to help facilitate future pre-and-post evacuation training.
OBJECTIVE 1:
IDENTIFY PRACTICES TO PREPARE SEASONAL AND PERMANENT STAFF FOR A POTENTIAL EVACUATION OF THE HEADQUARTERS DISTRICT.

To gain a better understanding of current pre-evacuation protocols for workplaces and residences in the Headquarters District in West Glacier, we reviewed resources provided by park personnel and we conducted semi-structured interviews with park personnel to learn more about staff evacuation preparation.

METHOD:
REVIEW COOP AND DISTRICT EVACUATION PLANS FOR GLACIER NATIONAL PARK

To learn about the Park’s evacuation procedures, we reviewed Glacier National Park’s COOP, an extensive 224-page document that describes each park divisions’ responsibilities in an emergency scenario. There are numerous appendices listed in the COOP that include various evacuation protocols. The most relevant sections for our project were those that discussed the “Ready, Set, Go!” stages, which lists evacuation levels and evacuation plans for both employees and supervisors. There are checklists for each of the three “Ready, Set, Go!” evacuation stages, as well as an additional “go-bag” checklist. There is also a pre-evacuation checklist for park employees and supervisors.

We also studied the district evacuation map for the Headquarters District. The evacuation map showed how park staff are distributed by task to notify staff and residents of evacuation orders in the headquarters district. The map also listed specific staffing needs and priorities associated with notifying headquarters. We reviewed these priorities and notification pathways to gain a greater understanding of pre-evacuation planning in the park.
METHOD: KEY INFORMANT INTERVIEWS

We conducted key informant interviews with our sponsors, Emily Keil, Chief of Administration and Phil Wilson, Chief of Science and Resource Management, to ask about the preparation that goes into an evacuation of Headquarters, and to learn specific details about how the park informs its staff of impending evacuation warnings and orders.

We also held key informant interviews with Housing Manager Erin Madsen and Housing Assistant Matt Applegate to gain insight into the number of residents who would need to be accounted for in temporary evacuation sheltering. We also consulted them to understand evacuation concerns from a residential perspective, including how evacuation information is communicated to residents and if there were any helpful evacuation resources in residential buildings.
OBJECTIVE 2: 
IDENTIFY GAPS IN THE POST-EVACUATION PROCESS FROM THE PERSPECTIVE OF PARK SUPERVISORS AND EMPLOYEES.

Our team aimed to gain insight into the perspective of park supervisors and employees regarding post-evacuation efforts in the Headquarters District. To accomplish this, we conducted semi-structured and pop-up interviews, held a tabletop exercise with the Leadership Team, and conducted evacuation-related activities at an all-staff potluck.

METHOD: INTERVIEW PARK SUPERVISORS ABOUT EVACUATION PLAN IMPLEMENTATION

To gauge staff knowledge of post-evacuation procedures in the park, we conducted key informant interviews with park leadership and staff members. These interviews allowed us to gather a variety of perspectives and determine where inconsistencies in evacuation information existed among park supervisors. We consulted Tara Carolin, the Director of the Crown of the Continent Research Center, for information on how evacuations have been carried out in the past, and what information she would like further clarification on in the event that an evacuation order was given. We also consulted with Micah Alley, the park’s Ranger Operations Coordinator, as a key contact for evacuation training and resources. Micah Alley’s responsibilities involve establishing operations regarding park residents and visitors, but we found his expertise applicable to employee operations as well. During our consultation, he suggested a simulated evacuation exercise for park supervisors and officials, referred to as tabletop exercise, to determine potential knowledge gaps for park leadership.

METHOD: “FIRE ON THE HORIZON” EXERCISE

We designed and conducted a tabletop exercise for the Leadership Team (LT) on September 19th, 2023, named “Fire on the Horizon”, to determine where gaps existed in current evacuation plans for park leadership. A tabletop exercise is an activity where a team or an individual presents a simulated scenario to a stakeholder group and asks them to approach the problem as if it was a real event. The LT is responsible for making
METHODOLOGY

important evacuation decisions, as this team includes each park division chief, as well as the Park Superintendent and Deputy Superintendent. We created a comprehensive fire scenario for the tabletop exercise that required the LT to evacuate the Headquarters District within 24 hours.

Maps and resources from “Fire on the Horizon.”

Another component of the tabletop exercise was the introduction of different evacuation complications, in addition to the initial fire scenario. We developed nine different evacuation complications from the point of view of hypothetical headquarters employees. Using these complications, our team aimed to gauge how LT would respond to realistic issues that may not have been initially considered. We delivered these complications at intervals throughout the exercise, using an “Attention” screen and a buzzer sound effect.

“Attention!”

This slide was used during the activity to signify that our team was presenting a further complication to the fire scenario. The Leadership Team was then asked how they would address these complications.
METHOD: STAFF POTLUCK MEAL EVACUATION CONCERNS ACTIVITIES

Our team also attended an all-staff potluck on September 27th, 2023, where we set up a table to ask the seasonal and permanent staff in attendance a multitude of questions, including their experience and concerns regarding an evacuation. We wrote four prompts on large sticky notes and encouraged staff members to write their responses directly on the paper. Two prompts were intended to reveal primary concerns of park staff members regarding fire evacuations. We also created an Emergency Bingo game, which listed various evacuation concerns, and directed staff to circle concerns they had. These activities were designed to provide insight into some of the concerns of park staff regarding fire evacuations.
OBJECTIVE 3:
IDENTIFY POTENTIAL POST-EVACUATION RESOURCES THAT PARK RESIDENTS AND EMPLOYEES ALREADY HAVE AT THEIR DISPOSAL.

Our team focused on determining check-in points and relocation sites for evacuations from the Headquarters district, as well as identifying resources for evacuees. To determine potential relocation sites, we reached out to six key informants inside the park, as well as Juanita Nelson, the Flathead County Emergency Management Planner, to gain further insight into establishing relocation points and resources in the county.

METHOD: ESTABLISH POTENTIAL EVACUATION RELOCATION POINTS

In order to find potential evacuation relocation centers, we spoke with our sponsors to determine the spatial and resource needs for headquarters evacuees. We also interviewed Juanita Nelson, the Flathead County Emergency Management Planner, to determine the county’s ability to provide relocation sites and resources after an evacuation. We aimed to learn more information regarding establishing rally points and relocation centers for the park, as well as locations the park might be able to use for additional post-evacuation resources. We also studied maps of Flathead County and drove through towns close to West Glacier. We were looking for locations that could serve as temporary shelters for approximately 150 staff members, and locations that could serve as rally points for up to 300 vehicles.
METHODOLOGY

METHOD: APPLY ABCD FRAMEWORK

To identify resources available to evacuees, we utilized an ABCD framework. This method of thinking allowed us and park employees to consider ways to repurpose the resources already at the park’s disposal in an emergency. The ABCD framework informed the development of the games and asset-related prompts presented at the staff potluck, as well as the analysis of the responses we received. Our team analyzed the responses from the activities to compile a list of resources that park staff had and their frequency. This information was then used to consider how these resources can be utilized to provide resources for park staff in an evacuation.

STAFF POTLUCK MEAL: ASSETS OF PARK STAFF

Two of our written prompts related to the resources that park staff had at their disposal. Staff members were encouraged to write their responses to these questions on large sticky notes. These prompts were intended to inform us of assets that park staff would need in an evacuation, as well as what assets they already have.
OBJECTIVE 4:
DEVELOP RESOURCES FOR THE PARK TO HELP FACILITATE FUTURE PRE-AND-POST EVACUATION TRAINING.

Our team created a variety of resources for park staff and supervisors to use in future evacuation relocation planning. We created two adaptable facilitator’s manuals for supervisors, one for conducting tabletop exercises and one for conducting evacuation-themed information gathering activities. These manuals were developed based on feedback from park leadership and staff and were created to promote clear communication of evacuation and relocation expectations between supervisors and staff. They include template Powerpoint slides and examples of each of the components of these activities. We also developed a template Incident Action Plan (IAP) that can be used daily in preparation for a variety of park incidents. The IAP provides a space to define daily incident objectives and actions, identify trigger points for further incident action, and identify rally points. Our other resources include a supervisor pre-evacuation checklist and a “Ready, Set, Go” evacuation planning infographic. The supervisor pre-evacuation checklist provides a place for supervisors to list their employees’ relocation plans and to account for any additional needs of employees during park relocation efforts. The “Ready, Set, Go” infographic is an informal educational resource for staff to clarify the expectations of different preparatory evacuation stages.
Clearing the Smoke

Findings
OUR KEY INFORMANTS

MICAH ALLEY, RANGER OPERATIONS COORDINATOR

Micah Alley was particularly helpful in helping our team design and conduct our tabletop exercise, “Fire on the Horizon.”

EMILY KEIL, CHIEF OF ADMINISTRATION

Our sponsor, Emily Keil, was extremely helpful in giving our project direction and providing critical information to help our project.

JUANITA NELSON, FLATHEAD COUNTY EMERGENCY MANAGEMENT PLANNER

Juanita Nelson highlighted the details of establishing rally points, relocation sites, and evacuation resources in Flathead County.

PHIL WILSON, CHIEF OF SCIENCE & RESOURCE MANAGEMENT

Our Sponsor Phil Wilson, was a significant help in scoping our research and suggesting deliverables for our team to leave with the Park.
Our project aimed to assist Glacier National Park in its efforts to care for evacuated seasonal and permanent employees who work and live in the park’s Headquarters District. To achieve our goal, our first objective was to identify practices of preparing seasonal and permanent staff for an evacuation of the Headquarters District. Our next objective was to identify gaps in the post-evacuation process from the perspective of Park supervisors and employees. Our third objective was to identify potential resources available for park residents and employees after evacuation. Our fourth objective was to develop resources for the park to help facilitate future pre-and-post evacuation training.

Our research required the consideration of a variety of stakeholders who work and live in Glacier National Park. We conducted 13 semi-structured interviews to identify a range of perspectives on relocation preparation in the event of a fire near the Headquarters District of Glacier National Park. We held these interviews with employees of different park positions, in addition to the Flathead County Emergency Management Planner. We also facilitated a tabletop exercise titled “Fire on the Horizon,” with eight representatives of the Park’s Leadership Team, known as the LT. Additionally, we presented a variety of prompts and bingo activities, collectively referred to as the evacuation-themed information gathering activities, that 12 other park staff participated in at an all-staff potluck meal.

The four prompts were as follows:

1. What are your concerns regarding fire evacuation?
2. What comes to mind when you hear ‘fire evacuation?’
3. What resources would be helpful to you during and after a fire evacuation?
4. What assets do you have that can be used in an evacuation or for a relocation?

These activities helped our team better understand the staff members’ evacuation experiences and concerns.
FINDINGS

Note: There are multiple instances when we quote a “Leadership Team member” without providing a name or position title. We did so to ensure the confidentiality of Leadership Team members who participated in “Fire on the Horizon.” We have only included the name and position title for our project sponsors and participating key informants, including Emily Keil, Chief of Administration; Phil Wilson, Chief of Science and Resource Management; Micah Alley, Ranger Operations Coordinator; and David Roemer, Park Superintendent. All other members of the Leadership Team who participated in the activity are cited as “Leadership Team Member.”

Key informants in our research.

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micah Alley</td>
<td>Ranger Operations Coordinator</td>
</tr>
<tr>
<td>Matt Applegate</td>
<td>Housing Assistant</td>
</tr>
<tr>
<td>Kristen Friesen</td>
<td>Budget Technician</td>
</tr>
<tr>
<td>Emily Keil</td>
<td>Chief of Administration</td>
</tr>
<tr>
<td>Erin Madsen</td>
<td>Housing Manager</td>
</tr>
<tr>
<td>Juanita Nelson</td>
<td>Flathead County Emergency Management Planner</td>
</tr>
<tr>
<td>Phil Wilson</td>
<td>Chief of Science and Resource Management</td>
</tr>
</tbody>
</table>

The informants who contributed significantly to our research are listed in alphabetical order above.

Written prompts from the staff potluck meal.

The prompts presented to park staff during the potluck meal. These prompts were written on large sticky notes, and employees were encouraged to write their responses beneath the prompt. Photo by Jack Cascone.
FINDINGS

FINDING: THE LEADERSHIP TEAM USED HEURISTICS TO MAKE DECISIONS DURING THE “FIRE ON THE HORIZON” TABLETOP EXERCISE

In “Fire on the Horizon,” we created a comprehensive fire scenario that required the LT to discuss how they would evacuate the Headquarters District within 24 hours. We also presented nine additional evacuation complications throughout the exercise. This exercise provided insight into how various members of the Leadership Team thought about, planned for, and carried out evacuations. We evaluated the responses of the LT members during “Fire on the Horizon” using heuristics, which are mental shortcuts used to simplify decision-making, particularly when comparing an unknown situation to a pre-existing situation. Heuristics also rely partially on assumptions made about unknown situations, regardless of whether or not those assumptions are accurate (Gigerenzer & Gaissmaier, 2011).

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emily Keil</td>
<td>Administration Officer</td>
</tr>
<tr>
<td>Phil Wilson</td>
<td>Chief of Science &amp; Resources Mgmt.</td>
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<tr>
<td>Teagan Tomlin</td>
<td>Executive Assistant</td>
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<td>David Roemer</td>
<td>Superintendent</td>
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<tr>
<td>Pete Webster</td>
<td>Deputy Superintendent</td>
</tr>
<tr>
<td>Elizabeth Maki</td>
<td>Acting Chief of Interpretation</td>
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<tr>
<td>Jim Foster</td>
<td>Chief of Facility Mgmt.</td>
</tr>
<tr>
<td>Ron Faull</td>
<td>Safety &amp; Occupational Health</td>
</tr>
<tr>
<td>Micah Alley</td>
<td>Ranger Operations Coordinator</td>
</tr>
<tr>
<td>(Observer)</td>
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</tbody>
</table>

Attendees wrote their names & titles on a large sticky note. Photo by Jack Cascone.
THE RECOGNITION HEURISTIC

The Leadership Team used the recognition heuristic device when referring to the Continuity of Operations Plan, and determining responsibilities of supervisors. The recognition heuristic is a decision-making framework that places higher value on options or choices that are the most familiar to the decision maker over those that are unfamiliar.

THE SATISFICING HEURISTIC

The Leadership Team used the satisficing heuristic when identifying practices that would be covered during the “Ready” and “Set” stages. The satisficing heuristic is a framework for decision-making that explains that if an option is “good enough,” then it is reasonable to stop searching for a better solution.

THE AVAILABILITY HEURISTIC

The leadership team also used the availability heuristics when relying on hierarchical structures, and determining relocation sites and rally points. The availability heuristic is a decision-making framework in which value is placed on the first choice or option that comes to mind when making a decision.
FINDINGS

FINDING: THERE ARE GAPS IN THE “READY” AND “SET” STAGES

When the Leadership Team was placed in the “Go!” stage of evacuation, it became clear that there were gaps in the communication and understanding of expectations during the “Ready” and “Set” evacuation stages. As noted by Emily Keil, Chief of Administration, the length of these stages is often highly variable, and may be very short, depending on fire behavior and conditions. This gap became particularly clear after we presented the LT with different evacuation complications. One such complication was that of a park researcher who was unable to fit all of their equipment into a vehicle as they were evacuating. In response, members of the Leadership Team explained that research equipment would have been accounted for during the “Ready” and “Set” evacuation stages.

Leadership Team during “Fire on the Horizon”.

Prior to the exercise, Phil Wilson, Chief of Science and Resource Management, expressed the need for more extensive evacuation planning efforts, stating that any additional evacuation accommodations for employees should be determined in the “Ready” stage. These remarks indicate that extensive pre-evacuation planning efforts have not been put into practice in the Park yet.

SATISFICING HEURISTIC

We found that the LT may have used the satisficing heuristic framework in their decision-making during “Fire on the Horizon.” The satisficing heuristic “is a decision making strategy that aims for a satisfactory or adequate result, rather than the optimal solution” (Frankenfield, 2022). In the bounds of the exercise, the “adequate result” was the LT providing solutions to the complications.

This slide was used to present complications during “Fire on the Horizon.”
by stating that certain actions would have already been taken during “Ready” and “Set” stages. However, the LT made these claims without examining what was actually included in planning efforts currently in place in the Park. Using the satisficing heuristic framework, the LT relied on a potentially inaccurate assumption that comprehensive pre-evacuation planning efforts are already in place (P. Wilson, personal communication, September 5, 2023). Satisficing heuristics thus allowed the LT to come up with a quick, seemingly adequate solution to complications during the exercise without further examining the accuracy of these solutions.

Additionally, the Leadership Team expressed concerns about staff complacency during the earlier warning and pre-evacuation stages, even after being prompted to take precautions. One expectation of the “Ready” and “Set” stages is the preparation of emergency go-bags that contain important resources for evacuees, such as a first aid kit, extra clothes, and non-perishable food items (Wilson et al., 2020). Members of the Leadership Team acknowledged that although all employees should have a go-bag prepared in advance of an evacuation order, this may not be the case, indicating that this may also not be an accurate assumption to rely on.

**FINDING: THE LEADERSHIP TEAM DOES NOT HAVE AN ESTABLISHED RALLY POINT**

Key informants and our sponsors also expressed the need to reinforce planning for post-evacuation processes. Emily Keil told us that the Park is required by the National Park Service to have a Continuity of Operations Plan (COOP), but there is no requirement to establish rally points after an evacuation. Rally points refer to locations where employees gather outside of the Park to ensure that all employees have been accounted for. According to Chief of Administration Emily Keil, “a gap exists in the expectation of a rally point.” LT members reaffirmed the lack of established rally points during “Fire on the Horizon,” specifically for employees evacuating from the Headquarters District. The Leadership Team spontaneously decided to use the “Super 1” grocery store in Columbia Falls as a rally point during the exercise. One member of the Leadership Team said this was “the first day that we figured out the Super 1 is our rally point.”

"A GAP EXISTS IN THE EXPECTATION OF A RALLY POINT"
AVAILABILITY HEURISTIC

This decision may have indicated the use of the availability heuristics among the LT. The availability heuristic refers to a decision-making framework that places value on options or choices that come to mind quickly (The Decision Lab). The LT members had previously noted that evacuation rally points were not pre-established. Therefore, the LT may have chosen the “Super 1” as a rally point because it was easy to identify and was the first potential option that came to mind. However, this location was later identified in the after-action review as inadequate, as “Super 1” may not approve of their parking lot space being used as a gathering point for evacuees. Thus, using availability heuristics as a decision-making framework does not always account for the complexities of a given choice, which was evident in the after-action review and debrief.

Drive from GLAC Headquarters to Super 1 Foods.

The Super 1 Foods is a 24 minute drive from the Glacier National Park Headquarters building, which is far enough away from Headquarters to be out of the evacuated region. (Image retrieved from Google Maps).

“Fire on the Horizon” debrief.

LT discuss their thoughts about the “Fire on the Horizon” activity. Photo by William Pagliarulo.
FINDINGS

FINDING:
THE LEADERSHIP TEAM HAS NOT ESTABLISHED RELOCATION SITES

During the exercise, Park Superintendent David Roemer emphasized the importance of establishing relocation sites before an evacuation. He suggested pre-planning with Columbia Falls schools, as they might have ample floor space and outdoor space for evacuees. However, another Leadership Team member noted that student athletes return to school in mid-August, which could prevent the school from being a feasible relocation site during the fall wildfire season. Another suggestion by a member of LT was to utilize the Kalispell airport as a relocation site for employees due to its ample terrain and ability to supply food to employees.

AVAILABILITY HEURISTIC

However, these locations were suggestions, and were not established prior to the exercise, nor were they established in any official documentation. These relocation site suggestions may illustrate the use of availability heuristics, placing value on options or choices that come to mind quickly for decision-makers (The Decision Lab). None of these potential sites were pre-established prior to the exercise, indicating that a considerable factor in selecting the

AFTER-ACTION REVIEW NOTES

Takeaway
pre-planning can help minimize chaos
need to put names to responsibilities

Relo Centers
don’t have anything established
Super 1 might not be a good rally point

Ways to Prep Differently?
mechanism of gathering employee data- microsoft forms?
Staff should know who to contact

To learn from employees:
biggest concern?
what assets do they have that could be helpful?

Highlights of the after-action review notes.
Columbia Falls schools and the airport is that they were quickly identified by the LT. However, because this heuristic device assigns value to choices only on the basis of quick recognition, it may not account for other important factors, such as the feasibility of these choices. When an LT member voiced that students might already be on campus at the Columbia Falls schools, for instance, there was no clear solution to address that concern, indicating a limitation in using availability heuristics for decision making.

**FINDING:**
**THE CONTINUITY OF OPERATIONS PLAN DOES NOT ASSIGN SPECIFIC RESPONSIBILITIES TO SUPERVISORS**

During “Fire on the Horizon,” some members of the Leadership Team frequently referred to the Continuity of Operations Plan (COOP) when discussing the appropriate course of action to evacuate the HQ district. One LT member noted that the COOP would give the staff a structure for the execution of evacuation procedures. While the COOP document is designed to assist the Leadership Team in understanding how the park could continue to function in an emergency scenario, this document did not account for every aspect of an evacuation. For example, the COOP did not provide specific information to the LT on who would be assigned to go door-to-door to alert residents of an evacuation order. The COOP also did not address questions of relocation after an evacuation, or how to provide resources to park staff who have been evacuated. While the COOP is a useful document to refer to during an evacuation, it does not provide an all-inclusive evacuation plan.

**Points addressed in the after-action discussion.**

*Notes on the “Fire on the Horizon” discussion, vocalized by the Leadership Team, written by Lauren McAdams. Photo by Lauren McAdams.*

**View of Logan Pass from Going-to-the-Sun-Road. Photo by Jack Cascone.**
RECOGNITION HEURISTIC

We observed that some members of LT may have used a recognition heuristic framework when referring to the COOP document. The LT may have placed a higher value on this document because it was easily recognized, regardless of the content it contained. Likewise, the LT may have initially assumed that the COOP document had solutions to post-evacuation complications without further examining its contents because of its familiarity. The COOP did not present all of the answers it was believed to, but this was only apparent after attempting to answer specific questions, such as determining who would be responsible for alerting Glacier National Park residents of evacuation orders.

Documents and maps provided to the Leadership Team during “Fire on the Horizon.” Photo by Jack Cascone.

Review of the Headquarters District evacuation plan.

Pete Webster, Deputy Superintendent, referring to park evacuation plans during “Fire on the Horizon.” Photo by Leslie Dodson.

FINDINGS:
CURRENT CHECKLISTS MAY NOT BE COMPREHENSIVE OR EASY TO ACCESS

During “Fire on the Horizon,” the Leadership Team relied on supervisors having access to physical checklists of their employees’ names and contact information. Supervisors utilize employee checklists to determine that all of their staff members have been accounted for in an emergency. In the event that a supervisor is away or needed for other evacuation or firefighting responsibilities, a different staff member would need to account for that supervisor’s employees. A Leadership Team member noted that in this case, other staff members could view these employee checklists through a shared online folder. However, multiple members of the Leadership Team were unsure if this drive was currently working or who had access to it, and they did not believe that interns and seasonal employees were included in this list. This uncertainty furthered the reliance on supervisors having access to a physical employee contact list before an emergency occurs. This indicates reliance on an assumption that online supervisor checklists exist and are functional.

Furthermore, Emily Keil, Chief of Administration, noted that employee contacts in pre-existing documents may not be updated regularly. She claimed that there were “a lot of old names in documents,” indicating that there are people listed in documentation who are no longer working for the Park or assigned to the roles specified in the documents. Additionally, many members of park staff are not listed in these documents, including interns and volunteers, implying that the pre-existing employee lists are not completely up to date or inclusive.
FINDINGS

FINDING: PARK LEADERSHIP RELIES ON HIERARCHICAL STRUCTURES

During “Fire on the Horizon,” Park Superintendent David Roemer emphasized the need for a “a delegation of authority” to manage the evacuation. This would include deciding which park staff members were responsible for the various aspects of an incident command structure, or the hierarchical structure of park personnel responsible for handling an incident. When assigning a team member to lead the incident command structure, the Leadership Team turned to Micah Alley, Ranger Operations Coordinator, for guidance as a potential incident commander rather than delegating specific authority to members of the Leadership Team.

“"I WOULD HOPE THAT EACH OF MY EMPLOYEES [WHO ARE SUPERVISORS] KNOW AT ANY GIVEN POINT WHO THEY ARE RESPONSIBLE FOR”

RECOGNITION HEURISTIC

Turning to Micah Alley may have been an example of the LT using the recognition heuristic device to assign some responsibilities during evacuation procedures. The LT decided to initially designate Micah Alley as incident commander because he was a readily available, familiar staff member who had the necessary operational skill set to take on this role. However, LT did not consider that his additional responsibilities during an evacuation might impede him from executing this role successfully.

FINDING: SUPERVISORS MAY NOT BE PREPARED FOR ADDITIONAL RESPONSIBILITY DURING EVACUATIONS

Park leadership also delegated a large amount of responsibility to supervisors. Team members repeatedly emphasized the responsibility of supervisors in accounting for their employees during an evacuation, summed up by one member of LT who said “we need to rely heavily on supervisors.” Chief of Science and Resource Management Phil Wilson said “supervisors should be responsible” for accounting for all of their employees. Another participant stated,
“I would hope that each of my employees [who are supervisors] know at any given point who they are responsible for.” Supervisor responsibilities include checking in with employees immediately after an evacuation and appointing an “active” staff member to assume this role before taking vacations or leaves of absence.

However, some members of the LT felt unsure of whether supervisors were prepared for and aware of their responsibility to account for their employees. Emily Keil referenced the 2021 Hay Creek Fire, where she felt there was a lack of communication among park leadership and employees during the evacuation. To prevent this from happening again, she suggested that “It would be nice to have this broad expectation communicated to our staff”

**RECOGNITION HEURISTIC**

The statements and concerns about supervisor responsibilities may indicate that the Leadership Team used a recognition heuristic decision-making framework. This framework placed much responsibility on supervisors, as the LT assigned critical evacuation roles and responsibilities to them during the exercise. Supervisors are already designated many daily responsibilities, making them a familiar choice for the LT to designate further responsibilities in potential evacuations. However, designating responsibility in this way relies on the assumption that supervisors are aware, ready, and available to take on additional evacuation duties placed on them, even when presented with complications that may make it difficult to fulfill them. Many members of the Leadership Team indicated that they did not feel that this was the case, indicating a limitation in using recognition heuristics to assign further evacuation roles and duties to supervisors.

**FINDING:**
**THERE ARE CONCERNS ABOUT A LOSS OF COMMUNICATION DURING AN EVACUATION**

Kristen Friesen, a budget technician at Glacier National Park, expressed heightened concern regarding wildfires in the park, particularly that many complications that could arise in an emergency, such as a loss of internet or radio connection (K. Friesen, personal communication, August 30, 2023). Ranger Operations Coordinator Micah Alley (personal communication, September 12, 2023), echoed this concern, emphasizing that “loss of comms is a very, very real thing for us.” He further explained that park employee radio communications frequently go down in the park, and that power might go out during fires or emergencies involving high winds.

“LOSS OF COMMS IS A VERY, VERY REAL THING FOR US”

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FINDINGS

To determine how emergency decision-makers in the LT would respond to this concern, we introduced a communications failure complication during “Fire on the Horizon,” with a power outage and no cell service in HQ as a result of a lightning strike to the Desert Mountain cell tower. The LT agreed that loss of communications in a fire is a very real possibility. However, one LT member noted that evacuation expectations and routes should be communicated to park staff during the “Set” stage, and thus loss of communications would not impede evacuation notification. Other LT members stressed the importance of checking employees off a physical list as they leave the park.

SATISFICING HEURISTIC

From our observations, these responses may indicate that the LT used a satisficing heuristic when presented with a loss of communications scenario, as they assumed that park leadership and supervisors would be able to adequately communicate evacuation information and account for employees under these circumstances. Using the satisficing heuristic framework, the LT came up with what they had considered to be a sufficient solution, without further examining whether or not this assumption was accurate.

Our semi-structured interviews indicated that there is no established back up plan to continue communication in the case of a power outage or a loss of radio connection, indicating that satisficing heuristics did not account for the lack of back-up communications (M. Alley, personal communication, September 12, 2023).

EVALUATING THE INTERACTIVE ACTIVITIES USING THE ABCD FRAMEWORK

We facilitated Resource Bingo and Emergency Bingo games, and provided written prompts for staff to respond to during the staff potluck meal on September 27, 2023 in the Glacier National Park Community Building. Our team used the ABCD framework to analyze participant responses. The ABCD framework encourages the use of resources internal to a community before looking towards external resources (Nurture Development, 2016).

We evaluated our Resource Bingo game and our written prompts that asked “what resources would be helpful to you during and after a fire evacuation?” and “what assets do you have that can be used in an evacuation or relocation?” using the ABCD framework. Our questions prompted participants to consider how the supplies they have at their disposal can be repurposed to provide for themselves during and after an evacuation.
FINDINGS

FINDING: PARK STAFF HAVE POST-EVACUATION RESOURCES ON HAND

At the staff potluck meal, we aimed to identify which post-evacuation resources park staff members already owned that could be utilized in an evacuation context. We developed a Resource Bingo sheet that listed a variety of items that could be useful for evacuation relocation, including sleeping bags, tents, and first aid kits. Of the 12 Resource Bingo participants, all 12 listed that they owned a first aid kit, 11 participants listed that they owned a tent, and 10 listed that they owned a sleeping bag. At least one participant owned each item listed on the bingo card.

Using the ABCD framework allowed us to reframe the supplies and skills staff members already had as helpful assets in a relocation context. We probed for potential post-evacuation resources by presenting a written prompt that asked what assets staff had that could be used for a relocation. We clarified in our prompt that assets could be skills, physical resources, or property. In response, four respondents listed owning camping gear, and one respondent listed owning a trailer. However, we found that the assets belonging to park staff went deeper than purely physical assets, as three respondents listed Wilderness First Responder training, another three listed first aid training, and one respondent listed EMT training and CPR training. The results of these prompts revealed that park staff already have many of the resources needed for an evacuation on hand. These skills and supplies can thus be put to use in an emergency situation in addition to looking to external sources for resources.

THE “GOODWILL GARAGE”

Erin Madsen, Housing Manager, and Matt Applegate, Housing Assistant, also identified some internal park resources that could be useful in a post-evacuation process. Matt Applegate (personal communication, September 27, 2023) mentioned that some residents own RVs, and others have trucks with beds in the back, both of which could be used for temporary shelter during an evacuation. Additionally, Erin Madsen mentioned that the park has a supply
warehouse with extra furniture and beds, as well as a goodwill garage in park HQ with excess materials left from prior employees. Some of the supplies in this garage are linens, dishes, cleaning supplies, trash cans, bikes, and kitchen appliances such as pots, pans, and silverware. This garage is open to all park employees to take supplies as they need them. In an evacuation, the Housing Manager confirmed that these supplies could be used to aid evacuated employees. In this way, the Park already has an internal store of supplies and materials that can be accessed by the greater community of employees and their families to help them through the relocation process. However, there is currently no established protocol for delivering these supplies to evacuees.

**Finding:**
**Flathead County Community Organizations and Businesses Provide Evacuation Resources**

Juanita Nelson, Flathead County Emergency Management Planner stated that local grocery stores also offer food and resources after an evacuation. This indicates that the Park can also look to members of the larger community to acquire resources for after an evacuation. For example, The Office of Emergency Services (OES) has worked with the Nite Owl Restaurant in Columbia Falls to provide food resources.
for evacuees. For large-scale evacuations, the Flathead County OES also works with the Salvation Army to provide food for evacuees (J. Nelson, personal communication, September 29, 2023).

From our semi-structured interviews, our “Fire on the Horizon” tabletop exercise and our staff potluck meal activities, we collected data about the various assets that Glacier National Park can access. We repopulated the ABCD Assets table from our background with examples of the assets that we learned about during our fieldwork in the Park.

**EVALUATING THE INTERACTIVE ACTIVITIES USING APPRECIATIVE INQUIRY**

We also evaluated participant responses from our Emergency Bingo game using appreciative inquiry, which is an aspect of ABCD involving reviewing a community’s past experiences in order to learn from them and create positive changes (Foster and Mathie, 2001). Rather than focusing on what went wrong when discussing past experiences, this method focuses on how these experiences can be improved in the future (Alevizou et al., 2016). We applied this framework to investigate how the fire evacuation and relocation experience could be improved for employees.

During the staff potluck meal, we asked participants to fill out an Emergency Bingo card about challenges in past evacuation experiences.

<table>
<thead>
<tr>
<th>Assets</th>
<th>Glacier National Park’s Evacuation Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skills and Knowledge Based</td>
<td>CPR, EMT, Wilderness First Responder (WFR)</td>
</tr>
<tr>
<td>Institutions</td>
<td>Office of Emergency Services, The Red Cross</td>
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<tr>
<td>Location-Based</td>
<td>Employees with property outside of the park willing to take in evacuees</td>
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<tr>
<td>Connections</td>
<td>Nite Owl Restaurant</td>
</tr>
<tr>
<td>Physical Assets</td>
<td>Camping equipment, RVs, survival gear, Supplies in the goodwill garage</td>
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</table>

We also consulted Juanita Nelson, Flathead County Emergency Planner, to gain information about her experience in providing for Park evacuees in the past. Collecting these responses allowed us to learn about the difficulties of past evacuations, as well as how employees feel that evacuation plans could be improved.

**Emergency Bingo participant.**

**Park staff member filling out an Emergency Bingo card. Photo by William Pagliarulo.**
FINDINGS

Our team table-sitting at the staff potluck meal.

Potluck attendee playing Resource Bingo. Photo by Jack Cascone.

FINDING:
EMPLOYEES ARE UNSURE OF EVACUATION RALLY POINT LOCATION

We gathered 15 total responses to these questions, with seven listing that they were not sure where to go after an evacuation. Another prompt asked employees “what resources would be helpful to you during and after an evacuation?” One particularly notable response listed that clear communication on what to do and where to go in an evacuation ahead of time would be helpful. Another response explained that it would be useful to have a list of places that staff would be evacuated to.

Park staff writing out their fire-evacuation concerns.

Prompt reads “What are your concerns regarding fire evacuation?”. Photo by William Pagliarulo.

We created an “Emergency Bingo” activity for the staff potluck meal in order to learn more about the experiences of staff during past evacuations. The bingo cards contained sets of evacuation concerns, and we directed staff to circle those that they had experienced. Emergency Bingo had 12 participants, whose jobs ranged from wildlife technicians to sign painters. Of this group, eight circled that they had “been unsure of where [their] ‘rally point’ is.” Half of the participants also said they “felt unsure of where to go after an evacuation.” We also provided a series of written prompts for park employees, asking about their concerns regarding fire evacuations.

Using appreciative inquiry, our prompts gave employees a space to share their experiences and opinions regarding fire evacuation and relocation. These responses helped us gain a better understanding of the past experiences of employees. We observed a general confusion among park staff regarding post-evacuation rally points, as well as indicating that staff would like more communication from leadership regarding what to do after an evacuation.
FINDINGS

FINDING: HEADQUARTERS EMPLOYEES CAN USE SHELTERS ESTABLISHED BY THE RED CROSS IN AN EVACUATION

Juanita Nelson, Flathead County Emergency Management Planner, provided information on Flathead County post-evacuation relocation sites, rally points and resources. Ms. Nelson is “responsible for the planning, coordination, and implementation of all emergency management and Homeland Security-related activities for Flathead County, MT” (Flathead County, Montana, 2023). She stated that it is not Glacier National Park’s responsibility to establish temporary shelters for employees, because these would be provided by The Red Cross. According to Ms. Nelson, Red Cross temporary shelters are available for use within two to six hours after they are established, and are available to all evacuees, including federal park employees. The Emergency Management Planner also informed us that in her 14 years of experience working for the Office of Emergency Services, a temporary shelter has only been used by evacuees once (J. Nelson, personal communication, September 29, 2023). Ms. Nelson stated that this was likely due to evacuees preferring to stay with family and friends when evacuated. However, these evacuation shelters may be helpful in housing seasonal employees who do not have connections in the surrounding community.

FINDING: RESIDENTS DO NOT RECEIVE EVACUATION INSTRUCTIONS DURING ONBOARDING

Erin Madsen, Glacier National Park’s Housing Manager, and Matt Applegate, Housing Assistant, reflected that residents living in Glacier National Park housing do not receive comprehensive evacuation information or training as a part of onboarding or move-in processes. The primary evacuation information provided to residents is the Occupant Emergency Plan which provides general information about what to do during a variety of emergencies, including active shooter threats, earthquakes, explosion evacuation, structural and wildland fires, flooding, gas leaks, and medical emergencies. This document explains that evacuation routes will be clearly communicated during an emergency, and further details of evacuation plans would depend on the nature of the incident. The Occupant Emergency Plan also lists a variety of “safety zones” that would be available for residents and employees, if an evacuation out of the park is not possible. For the Headquarters District, the HQ winter parking lot is the safety zone.
FINDINGS

However, this document only provides an overview of evacuation plans and does not include any information about evacuation preparation, regarding what to take or where to go outside of the Park after an evacuation (US DOI National Park Service, 2022).

**FINDINGS IN SUMMARY**

Our research involved the facilitation of a variety of activities in order to learn from stakeholders who work and live in Glacier National Park. Through the use of heuristics, we were able to determine where the leadership team relied on mental shortcuts to address evacuation and relocation complications. This helped us to determine places where there may be room for future work. We used the ABCD framework to analyze the responses of park staff from our potluck activities. This helped us determine the post-evacuation resources that park staff have on hand. We also made use of appreciative inquiry to determine how the past evacuation experiences of park staff could be improved in the future. These frameworks helped us to organize our findings and produce helpful material for the park.

The Occupant Emergency Plan provides a general overview of the actions to take in various emergency situations (US DOI National Park Service, 2022).

Lake McDonald at Apgar Village. Photo by Jack Cascone.
LIMITATIONS OF OUR RESEARCH

The Glacier National Park personnel who participated in our interviews, focus groups, and evacuation exercises were aware that we were recording notes and direct quotes, which may have influenced their responses. This is especially true for the Leadership Team in the “Fire on the Horizon” activity, as this group holds much authority in Glacier National Park.

During “Fire on the Horizon,” we were also limited by the lack of representation of some leadership team members, where eight out of the 12 members of the Leadership Team participated in the activity. The job titles of the four members of the Leadership Team not in attendance included the Chief Ranger, Chief of Concessions, Public Information Officer, and a Leadership Team Intern. For complications arising in the scenario, it is possible that one of the absent members had expertise on the issue and could have provided valuable insight to the rest of the Leadership Team.

During the activities hosted at the staff potluck meal, we were limited by a small sample size. Although there were staff members from many different park divisions at the potluck, more responses would likely lead to more diverse answer responses.

Our team only printed out 12 copies of both of our bingo games, limiting our ability to acquire more data. For the prompts about what skills or assets individuals have, individuals who were not at the potluck or who did not participate in the activities were not represented in our data.
FINDINGS

RESOURCES TO HELP THE PARK FACILITATE FUTURE PRE-AND-POST EVACUATION TRAINING.

Our project aimed to assist Glacier National Park’s efforts to care for staff during and after a fire evacuation of the Headquarters District. We created two facilitator’s manuals to provide Glacier National Park personnel with frameworks for future staff training. The Incident Action Plan and Supervisor Checklists provide outlines for park leadership and supervisors to plan for evacuation and relocation efforts. These resources serve to facilitate further work around fire evacuation and relocation for Glacier National Park staff and residents.

EMPLOYEE RELOCATION PREPAREDNESS CHECKLIST

We developed a supervisor pre-evacuation checklist, which provides a place for supervisors to list their employees’ relocation plans and to account for any additional needs of employees during park relocation efforts.


“READY, SET, GO!” INFOGRAPHIC

We provided the Park with an infographic detailing the evacuation process and the Park’s “Ready, Set, Go!” framework. This document addresses misconceptions that park staff may have regarding when each stage occurs and what each stage entails.
ADAPTABLE FACILITATOR’S MANUALS FOR TABLETOP EXERCISES AND INFORMATION GATHERING ACTIVITIES

We developed facilitator’s manuals for running a tabletop exercise and evacuation-themed information gathering activities. These manuals are designed to be adaptive, so their contents can be applied for a variety of purposes. The tabletop manual also comes with a sample Powerpoint slide deck.

TEMPLATE INCIDENT ACTION PLAN (IAP)

We developed an Incident Action Plan (IAP) template for the Park’s leadership to use before and during an evacuation event. This document, modeled on guidance in the FEMA Incident Action Planning Guide (2012), is intended to help leadership organize critical information and develop a course of action in an incident. The IAP template includes space to outline incident objectives, as well as work assignments, resource allocation, and contact lists.
Recommendations
RECOMMENDATIONS

Based on our findings, we made a number of recommendations to help clarify the responsibilities and actions to be taken by staff members during and after an evacuation. Additionally, we recommend establishing resources for supervisors and park leadership to better prepare for an evacuation and relocation of park staff.

RECOMMENDATION 1: ESTABLISH EVACUATION RALLY POINTS

Establishing a single, reliable rally point outside of Glacier National Park where employees would meet after they evacuate the Park, would likely lessen staff confusion about where to go after an evacuation. It is important that this rally point can be used with little notice and can hold a large number of employees. Our main recommendation is for the Park to contact the Superintendent’s office in School District VI about using the schools in Columbia Falls as a rally point. The Flathead County Emergency Management Planner, Juanita Nelson, informed us that the District Superintendent’s office has worked cooperatively in the past with the office of emergency services, and would likely be supportive of the park’s needs during an emergency.

Evacuees “chowline.”


RECOMMENDATION 2: MAKE USE OF THE GOODWILL GARAGE DURING EVACUATIONS

Additionally, we learned from Erin Madsen that the park has a supply warehouse with extra furniture and beds, as well as a “goodwill garage” in park HQ with excess materials left from prior employees. Some of the supplies and materials in this garage may help to get evacuees through the relocation process. In order to establish a larger collection of post-evacuation supplies, we recommend that the park encourage employees to donate to this garage. We also recommend that a semi-regular inventory be taken so the park has a general idea of the supplies they have on hand. The park may then benefit from establishing a plan to deliver the resources in this garage to relocated evacuees.
RECOMMENDATION 3: DEVELOP AN INITIATIVE TO DISCOVER ASSETS TO USE IN AN EVACUATION

We recommend that Glacier National Park leadership develop an initiative to discover assets belonging to park staff that can be utilized in an emergency. We suggest that this list includes the resources, including skills, items, or ideas that can be used to benefit or assist the park, that park staff have on hand and are willing to lend to their neighbors and coworkers. This will inform leadership of what resources are available to evacuees as a whole and will help inform how to distribute them most effectively. Below are some possible assets that we have discovered that might be of use.

1. Camping equipment and survival gear
2. RVs or other mobile homes
3. Property outside of the park
4. Skills and certifications

Assets belonging to park employees.
RECOMMENDATIONS

RECOMMENDATION 4: EXPAND STAFF EVACUATION EDUCATION AND TRAINING

Our key informant interviews and “Fire on the Horizon” activity revealed a lack of clarity for headquarters staff regarding the expectations of the “Ready” and “Set” evacuation stages. We recommend fire evacuation education for staff members to distinguish between these stages and adequately prepare for evacuations. This can be done during division meetings for HQ staff and residents, as well as during LT meetings. These can also be done during staff potlucks or brown-bag lunches, where less-structured events such as the emergency and Resource Bingo games may be more fitting. We suggest that these meetings include the actions that full time park employees, seasonal workers, park supervisors, and leadership team members should take during the “Ready” and “Set” stages to be prepared for evacuation. Meetings and training exercises can also communicate any pre-established evacuation routes and rally points. These events would serve to clearly define expectations for evacuation preparation in advance of an emergency scenario. We recommend that employees also be provided with digital, virtual, or in-person spaces to voice evacuation concerns, ensuring that such concerns are accounted for in evacuation planning.

RECOMMENDATION 5: DEVELOP A TALENT ROSTER FOR EVACUATIONS

In order to clarify the roles and responsibilities of Park employees in an evacuation, our team recommends the development of a living “talent roster” that lists employees with specific skill sets who might be able to fill various roles in an evacuation. We suggest that this roster also includes multiple levels of redundancy, such as back-up employees to fill each role in the case that the primary employee is unavailable. We also suggest that this list be updated on a regular basis in order to maintain its relevance.

RECOMMENDATION 6: ESTABLISH EVACUATION DOCUMENTATION IN RESIDENCES

From our consultations with Housing Manager, Erin Madsen and Housing Assistant, Matt Applegate, we learned that the only documentation supplied to residents with their residencies is the Occupant Emergency Plan. Our understanding is that no educational material on evacuations is currently supplied as a part of the onboarding process. While the Occupant Emergency Plan provides information about what to do regarding a structural fire, it does not provide comprehensive insight into what to do in a wildfire evacuation. Our team therefore recommends that additional documentation be given to residents about actions to take during an emergency, specifically what types of information they need to be aware of in the “Go” stage. We suggest that this document includes a checklist of items to take with them, information about housing after an evacuation (to alleviate concerns about not having housing) and the difference between all of the stages of evacuations as well as actions needed to be taken during each of them.
FUTURE WORK

We came across many considerations relevant to fire evacuation in Glacier National Park that were either outside the scope of our project or could not be addressed in the time we had in the park. Below we list some possible items for future work on fire evacuations in the park.


ADDITIONAL CONSIDERATIONS

FURTHER PLANNING FOR EVACUATION AND RELOCATION FOR EMPLOYEES WHO WORK AND LIVE OUTSIDE OF THE HEADQUARTERS DISTRICT.

ESTABLISHMENT OF AN ANNUAL REVISION OF FIRE EVACUATION AND RELOCATION PROCEDURES EACH SPRING. THE SPRING HIRING AND ONBOARDING TIME COULD BE USED TO EDUCATE NEW AND CONTINUING PARK STAFF ON FIRE EVACUATION PROTOCOLS, AS WELL AS TO UPDATE THE TALENT ROSTER DETAILED IN RECOMMENDATION 4.
FUTURE WORK

ADDITIONAL CONSIDERATIONS

FURTHER PLANNING FOR EVACUATIONS THAT ARE NOT CAUSED BY FIRE. THIS COULD INCLUDE EVACUATIONS DUE TO CHEMICAL SPILLS, FLOODS, AND OTHER DISASTERS THAT MIGHT BE RELEVANT TO GLACIER NATIONAL PARK.

PROVIDE TRAINING FOR RESIDENTS LIVING IN THE PARK ON EVACUATION PROCEDURES SO THEY ARE BETTER INFORMED OF WHAT TO DO AND WHERE TO GO BEFORE, DURING, AND AFTER AN EVACUATION. THIS COULD INCLUDE ESTABLISHING MORE DETAILED CHECKLISTS ABOUT WHAT TO TAKE IN A POSSIBLE LONG-TERM EVACUATION. THESE CHECKLISTS CAN INCLUDE ASSETS DETAILED IN RECOMMENDATION 2.

ESTABLISH A PLAN TO ACCOUNT FOR PEOPLE WITH VARYING NEEDS DURING AN EVACUATION. THIS INCLUDES ACCOMMODATING THOSE WITH MOBILITY DISABILITIES, AS WELL AS ACCOUNTING FOR RESIDENTS WHO HAVE SENSORY DISABILITIES THAT COULD IMPACT THEIR ABILITY TO RECEIVE EVACUATION WARNINGS. THIS ALSO INCLUDES PROVIDING POST-EVACUATION RESOURCES FOR PEOPLE WITH VARYING EVACUATION NEEDS, SUCH AS PEOPLE WITH CHRONIC CONDITIONS, FAMILIES WITH YOUNG CHILDREN AND INFANTS, AND PEOPLE WITH FOOD ALLERGIES.
ETHICAL CONSIDERATIONS
ETHICAL CONSIDERATIONS

Given the nature of our project, direct quotes and interview responses were crucial to our understanding of evacuation concerns and assumptions of different stakeholder groups in the park. In order to make use of the responses we received, we asked for informed consent to record interview responses and take direct quotes before conducting interviews. This was a particularly important consideration for high-ranking park personnel during “Fire on the Horizon,” as direct quotes were significant in developing our findings from this event. Before conducting evacuation exercises and table-sitting activities, we explained that we intended to include direct quotes in our writing, and personnel were able to opt out of being quoted in the final report. Additionally, we received consent for photographs included in this report. Wildland fire evacuation is also an emotionally taxing process that some park staff may find difficult to talk about. As such, when interviewing park personnel about evacuation, we took precautions to be sensitive about potentially traumatic experiences. We avoided phraseology in questions about past evacuation experiences that could make interviewees feel uncomfortable, and we aimed to be as empathetic as possible. The majority of our questions and activities relating to past evacuations focused on community assets and evacuation resources.
The
Aftermath
Conclusion

CONCLUSION

Wildfire evacuations are a complex, multifaceted event requiring collaborative decision-making and communication between affected people. We aimed to shed light on gaps in current evacuation procedures at Glacier National Park that might delay evacuation preparation and considerations. Our research involved analyzing the Leadership Team’s evacuation decision-making processes and gathering responses from various stakeholder groups in the Park regarding evacuation concerns, the resources they have on hand, and ways in which communication could be improved during the evacuation process.

SUMMARY OF FINDINGS

We analyzed the decision-making processes of the Leadership Team, which is responsible for implementing Glacier National Park’s evacuation procedures. Areas of the evacuation plan that require further consideration primarily center around pre-evacuation procedures. We found a gap in the communication and understanding of expectations during the “Ready” and “Set” evacuation stages. Despite the variability in the timeframe for an evacuation, park employees rely heavily on these evacuation stages. Additionally, precautionary actions may not be taken due to staff complacency.

We also found that park staff are not provided with comprehensive details on wildfire evacuation at their residences. Additionally, park staff members expressed concerns about the thoroughness of evacuation preparedness, specifically regarding complications such as loss of communications and internet due to power outages.

Rally points are essential to ensure that all employees are accounted for. However, there is not yet an established rally point for Glacier National Park staff. This is a concern for employees who live and work in the park, as they are not informed of where to go after an evacuation until shortly before they have to evacuate. This point was reiterated during the activities we presented at the staff potluck event.

The Howe Ridge Fire seen from across Lake McDonald. Photo by GlacierNPS, 2018.
CONCLUSION

The Leadership Team’s primary focus is the immediate safety of employees and residents. Although the Leadership Team has put a significant amount of thought into relocation sites and has emphasized their importance, relocation sites have not been established for the Park.

We also found that it is not the Park’s responsibility to establish relocation sites. The Office of Emergency Services for Flathead County works with the Red Cross to designate emergency shelters for evacuees. These shelters would be chosen to be large enough and available to accommodate Park employees.

Our team aimed to understand the assets available to the park to aid evacuees during and after evacuation processes. Through our interviews and activities, we were able to identify a number of resources that park staff had on hand. These included first aid kits, camping gear such as tents or sleeping bags, as well as resources that could provide shelter to evacuees such as RVs, which is perhaps not surprising given that Glacier National Park staff members are often experienced hikers and campers. Additionally, our team asked for any skill sets that employees have that could be useful in an evacuation. Many responses indicated having training that would be useful such as Wilderness First Responder, first aid, CPR, and EMT training.
CONCLUSION

We also found that further resources would be provided by community organizations after an evacuation. The Office of Emergency Services (OES) has worked with the Nite Owl Restaurant in Columbia Falls to provide food for evacuees. For large-scale evacuations, the Flathead County OES also works with the Salvation Army to provide food for evacuees.

We found that the Continuity of Operations Plan (COOP) was useful to park staff for certain evacuation procedures, but it did not provide insight on assigning evacuation roles and responsibilities or provide information regarding where to go and how to get resources after an evacuation. Our team also found that while supervisor checklists are a good resource to account for employees, they may be incomplete, specifically regarding seasonal employees or interns. Additionally there may be problems accessing these checklists if the supervisor responsible for them was not on-site at the time of an evacuation.

We were honored to work with Glacier National Park’s Leadership Team and other park personnel to enhance their evacuation protocols and ameliorate difficulties that could arise during an evacuation, continuing to care for its employees.


REFERENCES


REFERENCES


APPENDIX A: CHECKLISTS

“Ready, Set, Go!” Checklists

Ready stage checklist

_____ Go-bags/kits are stocked and ready to go at a moment’s notice
_____ Evacuation plans for pets have been established and practiced
_____ Pet supplies are packed
_____ Portable radios and scanners, cell phones, and other communication devices are charged and ready to go
_____ Multiple escape routes have been identified
_____ Fire extinguishers are easily located and you know how to use them
_____ Preparations have been made to quickly and safely remove NPS-issued laptops and cell phones
_____ Preparations have been made and clearly discussed with supervisors and/or program leads regarding the removal of any valuable material assets
_____ Vehicles have enough gas
_____ Keep a sturdy pair of shoes and a flashlight near your bed in case of a sudden evacuation at night

Set stage checklist

_____ Review the Ready stage checklist
_____ Go-bags are stocked and ready to go (include pet supplies if applicable)
_____ Review the emergency supply kit checklist and ensure items are stocked
_____ Sign up for Send Word Now Alerts with Dispatch if you haven’t already done so
_____ Pack and have ready to go other items, such as photos, valuables, etc.
_____ Identify the current locations of valuable material assets

Go! stage checklist

- Review evacuation plan checklist
- Ensure emergency supply kit is in your vehicle
- Double check the 5 Ps:
  - People and pets
  - Papers (important documents)
  - Prescriptions
  - Pictures
  - Personal computer/tablet/cellphone (and hard drives, chargers accessories)
- Cover up to protect against heat and flying embers. Wear long pants, long-sleeve shirt, heavy shoes/boots, and cap, dry bandana for face over, goggles or glasses. 100% cotton is preferable. (Wear required PPE)
- Ensure communication devices (radio, cell phone, satellite phone, etc.) is in hand
- Check oven, faucets, irons, etc. and turn off or unplug equipment as necessary
- Shut and lock all doors and windows. Close all blinds
- Set thermostat for current seasonal conditions
- Conduct a final walkthrough to make sure nothing is overlooked

**Employee Go-Bag Checklist**

(US DOI National Park Service, 2021)

Go-Bag/Emergency Supply Kit Checklist

- Non-perishable food
- Water
- Prescriptions or special medications
- Change of clothing
- Extra eyeglasses or contact lenses
- An extra set of car keys, credit cards, cash
- First aid kit
- Headlamp and/or flashlight
- Battery-powered radio and extra batteries
- Sanitation supplies
- Copies of important documents (birth certificates, passports, etc.)
- Pet food and water
- Cell phones and other communication devices
- Cell phone chargers
Pre-Evacuation Checklists for Park Employees

CHECK: Does your supervisor have your contact information?

CHECK: Does your supervisor know if you and any family members live in the park?

CHECK: Do you have a go-bag ready for immediate evacuation?

Pre-Evacuation Checklists for Park Supervisors

✓ Do your employee and volunteer staff have all of your contact information, personal and government?
✓ Do you have all of your employees and volunteers emails, cell phone numbers (personal and government). Have you taken it home with you? Does your next in line Supervisor also have this information and know what to do in the event that you are out of the park or otherwise not available?
✓ Do you know which of your employees and volunteers and or their families live in park housing?
✓ Do you know which of your employees and volunteers don’t have vehicles.
✓ Determine which of your staff have room to house displaced employees. Also determine which of your staff need housing in the event of an evacuation.
✓ Do your employees and volunteers have a go-bag ready for immediate evacuation?
✓ Do your employees and program leads know who is assigned to remove valuable material assets and do they have the resources they need to accomplish this?
✓ Have you completed the first portion of the Employee Accountability Spreadsheet and is it ready to track all of your staff if and when they are reassigned?
✓ Do you have your government laptop and phone in order to be in touch with your employees both by government email and by personal email?
Semi-structured Interview
Tara Carolin, Director of the Crown of the Continent Research Center (CCRC)

- In order to gain a better understanding of the fire history at Glacier National Park, could you walk us through some of the major fires you’ve experienced in your time here?
- Could you walk us through what happened during the 2003 Fires?
- We’ve been told about the “Everbridge” notification platform.
- Could you explain who has access to these notifications?
- Which ones? Ex: Do some people have access to fire spread notifications and others only have access to road blockage info, etc?
- How do you feel about the functionality of the system?
- What is your understanding of the siren system in the HQ compound?
- What response would you have if it went off?
Key Informant Interview: 9/27/2023
Erin Madsen, Housing Manager
Matt Applegate, Housing Assistant

- What is your role in the park? What are your responsibilities in an evacuation?
- What is your responsibility to residents in an evacuation?
- Are you responsible for accounting for all residents in park housing?
- What would some of your concerns be when evacuating residents?
- Do you know of any general concerns that residents tend to have regarding evacuations?
- Do you know of any resources in residential buildings that you might have on hand that could aid people after an evacuation? (would you guys have bedding or stuff like that)
- Roughly how many people living in park housing are interns, volunteers, and researchers?
- How many seasonal employees live in the park during the summer months?
- Have you experienced any previous evacuations that resulted in residents being evacuated for an extended period of time (doesn’t have to be HQ)? Where did these residents go for temporary relocation?
- Were there any complications regarding relocation for park residents?
- Were there any assets that residents had on hand that proved useful in an evacuation?
- What information are residentes given during different stages of an evacuation? (Before when they move in, ready, set, go)
- What are residents told they need to bring with them when evacuating?
- What steps are taken to provide for residents when they can’t come back due to severe property damage?
- After an evacuation, how are residents informed when they can come back?
Key Informant Interview: 9/28/2023  
Juanita Nelson, Flathead County Emergency Management Planner  
- Have you ever had any experience with housing people in the county after an evacuation of the park?  
- If so, what places have you utilized in the past for this kind of thing?  
- What aspects of these locations made them suitable for temporary housing?  
- What resources did they provide?  
- What resources were they lacking?  
- What was the logistical process of establishing these locations as temporary housing like?  
- Were there any legal considerations?  
- Do you know of any sites that would be receptive to taking in employees if an evacuation of Headquarters happens?  
- Some places we have considered are the airport in Kalispell due to its extensive terrain, and schools in Columbia Falls and Hungry Horse. Would these be viable options?  
- Would these have accessibility for people with disabilities?  
- If these places don’t have things such as showers and laundry are there alternative locations that these people can use for these necessities? (we are looking to find areas to house about 200 people - 175 employees and families)  
- What places would be receptive to having their parking lots be utilized as rally points for the park staff to meet up at post-evacuation?  
- Are these places that people can go to for an extended period of time (again who could we contact, establish a phone number or email)?  
- Do you think the receptive-ness would change if the temporary housing was necessary for multiple days?  
- Do you have any recommendations for how the park should go about making these relationships with potential relocation sites in the future?
### Fire Monitoring Criteria


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<thead>
<tr>
<th>Topographic Variables</th>
<th>Smoke Characteristics</th>
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<tbody>
<tr>
<td>percent slope</td>
<td>visibility</td>
</tr>
<tr>
<td>aspect of terrain</td>
<td>total smoke production</td>
</tr>
<tr>
<td></td>
<td>mixing height</td>
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<tr>
<td></td>
<td>transport and surface wind speeds and direction</td>
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<td>documented complaints from downwind areas</td>
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<tr>
<td>Fuel Models</td>
<td>Fire Weather Variables</td>
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<td>identify fuel(s) that are</td>
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<td>carrying the fire</td>
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<table>
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<th>Fire Characteristics</th>
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<tr>
<td>linear rate of spread</td>
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</tr>
<tr>
<td>fire spread direction</td>
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<td>flame zone depth</td>
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(Glacier National Park has resources in place to detect and monitor approaching fires. The Park contains a multi-branched system for detecting and monitoring fire behavior. This system includes a network of fire lookouts and mobile detection via ground patrols. The fire detection patrols on the ground are increased during periods of high wildfire risk (Fire Management Plan, p. 51). A summary of the factors involved in fire behavior monitoring can be viewed above (US DOI National Park Service (2010). Fire Management Plan., 40).
COOP Incident Management Team Organization Chart

(COOP, p. 9)
Fire Scenario from “Fire on the Horizon”
To preface our scenario, we want to mention that the past couple days has resulted in LAL 6 lightning activity level, resulting in dry thunderstorms and vastly increasing the potential for fire activity. Additionally, there has been little precipitation in the prior months, with the average rainfall in June and July one inch from their averages of 3.28 inches and 1.75 inches respectively, and high temperatures in the month of August, with the average temperature pushing 90 degrees.

There is a fire that started due to a lightning strike on August 15th atop hill 4940 in the backcountry, noted by the red dot on the map. The fire strikes the south facing slope of the mountain and immediately ignites a fire.

- The first day the fire moves down along the southern side of the mountain. The thunderstorm produces a downdraft pushing burning material down the ridge of the mountain and ignites a fire within the area between the two mountains.
- The second day a small wind gust from the northeast creates an unpredictably fast downslope wind gust pushing the fire between the mountains southwest. Additionally, some of the fire on the ridge gets pushed down the mountain onto ground level. When the fire is on ground level
- The third day has minimal winds, and so the fire spread is not as dramatic as the second day. It steadily grows outwards, but still continues its southwest path. By the end of the day, the fire reaches the foot of a mountain to the west and the ridge of the mountain to the south).
- On the fourth day, a big northeast wind comes, and the presence of dry fuel loads causes the fire to burn with high intensity. The fire runs quickly across the park to hit the MAP line for the Set stage to be triggered.
- The strong winds continue into the next day and the fire runs through the park further towards HQ, climbing the Belton Hills. The fire runs uphill quickly to reach the ridge by the end of the day. This will initiate the Go! stage.

- It is a Tuesday afternoon, and there are approximately 350 employees currently in the HQ district to account for. This includes seasonal employees, researchers, residents and their families. Of these, approximately 150 are going to need temporary housing during the evacuation order. The fire is projected to reach HQ by Wednesday, you may now work together to determine a course of action in response to this emergency.
Complications from “Fire on the Horizon”

Employee with COVID-19
I am a seasonal facilities technician living in the HQ housing compound. I was recently diagnosed with COVID-19 and I have to break my quarantine to evacuate. Am I allowed to show up to a rally point or relocation center?

Seasonal Technician Without a Car
I am a seasonal technician staying in HQ housing. I have only been working in the park for two weeks and I don’t know many people in the community. As I was exiting the park along GTSR, my car ran out of gas. What do I do and where do I go?

No Cell Service
In the days following the initial fire ignition, another storm rolls in and lightning strikes the cell tower on Desert Mtn. As a result, there is no cell service in HQ when the evacuation order is called. Additionally, the fire has knocked down trees into the power lines, causing a power outage. How are the HQ staff members accounted for as they leave the park?

Supervisor Missing An Employee
I am a supervisor waiting at an evacuation rally point for all of my employees. It has been 24 hours since an evacuation order was issued and I am still missing an employee. What should I do?

Supervisor on Vacation
A park supervisor with a list of employee names was on vacation/called away. How are the employees on the list accounted for as they leave the park?

Where do Employees Go?
I am a seasonal technician who has only been working in the park for 2 weeks. I was given an evacuation order and I don’t know anyone in the community to stay with. How do I know where to go?

Accommodating Disabled Employees
I am an employee who uses a wheelchair and I cannot use stairs. How will my disability be accommodated in temporary housing?
Accommodating Camping Evacuees
I have camping materials to stay in a relocation center, however, I have concerns with doing this for a long period of time. If temporary housing is needed for multiple weeks, how will I be accommodated?

Employee with PII
I work in HQ as the Associate Director of Park Planning, Facilities, and Lands, and I have a filing cabinet full of PII. What do I do with it?

Researcher with Lots of Equipment
I am a seasonal bear behavior researcher living in a park residence. I have been informed of an evacuation but I have a lot of camera equipment and hair trapping equipment I need for my research. How can I preserve my work if all my equipment can’t fit into a personal vehicle?
Deliverables
Employee Relocation Preparedness Checklists

WPI Fire Evacuation & Relocation Team
Bethany Atwood
Jack Cascone
Andy Cochran
Lauren McAdams
Will Pagliarulo

Prof. Leslie Dodson | Prof. Beth Eddy

10/12/2023

Employee Relocation Preparedness Checklists

A few responsibilities and statuses are established during the “Ready” stage to ensure sufficient time for staff preparation during an evacuation. During the “Ready” stage, it is crucial that employees communicate relevant information with their supervisors, detailed in the following checklists. To maintain the lists’ relevance, employees are recommended to reach out with an update if any of their information changes. This document is formatted to be used in digital or printed forms.

The page following each checklist contains detailed descriptions for the items on the lists.
### Relocation and Temporary Housing

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<th>Have your own place to stay?</th>
<th>Ability to camp at relocation sites?</th>
<th>Require temporary housing?</th>
<th>Pets?</th>
<th>Require additional support?</th>
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**Relocation and Temporary Housing:**

**Contact:**
- Number, email, any form of communication.

**Have your own place to stay?**
- Does the employee have a pre-established evacuation plan and/or places to stay after an evacuation?

**Ability to camp at relocation sites?**
- Does the employee have the capacity and resources to camp for extended periods of time at an evacuation relocation site if required?

**Require Temporary Housing?**
- Does the employee require temporary housing after an evacuation (i.e., housing that might last for days or weeks)?

**Pets?**
- Establish plans for employees who would be evacuating with pets or other animals. Note that household pets and service animals can be accommodated in Red Cross-provided relocation sites; however, larger animals and livestock are not.

**Require additional support?**
- Encourage employees to self-identify whether they would require additional support during evacuations, such as transport out of the park or wheelchair accessibility.
- Note additional accessibility needs for employees to be accounted for in relocation efforts.
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<th>Transportation needs for large/special items</th>
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**Employee Responsibilities:**

Documents or valuables to transport:
- Establish which documents or other valuable items employees would be required to transport from office spaces.
- Note if any of these items require special transportation, such as larger trucks or trailers.
### Supervisor Evacuation

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<th>Responsibilities for Active to assume</th>
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### Supervisor Evacuation:

**Supervisor name & contact:**
- Your name, title, and contact information.
  - If you are out, you can detail why you are out or when you are expected to return.

**Documents or valuables to transport:**
- Establish which documents or other valuable items the acting supervisor is responsible for transporting from office spaces.

**Active employee/backup supervisor, position & contact:**
- Designate an “active” employee who could assume your role as a supervisor if you are not present or available to account for employees during an evacuation.
  - Ensure that the Active employee is trained and informed of their responsibilities.
  - Communicate with employees who their acting supervisor is.

**Responsibilities for Active to assume:**
- Establish what responsibilities the stand-in supervisor will take on.
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WHAT IS READY, SET, GO? 

YOU ARE ALREADY IN THE READY STAGE AT GLAC!
THINGS TO DO PRIOR TO AN EVACUATION WARNING:

◉ Provide your contact information to your supervisor.
◉ If you live in park housing, let your supervisor know where you live and who lives with you.
◉ Sign up to receive Everbridge notifications.
◉ Understand what is expected of you and where you should go in an evacuation.

YOU COULD BE WARNED THAT YOU MIGHT NEED TO EVACUATE IN 72 HOURS OR LESS.

◉ Evacuation warnings may be delivered in person by your supervisor, through text, or via Everbridge notification.
◉ You will be notified of evacuation routes and meeting points.
◉ Identify what you will need to take with you, including documents, enough clothes for a week, and reliable transportation to escape danger.

ONCE THE EVACUATION ORDER IS GIVEN, YOU ARE REQUIRED TO LEAVE.

◉ The orders given are designed to protect human life and safety. Please follow them closely.
◉ Proceed to the checkpoint and continue to the rally point.
◉ Communicate with your supervisor or their stand-in, so they know you have evacuated safely.

***For more information, see section 3.B. of Appendix H in the Continuity of Operations Plan

WPI Fire Evacuation & Relocation Team

October 2023
A tabletop exercise is an activity in which a team or an individual presents a scenario to a stakeholder group and asks them to approach the problem as if it were real.

The intent of this exercise is to understand the decision-making process of Glacier National Park staff.

This work was produced by undergraduate students in the Worcester Polytechnic Institute (WPI) Global Projects Program. For more information: http://www.wpi.edu/academics/ugradstudies/projectlearning.html

Advisors Prof. Leslie Dodson and Prof. Beth Eddy, 2023
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Overview

**Audience**
Decision-making group

**Materials**
- Markers & pens
- Whiteboards
- Maps & relevant documentation
- Large & small sticky notes
- Notepads
- Scenario PowerPoint

**Estimated Time**
60 to 90 minutes for the activity, allowing time for an after-action 15-30 minute discussion

**Designing the Event**
- Step 1: Design a framework/scenario for a decision-making group to operate.
- Step 2: Create an open, collaborative environment.
- Step 3: Conduct a debrief to highlight decisions in key moments of activity.
What to Know When Designing an Exercise

There are three main components to keep in mind when designing a tabletop exercise:
1. Design a comprehensive activity framework
2. Create a collaborative environment
3. Conducting a debrief or after action review.

Step 1: Designing a Framework

Create Clear Objectives
One of the first factors to consider when designing an activity framework is to create a list of objectives. Objectives should be straightforward. When coming up with objectives, consider:
- What do you hope to achieve with this exercise?
- What do you want participants to do, think, and feel during/after the exercise?
- What does success look like in this exercise?

Design the Scenario
When designing a scenario, the main considerations include developing realistic parameters and accounting for available time. When setting up the context for the scenario, it is important to keep the general parameters realistic, but exaggerate if needed. There is utility in creating a worst case scenario that could be realistically considered in the space of the exercise.
It is important to determine and communicate the length of time available to participants. The time frame can be flexible, but should allow for sufficient discussion throughout.
What to Know When Designing an Exercise

Resources for the Tabletop Exercise
Before constructing a scenario, the facilitator should take into account what resources they plan on providing to participants. These resources should be comprehensive and mirror what would be available during a real incident. For example, if the scenario is about a fire in the park, the participants should have access to a map of the affected area and documentation about fire procedures.

Creating Complications
In a real event, it is unlikely that everything will go as planned! To emulate this, the facilitator will periodically introduce complications to the participants. These are meant to make the initial scenario more difficult to solve or bring attention to details that may be overlooked. Complications should be relevant to the problem addressed in the activity but should encourage participants to consider new perspectives. Each complication should include a brief but descriptive explanation, including one particular driving detail to push the discussion in a new direction.

Presentation Methodology
Participants should feel comfortable with what the activity is before they are presented with the scenario. It may be helpful to present the activity overview before the scenario, then present the scenario, and then present the objectives. Defining the objectives after the scenario makes it stay fresh in the minds of the participants so they know where to focus their attention when beginning the activity. The facilitator might want to capture the participants’ attention. This can be accomplished with an intensely visual (and maybe audible) “attention” slide in your presentation. The facilitator can introduce complications into the scenario once they have the group’s attention.
What to Know When Designing an Exercise

Step 2: Create a Collaborative Environment

This way, the participants are left with some uncertainty to fuel their reactions, both to the initial scenario and to the additional complications, as if it were a real incident.

Room Layout
The participants should be encouraged to collaborate! Arrange the space so participants can stand or sit around a central table, with ample space to move around. Maps, relevant documentation, markers, pens, sticky notes, and notepads should be scattered on a table to encourage participants to interact with them. The PowerPoint presentation should be projected to a location that is visible from the central table. Additional tables may be set up around the room to allow for smaller group discussions and individual work as desired.

Provide an Activity Overview
In the activity introduction, the facilitator should provide a concise purpose statement that gives participants an understanding of what to expect in the exercise. This general introduction should avoid mentioning additional complications or other activity components, those come later!
What to Know When Designing an Exercise

The Facilitator’s Role
During the exercise, the facilitator should only provide answers to questions regarding the context of the scenario. The participants may ask the facilitator if they are making correct decisions when prompted with complications, but it is not the facilitator’s job to affirm. In a real event, the decision-making team would not have this luxury, so don’t give it to them. The intent is to direct the participants’ focus inwards to make decisions as a group. Additionally, participants should feel comfortable speaking openly and making mistakes throughout the scenario. Qualities of an effective facilitator include:

- Listening attentively to the discussion.
- Flexibility to changing methods or scripts.
- Speaking clearly and coherently.
- Allowing for an open dialogue.

Know When to Interject
The facilitator should use their best judgment when interrupting conversation during the activity. To encourage the discussion of a variety of topics, the facilitator should interject roughly every two to four minutes with a new complication. If there is valuable discussion occurring, let it unfold on its own before presenting the complication. If the participants are stuck on one scenario or question and are no longer making progress, the facilitator may interject with “pixie dust,” superficially solving the problem so that the participants can move on. Keep track of any time problems are alleviated this way!
What to Know When Designing an Exercise

Step 3: Conducting an After-action Review

**Highlighting Key Decisions.**
The main goal of the debrief is to have the decision-making group discuss the key results of the scenario response. It is important to ask participants how they felt about the activity and what went well. Discussion topics should likely be guided by the objectives that the facilitator gives or what areas the decision-making group needs the most work on in the future.

**Provoking Thoughts for Future Work.**
When leading the after-action discussion, develop guiding questions that can elicit suggestions for future work. These conversations can help inform the agenda of future activities, as well as help participants to identify where there are gaps in knowledge or planning regarding the topic relevant to the activity. Any time “pixie dust” was used should be addressed!
What to Know When Designing an Exercise

Guiding Question Examples

What were your thoughts about the activity?
What scenario was the scariest?
From your perspective what went well with the execution of the plan?
How would you want to operate differently in the future? What parts of the plan need more clarity?
In what areas of the procedure did you operate differently from the conventional plan?
Were there resources on the table that you were unfamiliar with?
What areas did you feel could have gone better?
What resources were particularly helpful? Were there any resources you weren’t provided with that you feel would have been helpful?
Sample Activity
HQ Fire Scenario

**Audience**
Leadership Team

**Materials**
HQ District Evacuation Plan
Occasional Emergency Plan
Continuity of Operations Plan
Maps of Flathead County, HQ, and HQ District (Fire Map
Markers & pens
Whiteboard
Sticky notes & notepads
HQ Scenario PowerPoint

**Estimated Time**
60 to 90 minutes for the activity, allowing time for an after-action 15-30 minute discussion

**Scenario**
A lightning strike started a fire 5 days ago, a sudden wind accelerated its spread and it will reach HQ in 24 hours, evacuation orders have been issued.

**Objective**
Evacuate 350 park staff and relocate 150 from the Headquarters District.
1. Successfully evacuate and account for all employees
2. Provide relocation sites and resources
3. Address concerns of various park staff
Sample Tabletop Evacuation Scenario

WPI Fire Evacuation Team

Bethany Atwood, Jack Cascone, Andy Cochran, Lauren McAdams, Will Pagliarulo

Activity Purpose

Gather information on the perspective of park leadership regarding fire evacuation and relocation in the Headquarters region

Map of HQ
HQ District Evacuation Plan
Occupant Emergency Plan
County Map
Sample PowerPoint

1. Successfully evacuate and account for all employees in headquarters area.
2. Provide relocation sites and resources for evacuees in need.
3. Address concerns of various stakeholder groups.

Map of HQ District, & Fire
Sample PowerPoint

Walking Tour Map of HQ

Map of Flathead County - the fire and HQ are labeled
Sample PowerPoint

Use this slide when presenting complications

The black lines mark the perimeter of the fire at the end of each day. The fire began as a result of a lightning strike at the red dot.
Scenario Script

To preface our scenario, we want to mention that the past couple days has resulted in LAL 6 lightning activity level, resulting in dry thunderstorms and vastly increasing the potential for fire activity. Additionally, there has been little precipitation in the prior months, with the average rainfall in June and July one inch from their averages of 3.28 inches and 1.75 inches respectively, and high temperatures in the month of August, with the average temperature pushing 90 degrees. There is a fire that started due to a lightning strike on August 15th atop hill 4940 in the backcountry, noted by the red dot on the map. The fire strikes the south facing slope of the mountain and immediately ignites a fire.

1) The first day the fire moves down along the southern side of the mountain. The thunderstorm produces a downdraft pushing burning material down the ridge of the mountain and ignites a fire within the area between the two mountains.

2) The second day a small wind gust from the northeast creates an unpredictably fast downslope wind gust pushing the fire between the mountains southwest. Additionally, some of the fire on the ridge gets pushed down the mountain onto ground level.

3) The third day has minimal winds, and so the fire spread is not as dramatic as the second day. It steadily grows outwards, but still continues its southwest path. By the end of the day, the fire reaches the foot of a mountain to the west and the ridge of the mountain to the south.

4) On the fourth day, a big northeast wind comes, and the presence of dry fuel loads causes the fire to burn with high intensity. The fire runs quickly across the park to hit the MAP line for the Set stage to be triggered.

5) The strong winds continue into the next day and the fire runs through the park further towards HQ, climbing the Belton Hills. The fire runs uphill quickly to reach the ridge by the end of the day. This will initiate the Go! stage.

It is a Tuesday afternoon, and there are approximately 350 employees currently in the HQ district to account for. This includes seasonal employees, researchers, residents and their families. Of these, approximately 150 are going to need temporary housing during the evacuation order. The fire is projected to reach HQ by Wednesday, you may now work together to determine a course of action in response to this emergency.
Complication Cards

Employee with COVID-19
I am a seasonal facilities technician living in the HQ housing compound. I was recently diagnosed with COVID-19 and have to break my quarantine to evacuate. Am I allowed to show up to a rally point or relocation center?

Seasonal Technician Without a Car
I am a seasonal technician staying in HQ housing. I have only been working in the park for two weeks and don't know many people in the community. As I was exiting the park along GTSR, my car ran out of gas. What do I do and where do I go?

No Cell Service
In the days following the initial fire ignition, another storm rolls in and lightning strikes the cell tower on Desert Mtn. As a result, there is no cell service in HQ when the evacuation order is called. Additionally, the fire has knocked down trees into the power lines, causing a power outage. How are the HQ staff members accounted for as they leave the park?

Supervisor Missing An Employee
I am a supervisor waiting at an evacuation rally point for all of my employees. It has been 24 hours since an evacuation order was issued and I am still missing an employee. What should I do?
Complication Cards

**Supervisor on Vacation**
A park supervisor with a list of employee names was on vacation/called away. How are the employees on the list accounted for as they leave the park? (Who would have this list of names instead?)

**Where do Employees Go?**
I am a seasonal technician who has only been working in the park for 2 weeks. I was given an evacuation order and I don't know anyone in the community to stay with. How do I know where to go?

**Accommodating Disabled Employees**
I am an employee who uses a wheelchair and I cannot use stairs. How will my disability be accommodated in temporary housing?

**Accommodating Camping Evacuees**
I have camping materials to stay in a relocation center, however, I have concerns with doing this for a long period of time. If temporary housing is needed for multiple weeks, how will I be accommodated?
Complication Cards

Employee with PII
I work in HQ as the Associate Director of Park Planning, Facilities, and Lands, and I have a filing cabinet full of PII. What do I do with it?

Researcher with Lots of Equipment
I am a seasonal bear behavior researcher living in a park residence. I have been informed of an evacuation but I have a lot of camera equipment and hair trapping equipment I need for my research. How can I preserve my work if all my equipment can't fit into a personal vehicle?
Sample Tabletop Evacuation Scenario

[Target Group]

[Facilitator]

Activity Purpose

Written here. You may also include images with labels of documents and maps given out to the participants.
Primary Goals

1. You can have more or less than three

2. You can duplicate these boxes to make more

3. You can also change the background

*You can link boxes to slides in the PowerPoint. Click this box to access the Attention Slide

*If you want to draw fire boundaries, navigate to the Draw tab. You can use 'Ink to Shape' to move or resize the line
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<td>11</td>
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This work was produced by undergraduate students in the Worcester Polytechnic Institute (WPI) Global Projects Program. For more information: http://www.wpi.edu/academics/ugradstudies/projectlearning.html
Overview

This manual details how our team designed and facilitated bingo activities and written prompts to gather information about the knowledge and concerns of Glacier National Park employees regarding evacuation. Our activities were designed to provoke thought, gauge interest, and collect responses from the perspective of a variety of different staff members.

Intended Audience: Glacier National Park staff members

Materials:
• Markers and pens
• Large and small sticky notes
• Notepads
• Bingo Cards
• Large sheets of paper

Estimated Time: 30 to 60 minutes

Designing the Event:
Designing Bingo Activities
Creating Prompts
Designing Bingo Activities

Bingo activities are helpful to gain insight into the general experiences, opinions, and thoughts of participants.

Creating Bingo Cards

A helpful resource for designing bingo cards is https://bingobaker.com/. This site provides a template to create bingo sheets, with customizable titles and topics for each bingo square. The title and content of each bingo square can be changed by typing directly into the text boxes.

Changing Bingo Card Dimensions

This template also includes adaptable dimensions to make the bingo game smaller or larger, with options for 3x3, 4x4, 5x5, 6x6 or 7x7 bingo squares. The dimensions can be adjusted by selecting the desired option from the drop-down menu.
Changing Bingo Card Color

The color of the bingo cards’ background, text, and grid lines can also be adjusted by selecting each setting and moving the cursor to the desired color.

Facilitating Bingo Activities

While bingo is a self-guided activity, it is helpful to have a facilitator nearby to answer participant questions and provide further instruction as needed. Bingo also requires participants to directly interact with the activity materials, and thus bingo sheets should be displayed on a flat surface in a way that is easy for participants to read and write on.
Creating Prompts

Designing Thoughtful Prompts

Written prompts provide a space for participants to directly voice their concerns and opinions about specific topics that may not be adequately covered in the bingo activities. It is helpful to phrase the prompts as open-ended questions that participants can engage with thoughtfully. The prompts can also act as a tool to encourage further discussion and thought for the topics presented in them.

Displaying Prompts

Prompts should be displayed on a solid surface with large sheets of paper that have ample room for written responses. It is best to collect all the responses to a given prompt on a single sheet of paper. This allows the participants to write their own responses while also referring to other responses to voice their agreement or disagreement. With several prompts, it is helpful to display them in an order that leads the participants logically from one topic to the next, or from a general topic to more specific aspects of each topic.

Photo taken by Andy Cochran
Facilitating Prompts

A facilitator should be seated near the prompt sheets to provide instructions or clarifications to participants. Given the nature of the prompts, participants may also want to engage in further discussion with the facilitator after writing their responses. It is helpful for the facilitator to prepare additional sets of relevant questions to follow up with participants.
Sample Activities

Bingo Activities and Prompts to Raise Awareness and Gather Information about Post-Evacuation Processes in Glacier National Park

**Intended Audience**
Glacier National Park staff members at an all-staff potluck

**Estimated Time**
30 to 60 minutes

**Materials**
Markers and pens
Large and small sticky notes
Notepads
Resource Bingo Cards
Emergency Bingo Cards
Large sheets of paper

**Designing the Event**
Sample Activity Setup
Sample Bingo Activities
- Resource Bingo
- Emergency Bingo
Sample Prompt Activity
Sample Activity Setup

1. Set up two tables to display the activities, one table for the bingo sheets, the other for the prompts.

2. Evenly distribute the large prompt sheets on one table and place a variety of writing utensils around them. Ensure that each prompt is visible and has sufficient room for participants to write.

3. On the other table, arrange the bingo cards evenly to ensure that they are all visible to participants. Excess bingo cards can be placed in a stack and monitored by the facilitator to replenish them as needed.

4. If there are multiple different bingo cards, designate different parts of the table to each card to prevent confusion. It may also be helpful to verbally explain that there are multiple different cards to participants as they approach the table.

5. It can be helpful to provide other incentives, such as candy or other small prizes, to participants. These incentives can be presented in a bowl or spread around the activity tables.
Sample Bingo Activity
Resource Bingo

**Goal**
Elicit information about the materials and supplies Glacier National Park staff members owned that could be helpful in relocation efforts.

**Game Format**
The resource bingo cards listed various different supplies that could be helpful in an evacuation and relocation context. Participants were directed to circle the supplies and tools that they had in green, then to draw an “X” through those that they didn’t have in red.
Sample Bingo Cards
Resource Bingo

<table>
<thead>
<tr>
<th>B</th>
<th>I</th>
<th>N</th>
<th>G</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period Products</td>
<td>Emergency Blanket</td>
<td>Cooler</td>
<td>Cleaning Supplies</td>
<td>Flashlight</td>
</tr>
<tr>
<td>Portable drinking water</td>
<td>Trash Bags</td>
<td>Mess Kit</td>
<td>Canned Food</td>
<td>Maps</td>
</tr>
<tr>
<td>Tool Kit</td>
<td>Tent</td>
<td>Whistle</td>
<td>Jackets, Gloves, Hats</td>
<td>Lighter</td>
</tr>
<tr>
<td>Extra Clothes</td>
<td>First-Aid Kit</td>
<td>Toiletries</td>
<td>RV</td>
<td>Batteries</td>
</tr>
<tr>
<td>Sleeping Bag</td>
<td>Radio</td>
<td>Toilet Paper</td>
<td>Portable Stove; Fuel</td>
<td>Multitool</td>
</tr>
</tbody>
</table>
### Sample Bingo Cards

#### Resource Bingo Completed

```
Resource Bingo

<table>
<thead>
<tr>
<th>B</th>
<th>I</th>
<th>N</th>
<th>G</th>
<th>O</th>
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</tr>
</tbody>
</table>
```

- Have It
- Don't Have It

---

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Sample Bingo Activity
Emergency Bingo

**Goal**
Identify the past evacuation experiences of staff members and determine what areas of evacuation and relocation plans were the most unclear to park staff.

**Game Format**
The bingo cards included statements designed to highlight staff members’ past evacuation experiences and concerns. Participants were directed to circle the statements that they related to.
# Sample Bingo Cards

## Emergency Bingo

<table>
<thead>
<tr>
<th>B</th>
<th>I</th>
<th>N</th>
<th>G</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filled out the “Ready” stage checklist</td>
<td>Had to Evacuate Pets</td>
<td>Prepared an Emergency &quot;Go!&quot; Bag</td>
<td>Been evacuated for over 3 days</td>
<td>Experienced an Evacuation Warning</td>
</tr>
<tr>
<td>Used Camping Gear in an Emergency</td>
<td>Been unable to account for a co-worker after an evacuation</td>
<td>Feared for your safety during or after an evacuation</td>
<td>Felt unsure of what equipment to take in an evacuation</td>
<td>Felt unsure of what documents to take in an evacuation</td>
</tr>
<tr>
<td>Lacked necessary resources after an evacuation</td>
<td>Overestimated the time you had to prepare for an evacuation</td>
<td>Shared resources in an emergency</td>
<td>Evacuated Children/Infants</td>
<td>Spent time in a relocation center</td>
</tr>
<tr>
<td>Felt unsure of where to go after an evacuation</td>
<td>Felt unsure of which evacuation routes to take</td>
<td>Borrowed resources in an emergency</td>
<td>Been unsure of where your &quot;check-in point&quot; is</td>
<td>Experienced an Evacuation Order</td>
</tr>
<tr>
<td>Left Behind Important items during an evacuation</td>
<td>Lost comms during an evacuation</td>
<td>Filled out the &quot;Set&quot; stage checklist</td>
<td>Family/Friends have experienced evacuation orders</td>
<td>Underestimated the length of time you would be evacuated</td>
</tr>
</tbody>
</table>
## Sample Bingo Cards

### Emergency Bingo

<table>
<thead>
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<td>Underestimated the length of time you would be evacuated</td>
</tr>
</tbody>
</table>
Sample Prompt Activity

Fire Evacuation Prompts

Goal
Our team designed four different prompts to better understand the concerns of Glacier National Park staff on wildfire evacuation and relocation. These prompts were intended to gather a variety of perspectives on fire evacuation and relocation in the park.

Game Format
The prompts were written on large sheets of paper affixed to a table. We also provided a variety of different colored markers for participants to write their responses.

Sample Prompts

What comes to mind when you hear “fire evacuation”?

What are your concerns regarding fire evacuations?

What resources do you think would be helpful during & after a fire evacuation?

What assets do you have that can be used for an evacuation or relocation?
What comes to mind when you hear "Fire Evacuation"?

Priority Items

A "go bag"

Pack!!!

"Stop, Drop & Roll"

Walking out of a building until it is safe.

What should I bring?

Essentials:

What do I have that exists nowhere else?

What is critical & possibly unique to the function I provide due to perils?

What do I go?

Unknown: what time every life will end like way I live worked hard learned about, disasters etc.

What is in danger?

Buildings, properties, pets?

Burn Baby Burn...Disco Inferno

Sorry!
Sample Evacuation Prompts
Completed

What are your **CONCERNS**
regarding **Fire Evacuation**?

**A meeting Place!**

- Employees understand the PLAN
- Simple
- Check LIST

- What do we interact with us (work-related materials)

Exit

- Being notified with enough time to get all my things — Yes
- Not knowing where to meet — Yes
- Employees take time to organize once evacuated
- Employees that I supervise and live in housing (listed)

- Where to go
- What to bring
- Planned evacuation blocked

- Only 1 way to Dine outside West 61
Sample Evacuation Prompts
Completed

What **Resources** would be helpful to you during & after a **Fire Evacuation**?

- Truck
- People to man shift
- We can eat soup
- Water, snacks
- **plenty of time to prepare**
- Internet access
- Phone/GPS
- A brief, clear plan
- A sense of community
- Access to computer files/drives
- Clear communication on what to do & when we can go back
- Roles
- Someone to contact if I am safe & if re. work
- Please, short term. Please, to shower

A list of the places we’d be evacuated to, and E/HW to report to work.
Sample Evacuation Prompts
Completed

What **Assets** do you have that can be used in an **Evacuation** or for a **Relocation**?

* skills, physical resources, property, etc.

- Hunting
- Skills
- USGS
- Samples
- + Some datasets
- Knowledge
- Area
- Age
- WFR
- First Aid
- CPR
- Camping
- Survival
- Skills
- Sped-up
- Tracking
- Evacuate
- notification
- System
- Livestock, pets
-方向
- EMT, WFR, First Aid
- Truck
INCIDENT ACTION PLAN

GLACIER NATIONAL PARK

Bethany Atwood, Jack Cascone, Andy Cochran, Lauren McAdams, Will Pagliarulo
This document was produced to accompany:

Continuity of Care: Glacier National Park Fire Evacuee Relocation

Bethany Atwood, Jack Cascone, Andy Cochran, Lauren McAdams, Will Pagliarulo

Prof. Leslie Dodson, Prof. Beth Eddy

10/12/2023

This work was produced by undergraduate students in the Worcester Polytechnic Institute (WPI) Global Projects Program. For more information: http://www.wpi.edu/academics/ugradstudies/projectlearning.html
This Incident Action Plan is intended to help Glacier National Park leadership organize critical information and develop a course of action in an incident. This IAP was adapted from various IAP templates from the Federal Emergency Management Agency (FEMA).

This document has space to outline incident objectives, work assignments, resource allocation, and contact lists.

**Developed For:** Glacier National Park Leadership Team

**Purpose:** These suggestions are to help park leadership prepare for an incident or evacuation. Each section is intended to help assign roles and objectives best suited for the specific incident at hand.

**An Incident** refers to an unplanned event that can result in injury, damage to property, or a disruption of normal operations (United States Department of Labor).
## Glossary

### Incident Objectives:
Space for leadership to describe their priorities and objectives when handling a specific incident; outlines the contents of the IAP.

### Incident Trigger Points:
Space to identify “trigger points” that would result in further actions by leadership (ex. A fire reaching a specific MAP line may trigger the “Go!” stage).

### Incident Map:
Identifies the area of GLAC affected by the incident; notes details specific to certain areas of the park.

### Communication Plan:
Assigns incident responsibilities and provides contacts from various relevant teams and offices.

### Incident Command Structure:
Provides space to assign park employees to all positions in the ICS.

### Medical Plan:
Lists medical services and contacts that may be of use in an incident.
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Incident Trigger Points: 7
Incident Map: 8
Communication Plan: 10
Incident Command Structure: 14
Medical Plan: 16
GLAC Wildfire ICS Template (Modeled from FEMA)
Incident Objectives

<table>
<thead>
<tr>
<th>GLAC ICS Incident Objectives</th>
<th>1. Incident Name:</th>
<th>2. Date Prepared:</th>
<th>3. Time Prepared:</th>
</tr>
</thead>
</table>

4. Operational Period:

5. Incident Objectives:
   State Priorities:

   **State Objectives:**

6. Weather Forecast for Location Affected:

7. Attachments (mark if attached)
   - [ ] Incident Trigger Points
   - [ ] Incident Map
   - [ ] Communication Plan
   - [ ] ICS Chart
   - [ ] Medical Plan

8. Prepared by:
   Date/Time:

9. Reviewed by:
   Date/Time:
GLAC Wildfire ICS Template (Modeled from FEMA)
Incident Trigger Points

<table>
<thead>
<tr>
<th>GLAC ICS Incident Trigger Points</th>
<th>Incident Name:</th>
<th>Date Prepared:</th>
<th>Time Prepared:</th>
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</table>

**Operational Period:**

**Incident Trigger Points**

**Risk Factors for Changes in Incident:**

**Risk Factors Impacting Successful Evacuation:**

**Rally Point for Evacuation Order:**

**Prepared by:**

**Date/Time:**

**Reviewed by:**

**Date/Time:**
GLAC Wildfire ICS Template (Modeled from FEMA)
Incident Map

<table>
<thead>
<tr>
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<th>Incident Name:</th>
<th>Date/Time Prepared:</th>
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<tr>
<td><strong>Affected Areas:</strong></td>
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Prepared by:               Reviewed by:               PAGE 1 OF 2
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<td>Notes:</td>
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</table>

Prepared by:          Reviewed by:  PAGE 2 OF 2
GLAC Wildfire ICS Template (Modeled from FEMA)
Communication Plan

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<thead>
<tr>
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<th>Incident Name:</th>
<th>Operational Period</th>
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Contact List:

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<thead>
<tr>
<th>Incident Offices/Contacts</th>
<th>Office</th>
<th>Faculty Operational Hours</th>
<th>Phone Number</th>
<th>Fax Number</th>
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<tbody>
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Responsibilities:

Leadership

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<tr>
<th>Position</th>
<th>Name</th>
<th>Phone</th>
<th>Email</th>
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</thead>
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Responsibilities:

Incident Command Staff
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<th>Name</th>
<th>Phone</th>
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Responsibilities:

Operations

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Responsibilities:

Logistics

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**Responsibilities:**

**Planning**

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**Responsibilities:**

**Finance & Administration**

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**Responsibilities:**
# External Contacts

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# Special Instructions:

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# Resources Assigned

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<th>Contact Information</th>
<th>Work Assignments</th>
<th>Reporting Location</th>
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Communications (radio frequency information/contact numbers needed for assignments)

Prepared by: 
Date/Time:  
Reviewed by:  
Date/Time:
GLAC Wildfire ICS Template (Modeled from FEMA)
Incident Command Organization Chart

<table>
<thead>
<tr>
<th>GLAC ICS Organization Chart</th>
<th>Incident Name:</th>
<th>Date/Time Prepared:</th>
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<tr>
<td>Safety Officer</td>
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<tr>
<td>Liaison Officer</td>
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<tr>
<td>Operations Section Chief</td>
<td>Planning Section Chief</td>
<td>Logistic Section Chief</td>
<td>Finance/ Administration Section Chief</td>
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<td>Communications Unit Leader</td>
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(From: Continuity of Operations Plan)

Prepared by:   Reviewed by:   PAGE 1 OF 2
<table>
<thead>
<tr>
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<td>□ Communications Unit Leader:</td>
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Prepared by: | Reviewed by: | PAGE 2 OF 2
GLAC Wildfire ICS Template (Modeled from FEMA)
Medical Plan

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Operational Period:

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Transportation/Ambulance Services

<table>
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<th>Name</th>
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<th>Paramedics (Y/N)</th>
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Hospitals

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<th>Name</th>
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<th>Phone</th>
<th>Burn Center (Y/N)</th>
<th>Travel Time</th>
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Medical Emergency Procedures

Prepared by: Reviewed by:
Date/Time: Date/Time:
Additional information regarding the development of Incident Action Plans can be seen below:
