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Design Studio

Anjali, John, Nicole, Quintan, Sanjana, VK

Fireside

INTERACTIVE



Report Contents

01 Introduction

02 Project Overview

03 Visuals

04 Spatial Design and Materials

05 User Experience

06 Production

Our Team



Anjali

UX/UI DESIGN



John

INTEGRATION & LOGISTICS &
MANAGEMENT



Nicole

DATA COLLECTION



Quintan

FABRICATION &
INTEGRATION



Sanjana

UX DESIGN



VK

VISUAL DESIGN

BACKGROUND

In Colorado, wildfires have destroyed more than 3,000 homes since the year 2000, with damages exceeding \$5 billion. These devastating fires have transformed landscapes and proven that no season or location is immune to risk. As students at CU Boulder, we came to understand the profound impact of the Marshall Fire on our community and surrounding areas, inspiring us to create an educational resource that transforms complex wildfire information into accessible knowledge for all residents.



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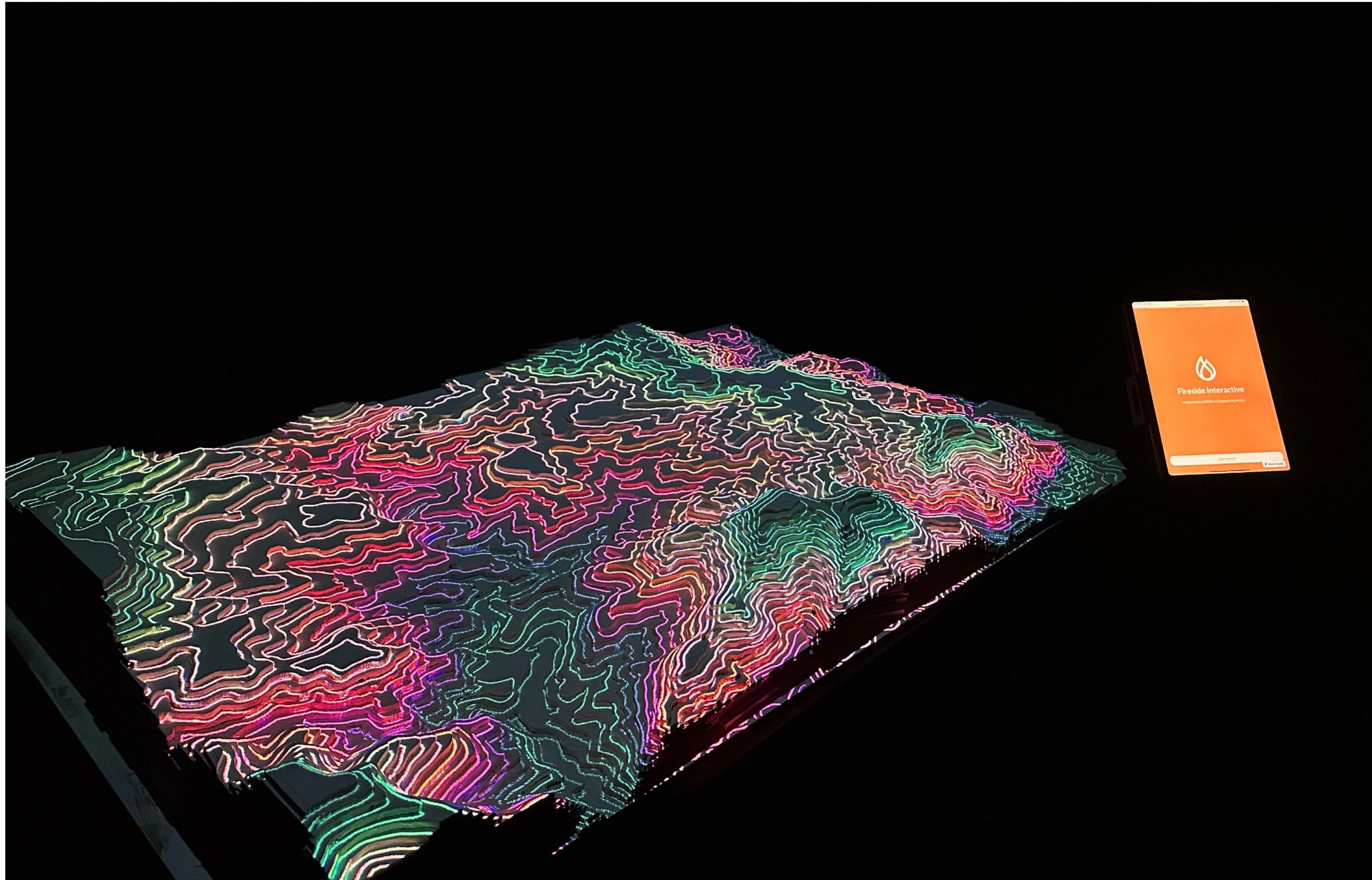
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PROJECT



Fireside Interactive is an educational experience centered around a 3D topographical table that displays wildfire simulations through dynamic projections, showing how environmental conditions and firefighting strategies affect fire behavior.

Users can observe fire movement across different environmental conditions, as well as view how various suppression tactics are employed to combat fires.

THIS EXPERIENCE WILL CONSIST OF THREE STAGES:



Educational Content

Users navigate through interactive slides covering wildfire fundamentals and mitigation strategies.

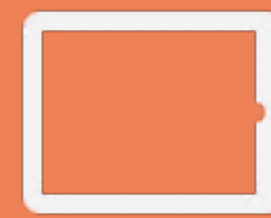


Table Demonstration

Users select and observe different fire behavior scenarios displayed on the 3D topographical map.

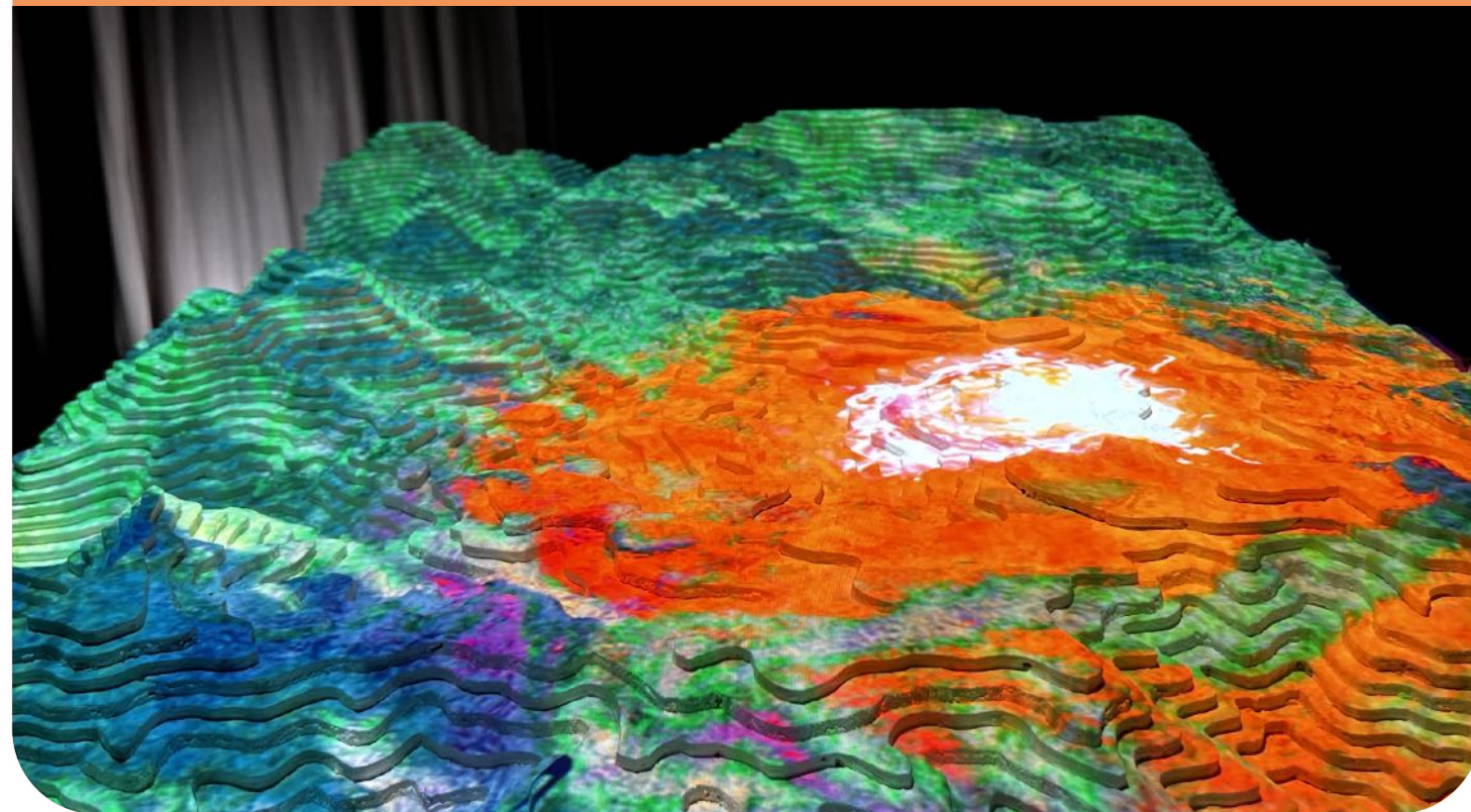


Takeaway

Upon completion, users receive a comprehensive safety guide via QR code scan.

GOALS

Create an immersive learning experience using a 3D topographical map where users can explore fire behavior and prevention strategies.



Foster community wildfire awareness and preparedness through engaging, interactive education.



TARGET AUDIENCE



Government Agencies



Wildfire Educators



Boulder Residents



Museum Curators

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BRAND AND COLOR PALETTE

Font

Aa

Headers: Body:
Milligram Lato



Fireside Interactive		Regular	Body	
Fireside Interactive	14px	Medium	Bold	14px
Fireside Interactive	16px	Regular	Body	16px
Fireside Interactive	16px	Medium	Label	
Fireside Interactive	20px	Medium		
Fireside Interactive	20px	Bold	Buttons	
Fireside Interactive	24px	Bold	H1	
Fireside Interactive	28px	Bold	H2	

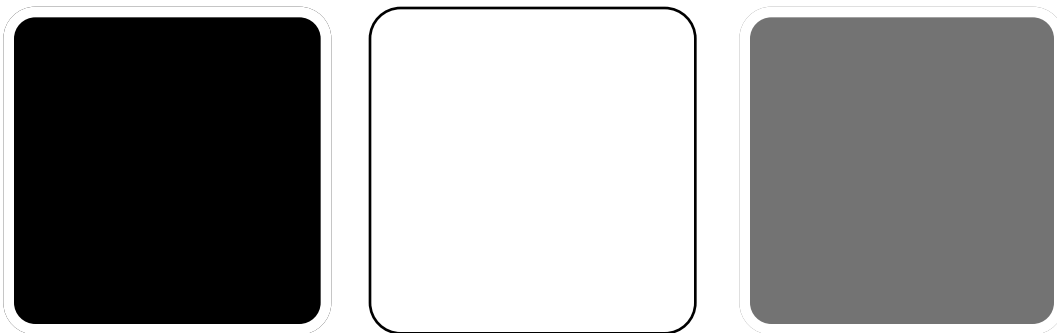
UI VISUAL DESIGN

COLOR PALETTE

PRIMARY COLORS



NEUTRAL COLORS



BUTTON

PRIMARY BUTTONS

EnabledPressedDisabled

SECONDARY

EnabledPressedDisabled

TERTIARY

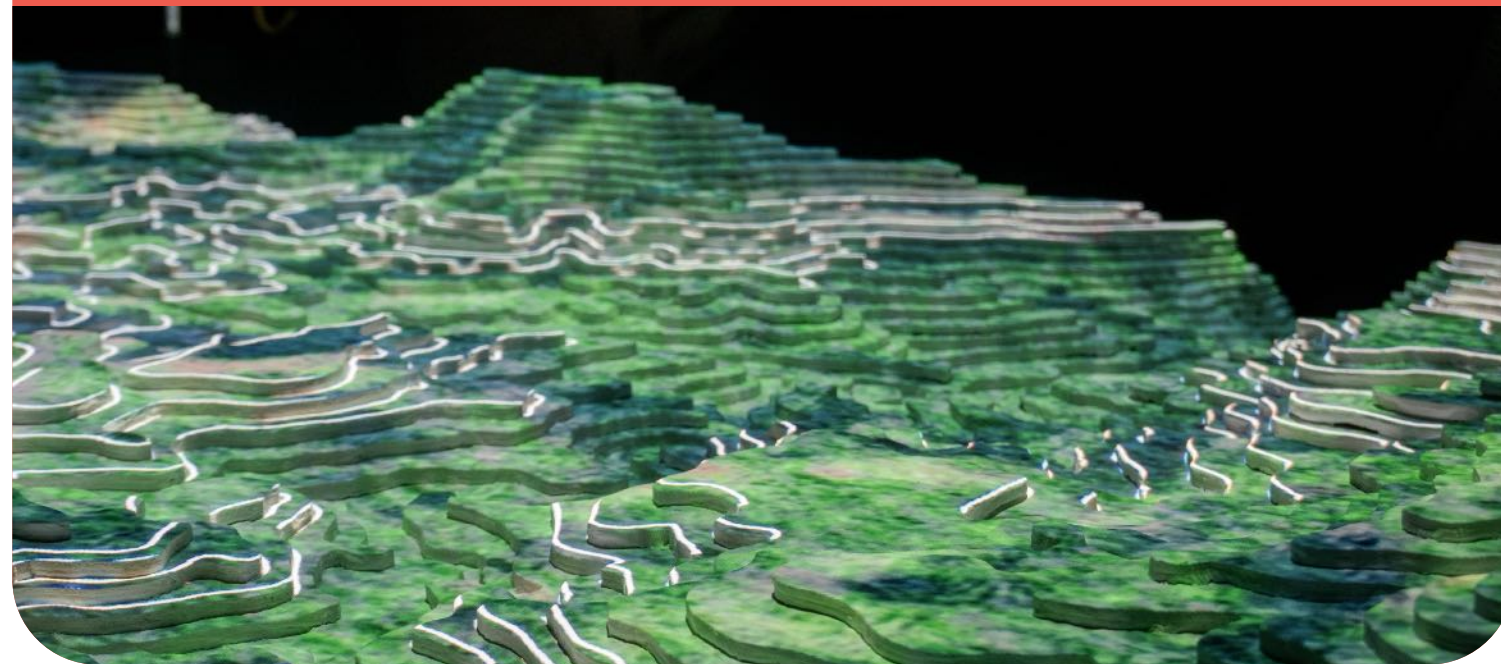
EnabledEnabledDisabled

SIMULATION GRAPHICS

Simulation Structure

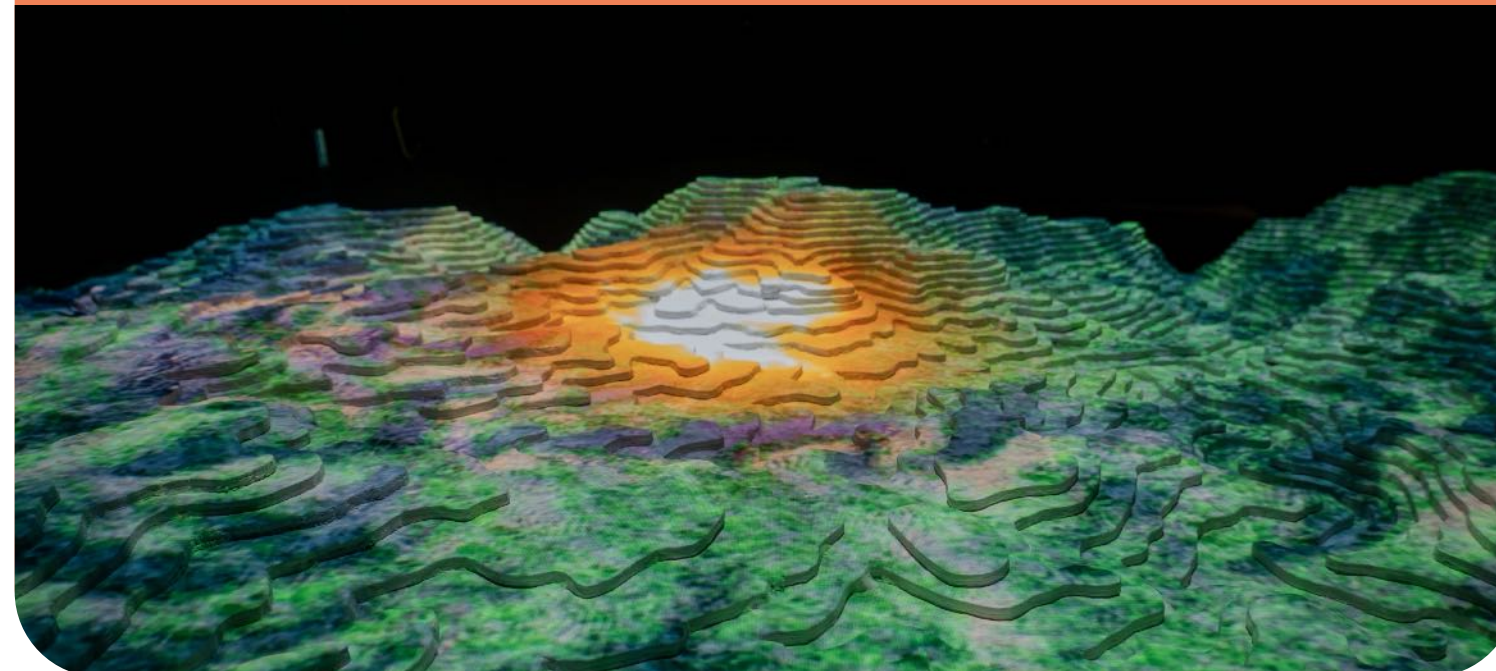
Idle

Shows landscape of map and simple animation while user interacts with tablet.



Experience

Demonstrates fire spread on table when prompted by tablet.



Demo

While no one is interacting with educational content, table shows interesting topographical visuals



SIMULATION GRAPHICS

What we did?

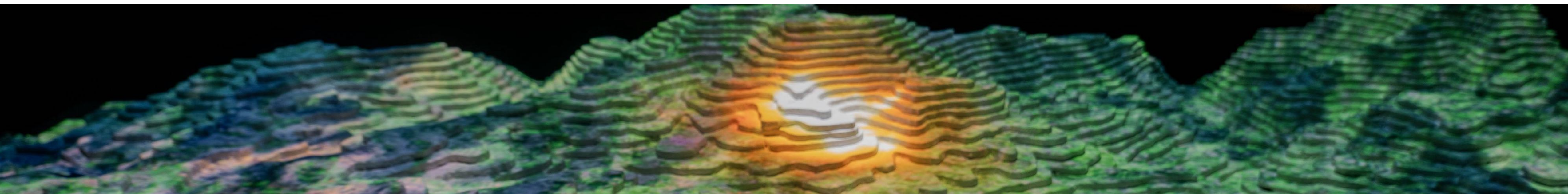
Simulation experience is a guided, interactive learning technique that replicates real-world situations to help people understand about wildfire's parameters and mitigation strategies.

We created 6 different simulation videos to educate users about wildfire behavior which involves 3 from different parameters that affect wildfire and 3 from different mitigation strategies to stop the wildfire.

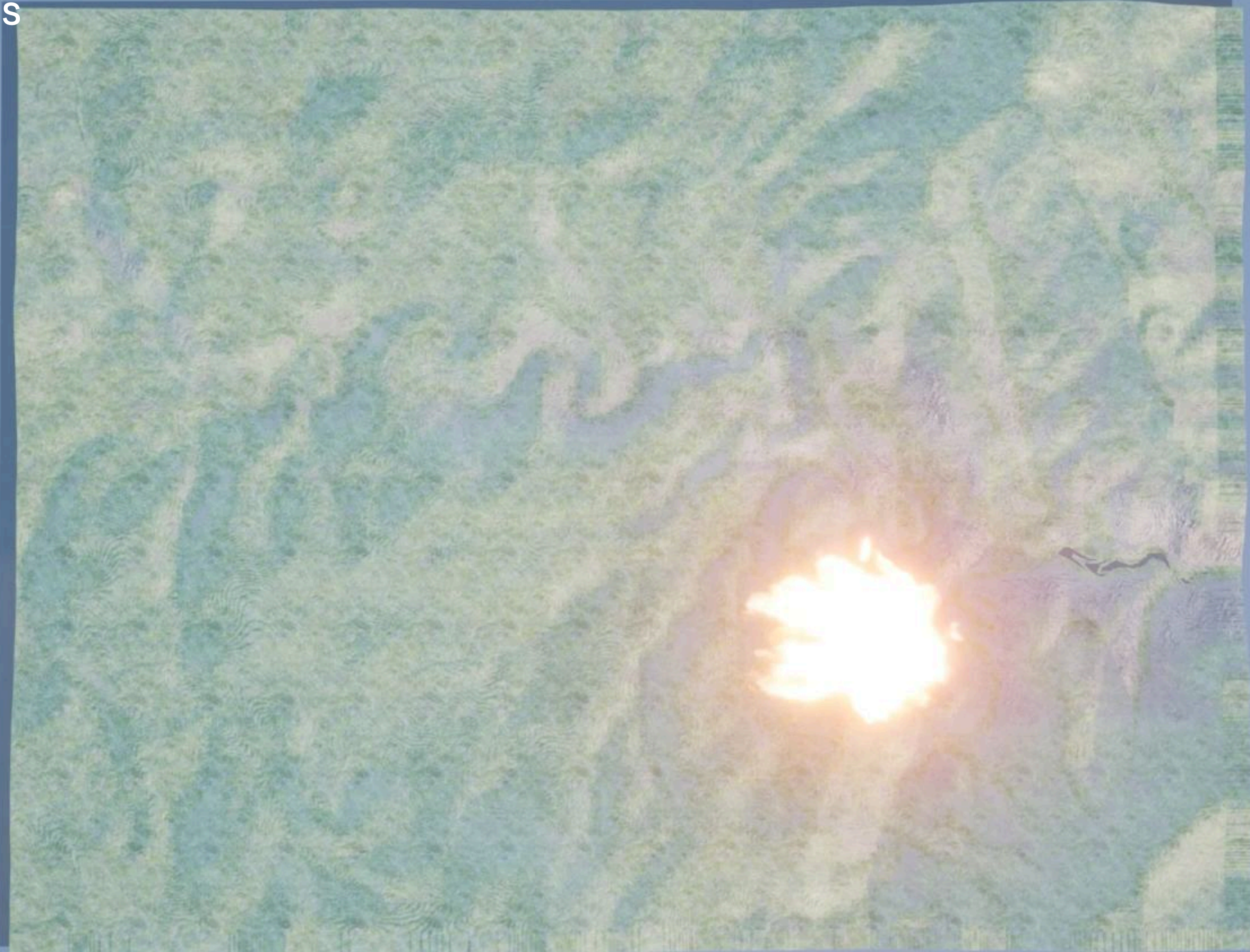
Why we went simulation?

Our project transitioned from an interactive, game-like concept to a serious educational simulation focused on wildfire behavior. This change underscores our commitment to addressing the critical issue of wildfires.

The simulation allows users to explore key factors influencing wildfires, such as wind speed, terrain, and fuel types, while highlighting effective mitigation strategies. By visually representing wildfire dynamics, we aim to raise awareness about fire prevention and community safety.

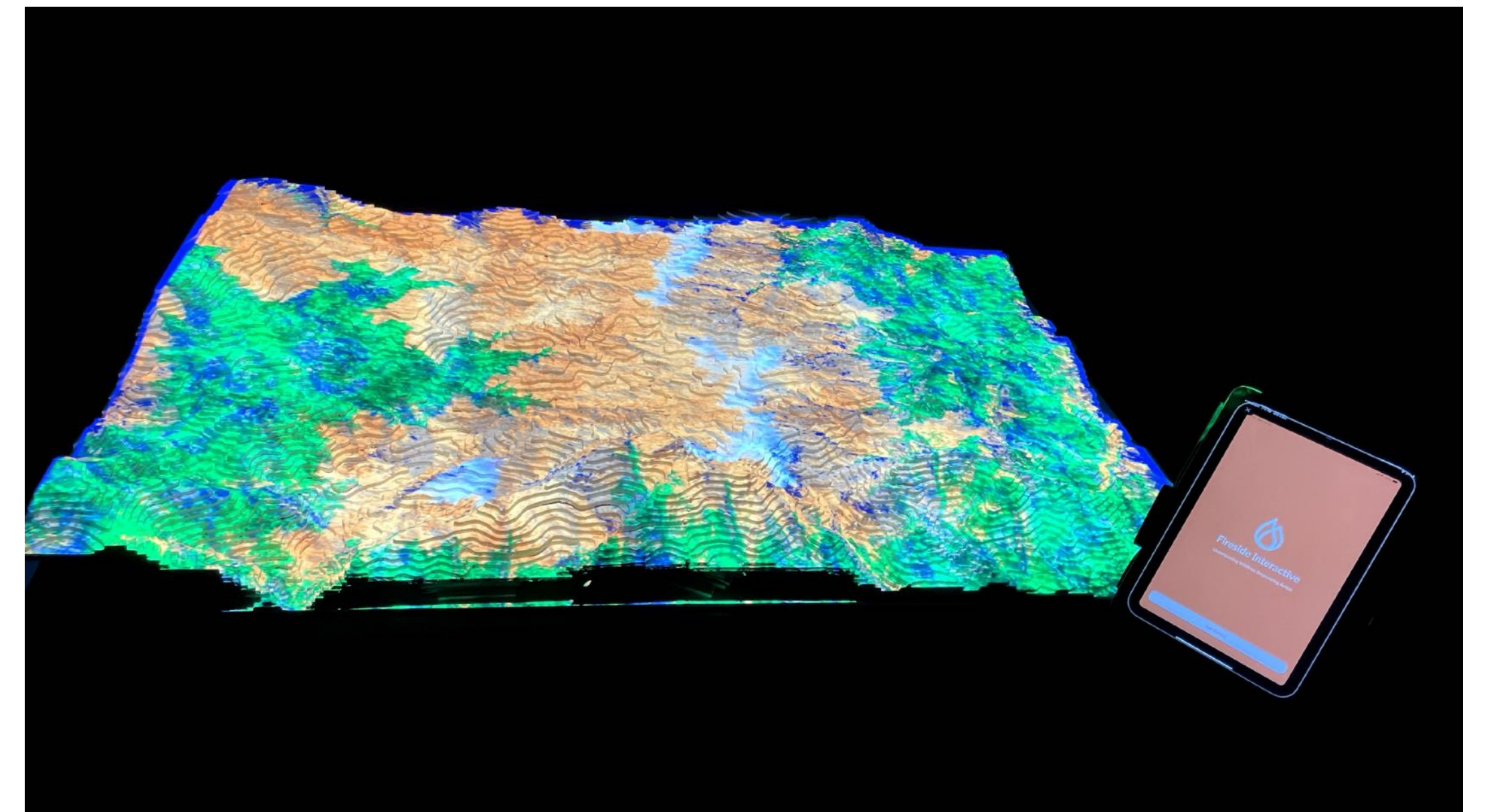
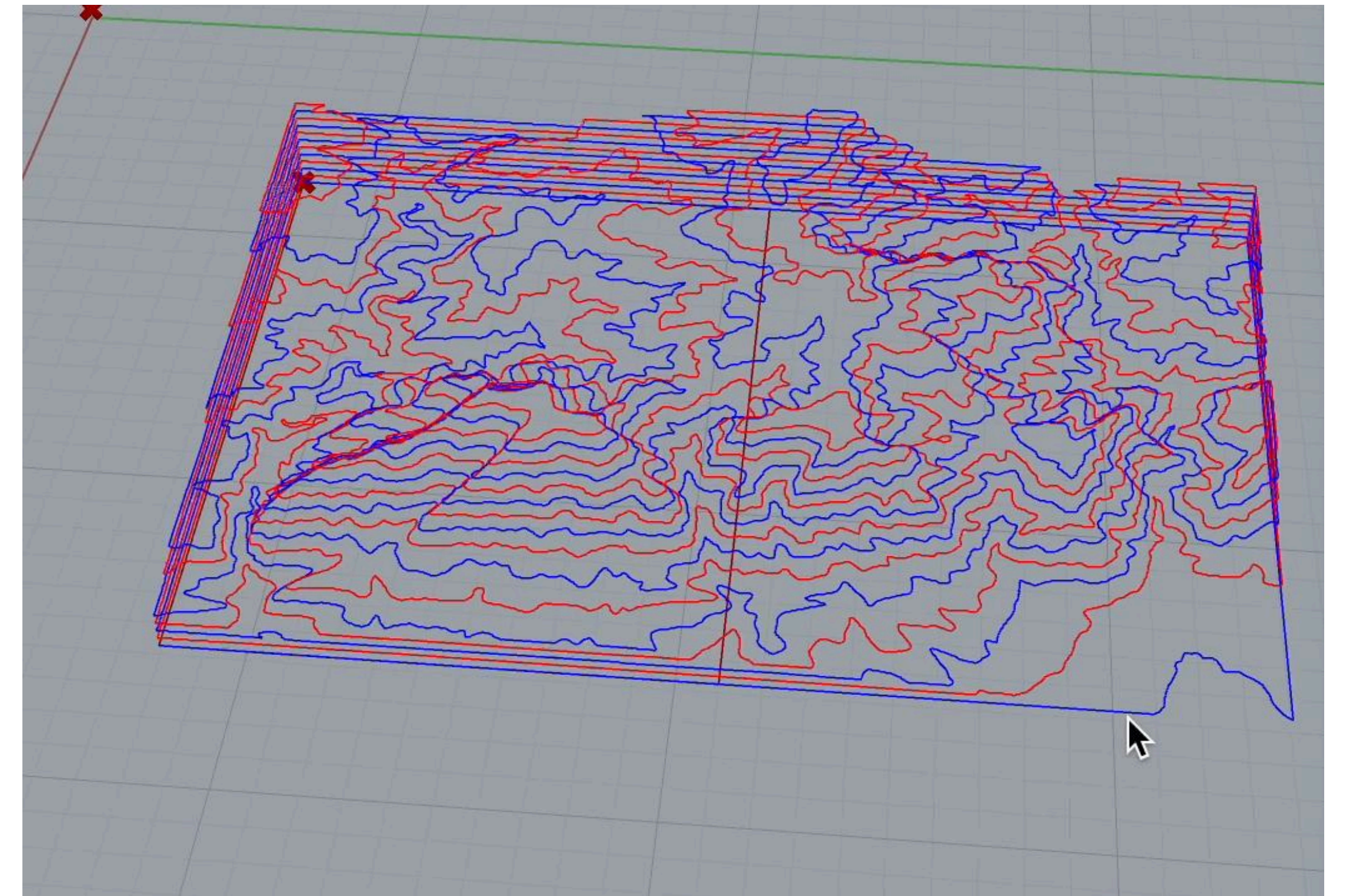
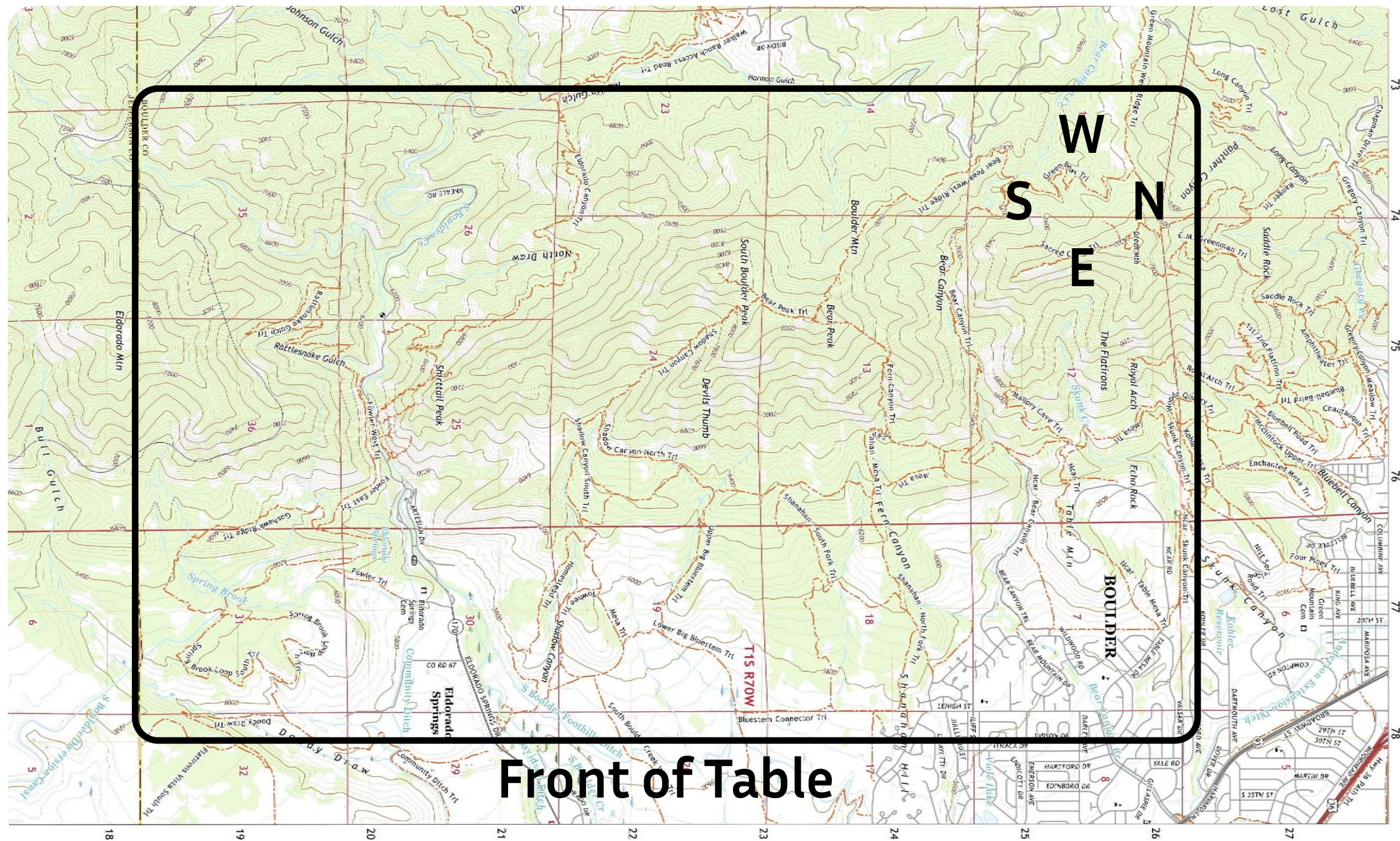


SIMULATION GRAPHICS



INTERACTIVE TABLE DESIGN

The flagstaff section by boulder was chosen because of the imposing presence the mountains exude and that most boulder residents are familiar with that area conceptually.



CONSTRUCTION PROCESS

BUILD ITEMS

- MDF Board
- Plywood
- Wood Glue
- White Paint
- Screws
- Caulk Sealer
- Tablet



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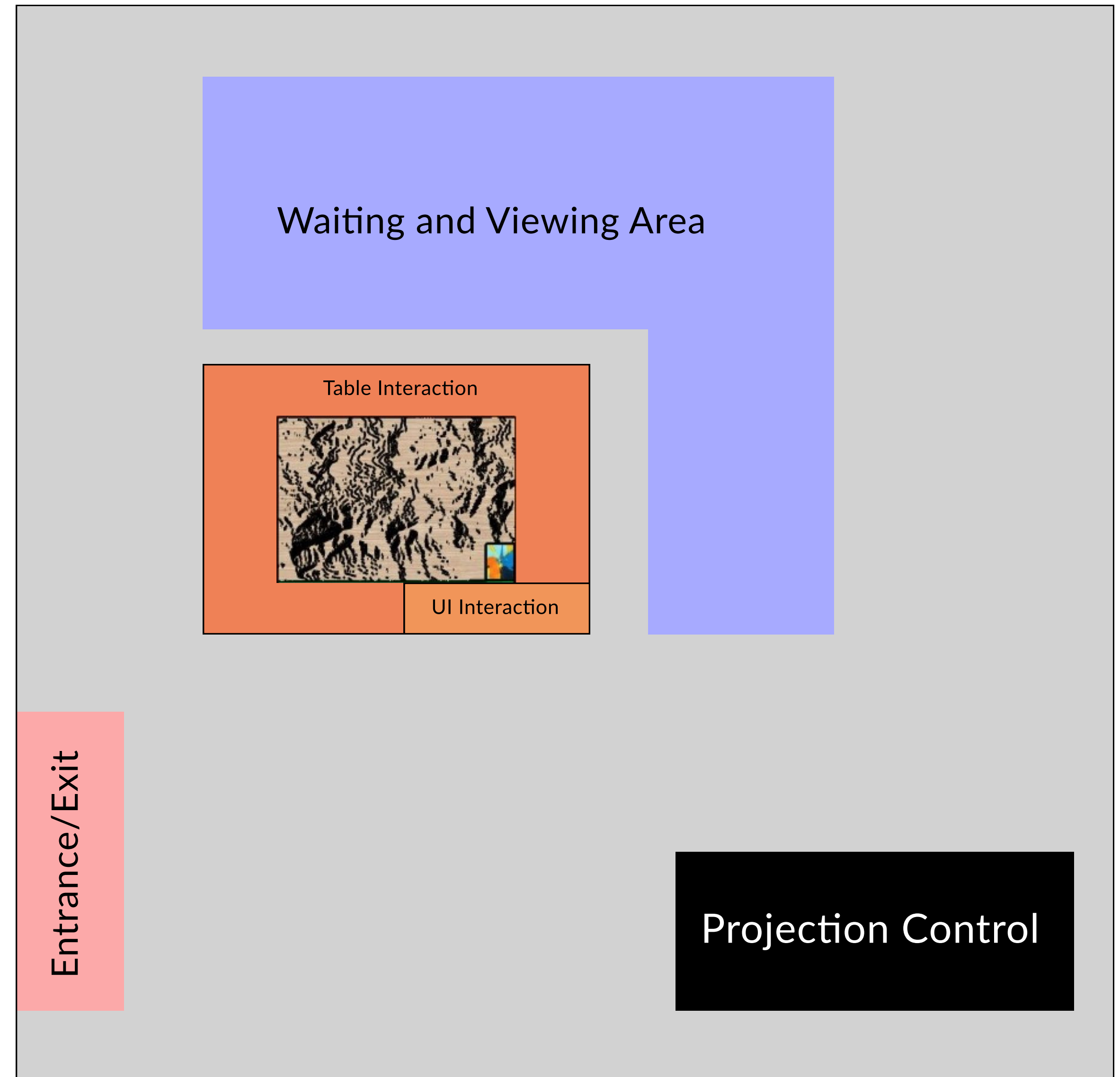
04 Spatial Design and Materials

05 User Experience

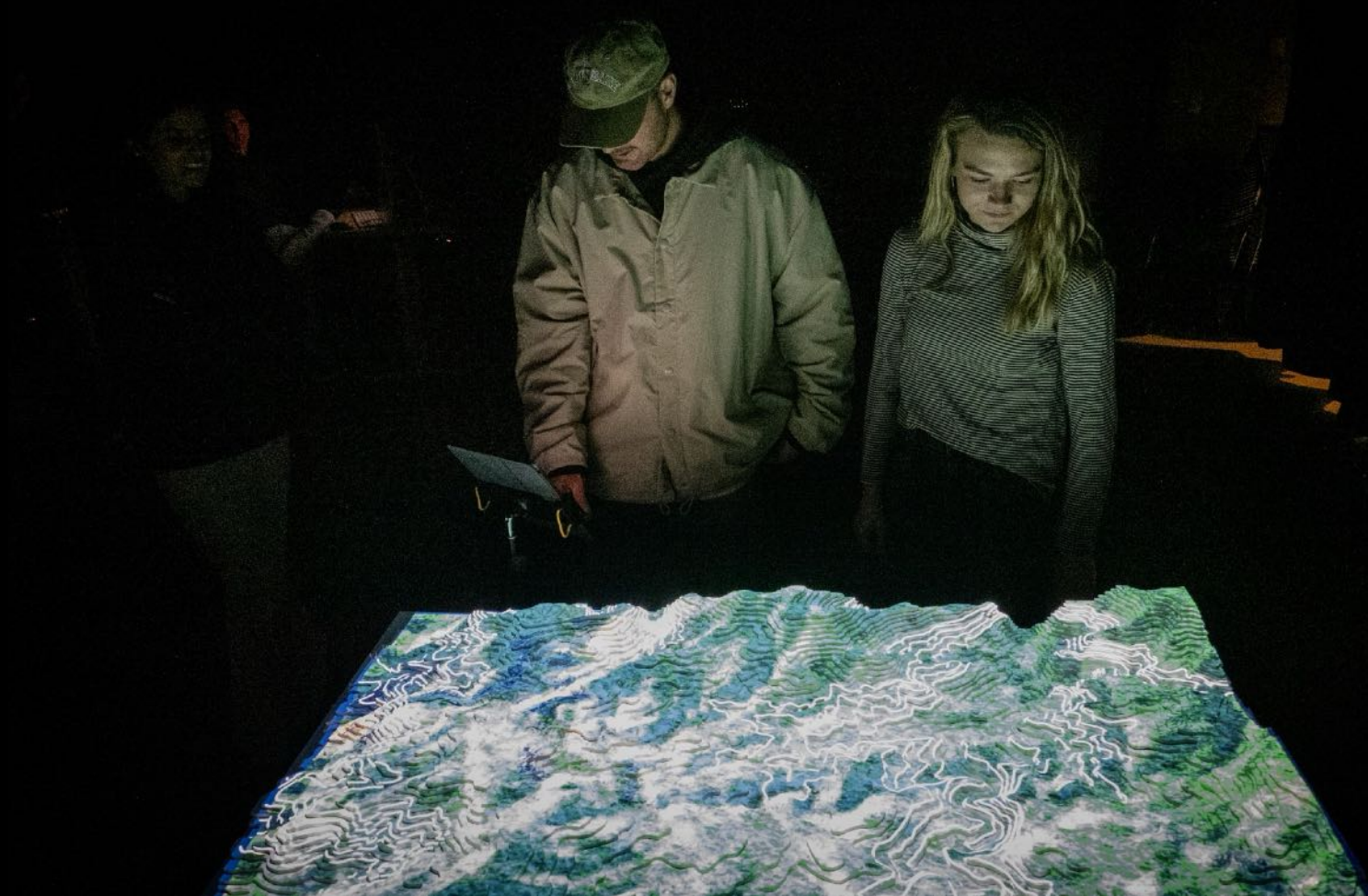
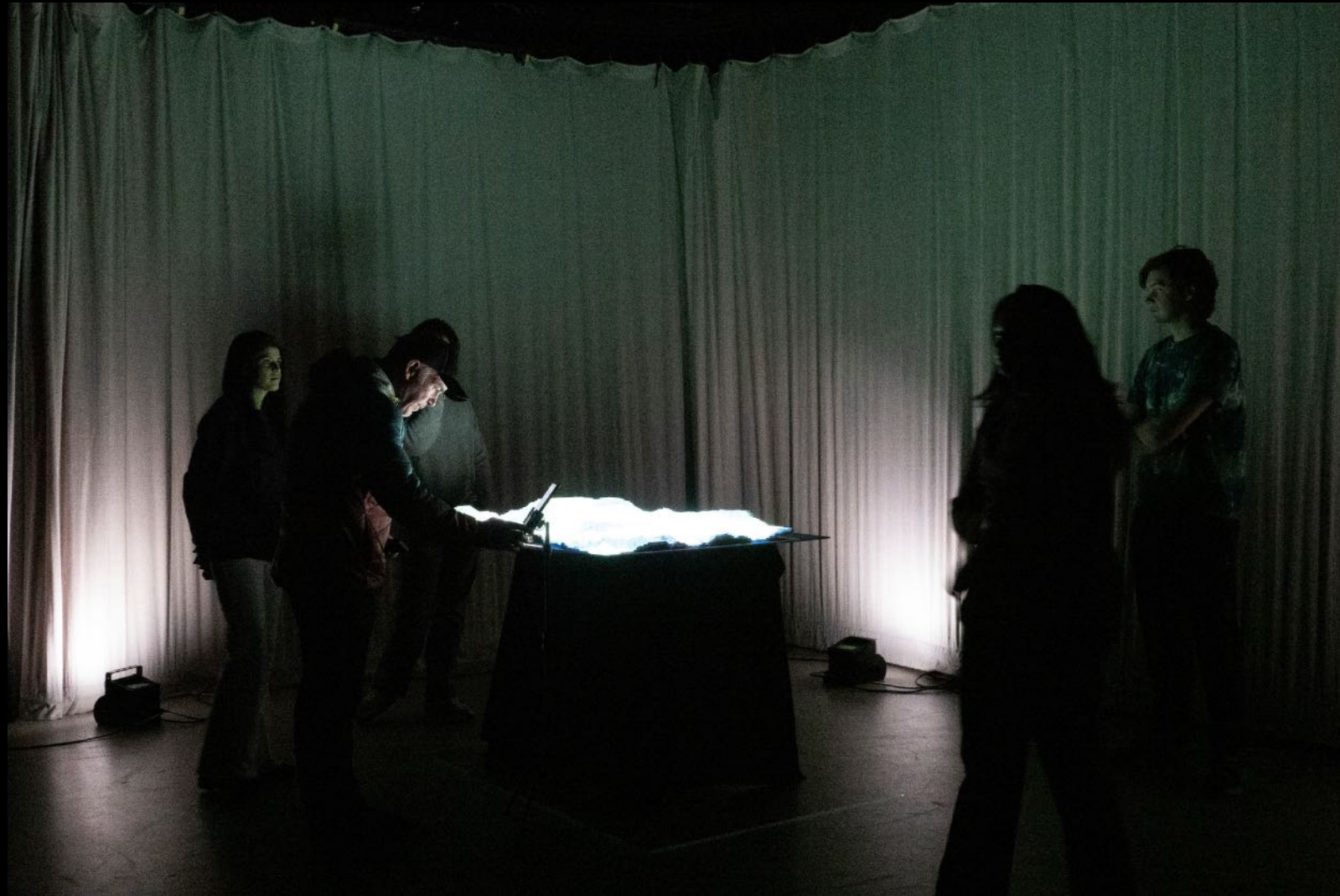
06 Production

THE PLAN

- Users Enter dimly lit room with table in the center
- Users ushered to control table with tablet
- Staff help users navigate UI or any bugs with projection system
- Staff running projection control for interactions



THE SPATIAL VIEW



MATERIALS

BUILD ITEMS	TECH	SOFTWARE
MDF Board Plywood White Paint Wood Glue Screws Caulk Tablet	Laser Cutter Storage Demo Space Projector Camera	Fire Simulation Program (Unreal Engine) Hand Tracking (Python) Projector Mapping (Resolume) Tablet Interface (Framer)

BUDGET

Item	Price
1/4” MDF Board	\$61.05
White Paint	\$15.48
Wood Glue	\$24.98
Calk	\$9.96
Wood Screws	\$1.25
Long Screws	\$11.00
Plywood 2x8	\$24.79

We have currently budgeted \$164.52 out of our allocated \$300

Out of budget about 50% went to different kinds of wood for the topographic table

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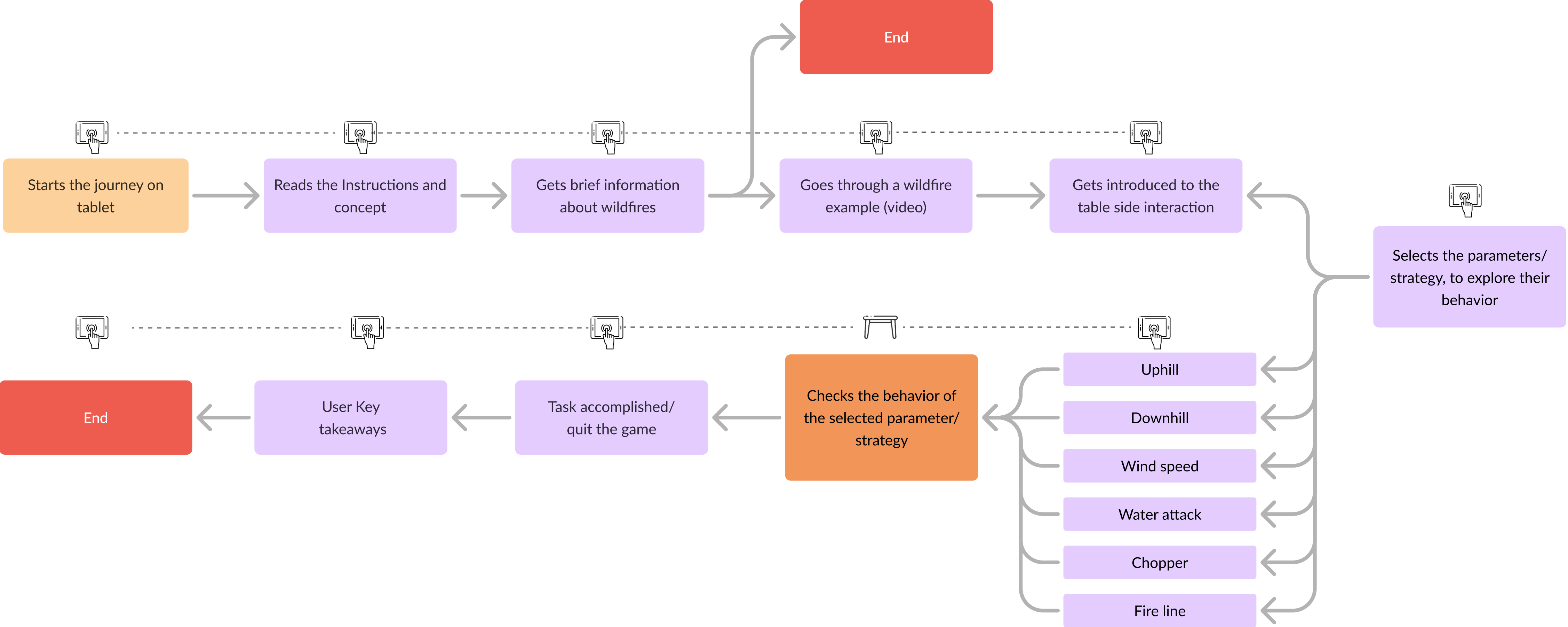
06 Production

USER JOURNEY

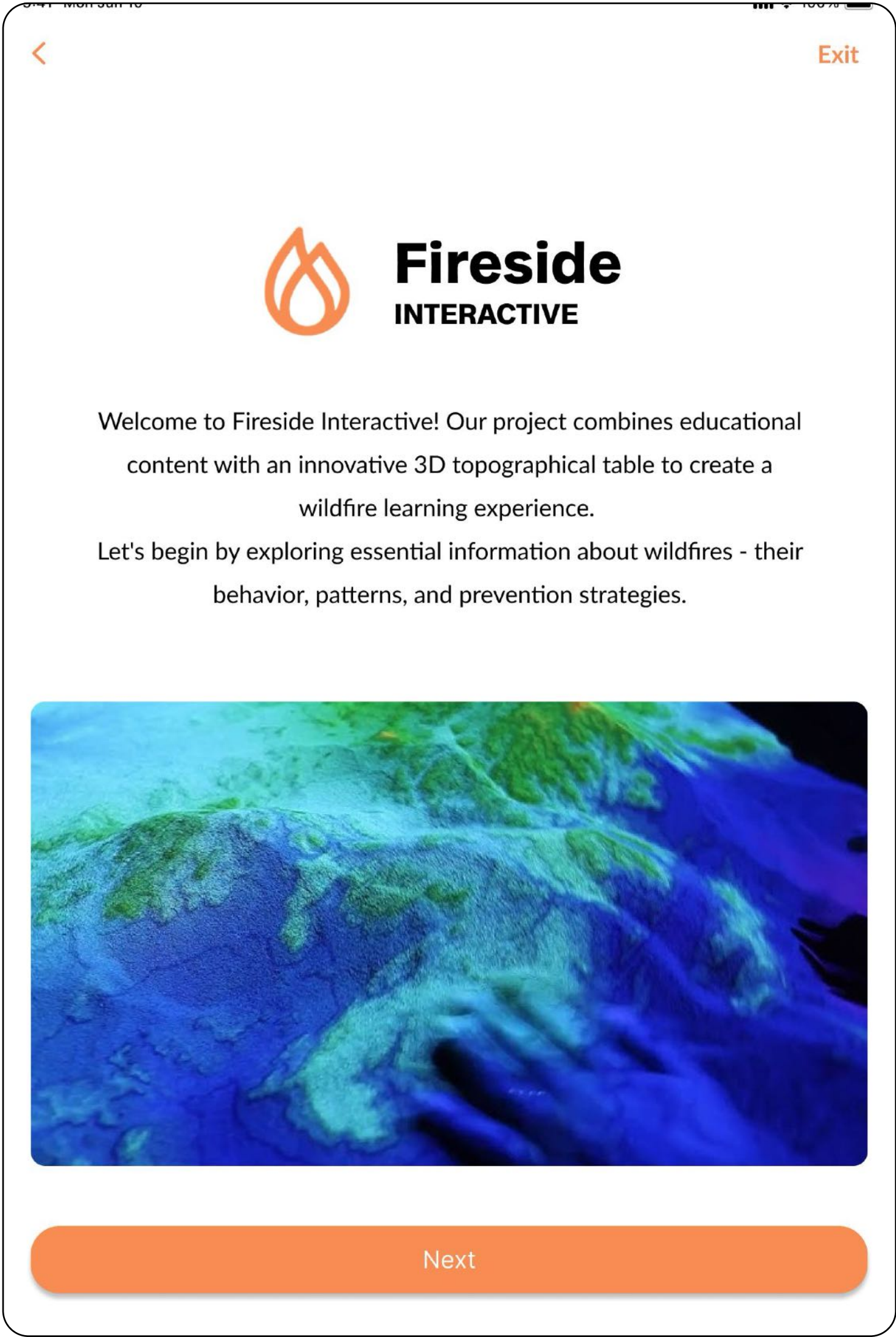
Touchpoints


Tablet


Table



IPAD SCREENS



IPAD SCREENS

9:41 Mon Jun 10100%


<


Exit


Select any option below to view different wildfire simulations

Parameters

Discover how these key factors affect wildfire behavior


Wind Speed


Uphill


Downhill

Mitigation Strategies

Discover how different firefighting tactics combat wildfires

Fireline

Water Attack

Chopper

Next

9:41 Mon Jun 10100%


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Exit


Select the strategy/parameters to view the behavior

Parameters

Discover how these key factors affect wildfire behavior


Wind Speed


Uphill


Downhill

Mitigation Strategies

Discover how different firefighting tactics combat wildfires

Fireline

Water Attack

Chopper

Next

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Exit

Let us see the impacts of wind speed in a wildfire!

Wind Speed

In this simulation, you'll witness how wind dramatically influences wildfire behavior. Watch as increasing winds transform a “small” fire into a rapidly spreading inferno.



Key Characteristics:

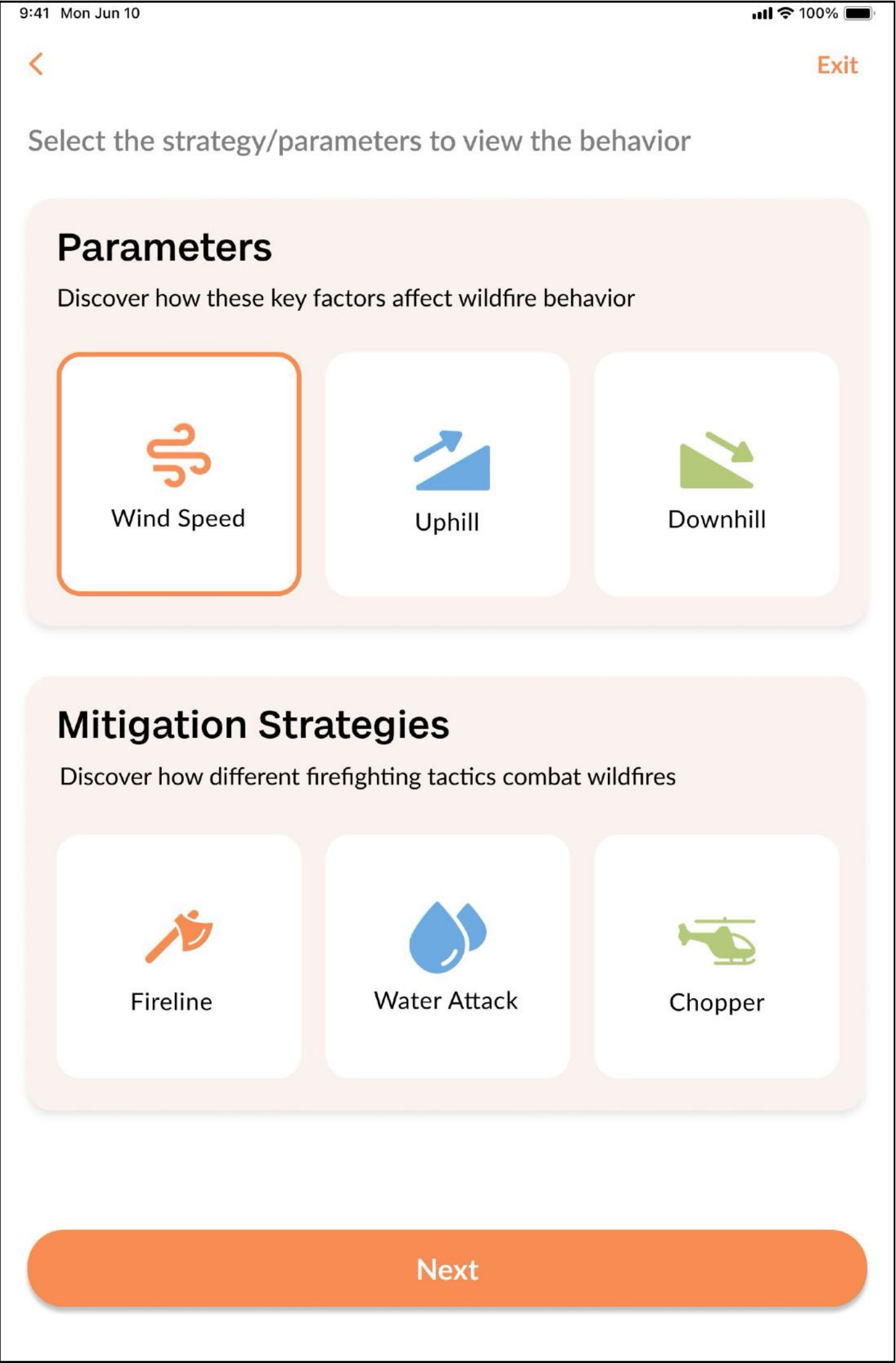
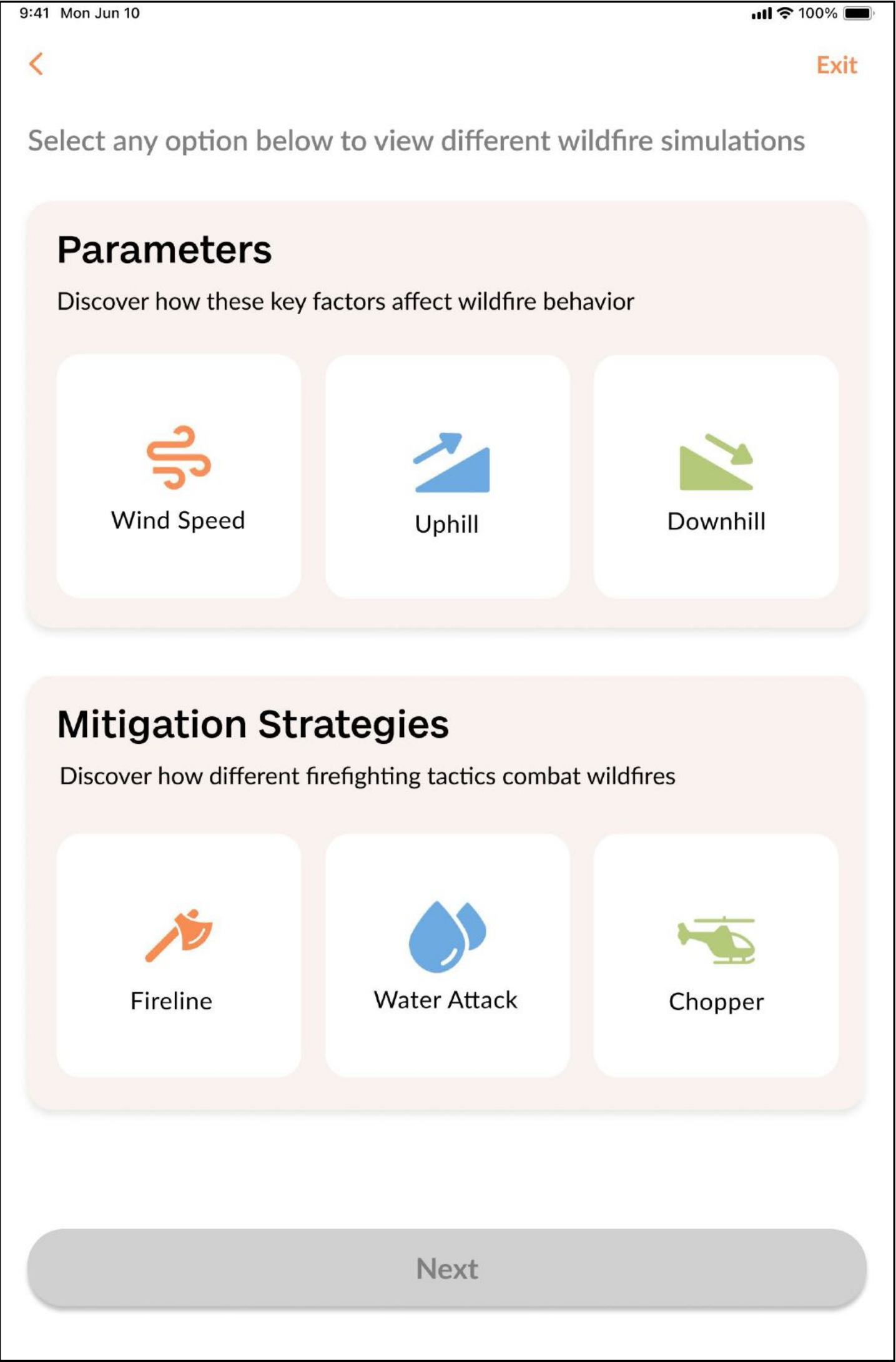
- Controls the speed and direction of fire spread
- Carries burning embers that create new spot fires
- Supplies fresh oxygen that intensifies flames

Explore other parameters by clicking 'Back' button

Finish

Back

IPAD SCREENS



TAKEAWAY

Through a QR code scan included in our tablet screens, users receive a concise guide containing critical wildfire safety information and emergency protocols for the Boulder area.



WILDFIRES

Key Facts, Safety Tips & Action Steps

WILDFIRES BY NUMBERS

In colorado, over 5,000 wildfires occur annually
destroying an average of 200,000 acres of land and affecting both rural and urban communities.

80% of wildfires caused by human activity
including unattended campfires, discarded cigarettes, arson, and equipment sparks.

Firefighting costs in the U.S. exceed \$1 billion annually,
requiring massive resources, equipment, and personnel deployment across affected regions.

KNOW THE SIGNS

Weather conditions that increase fire risk

High temperatures

Low humidity

Strong winds

Extended drought

FIRE TRAVEL PATTERNS

Ways fire moves

Jumping between trees

Spreading in grasslands

Climbing steep terrain

Carrying flying embers

GRAB AND GO

Don't wait - evacuate!

Documents & Money

- ID and insurance
- Medical records
- Cash/cards
- Property documents

Essential Supplies

- Water & food (3-day supply)
- Medications
- First aid kit
- N95 masks

Family Needs

- Pet food & carrier
- Kids' necessities
- Change of clothes
- Comfort items

HOME SAFETY

Take these preventive steps:

- Clear 30-foot perimeter
- Keep gutters clean
- Remove dead plants
- Keep emergency kit ready

WHEN TO EVACUATE

Leave immediately if you:

- See flames or heavy smoke
- Receive evacuation notice
- Feel Unsafe
- Smell unusual smoke

DURING EVACUATION

Remember these critical steps:

- ✓ Stay calm and focused
- ✓ Follow official routes
- ✓ Keep car windows closed
- ✓ Help neighbors if possible

EMERGENCY CONTACTS

- Emergency: 911
- Boulder Fire- rescue: (303) 441-3050
- Colorado Emergency Operations Line (303) 279-8855
- Red Cross: 1-800-RED-CROSS

By understanding the causes, consequences, and preventive measures associated with wildfires, we can work together to minimize their devastating impact.
Sign up for BOCO emergency alerts texting "BOCOinfo" to 888777.

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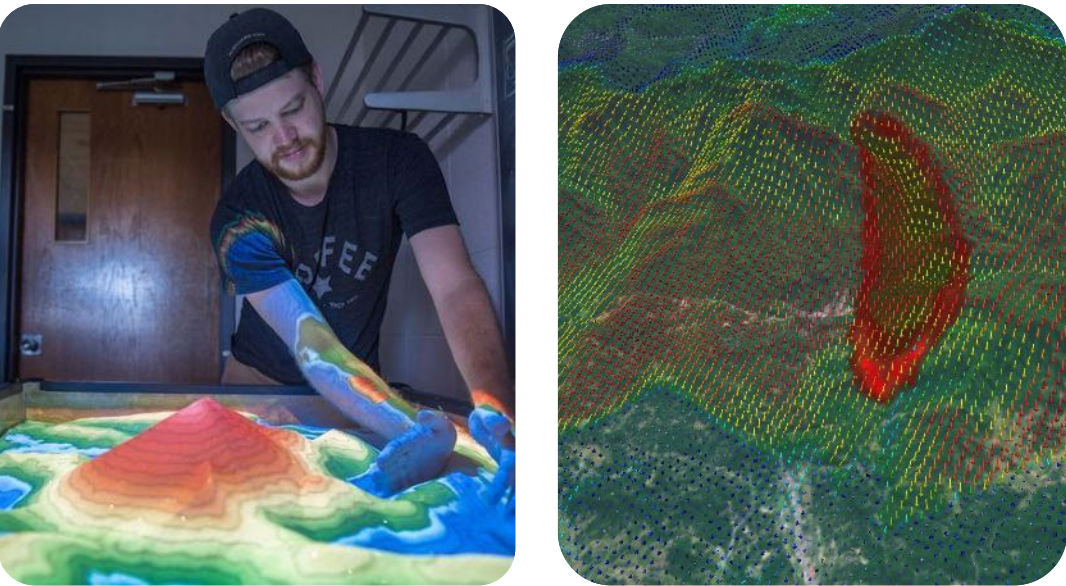
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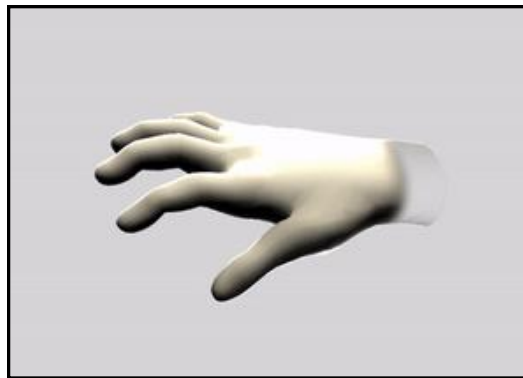
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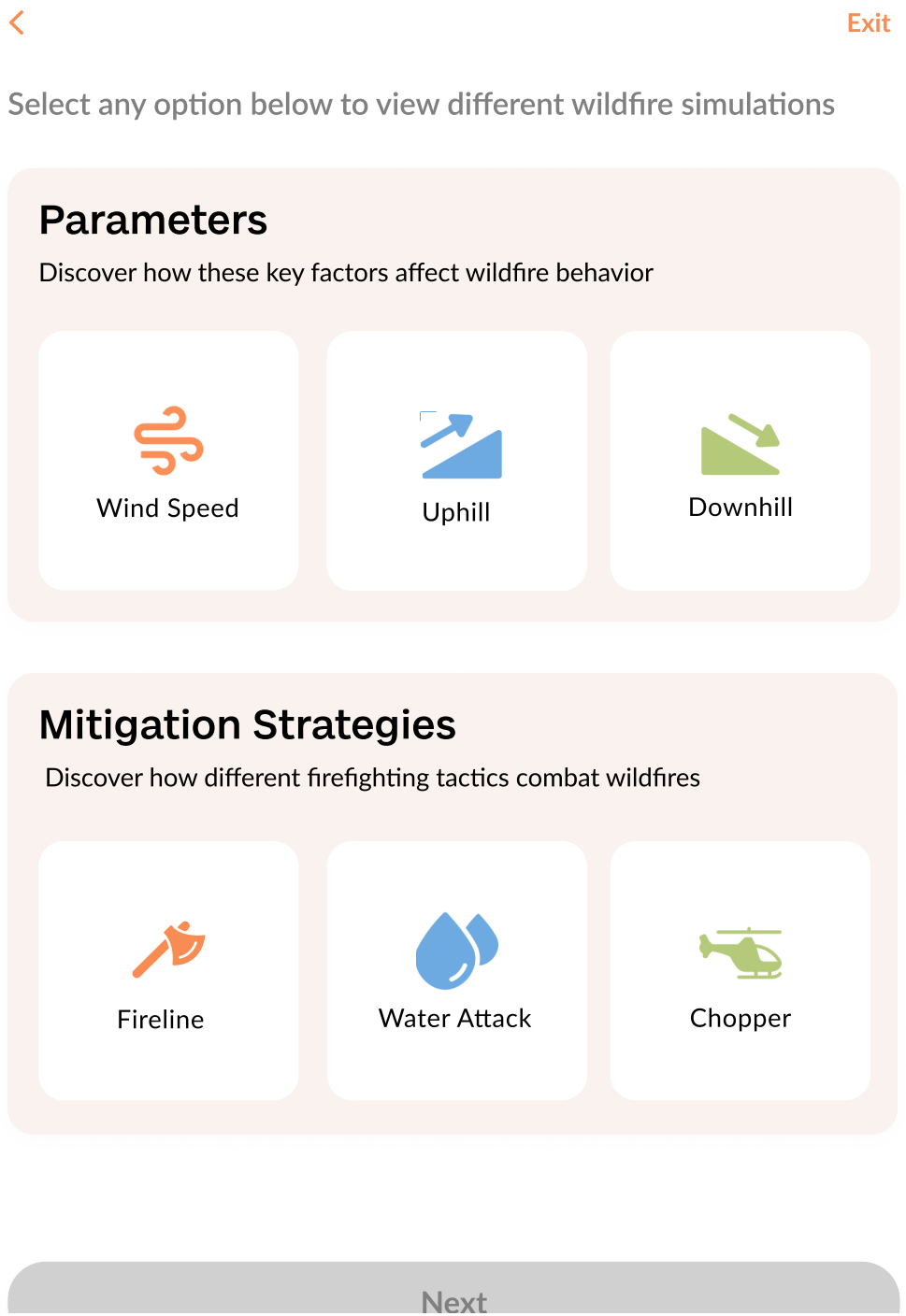
TIMELINE



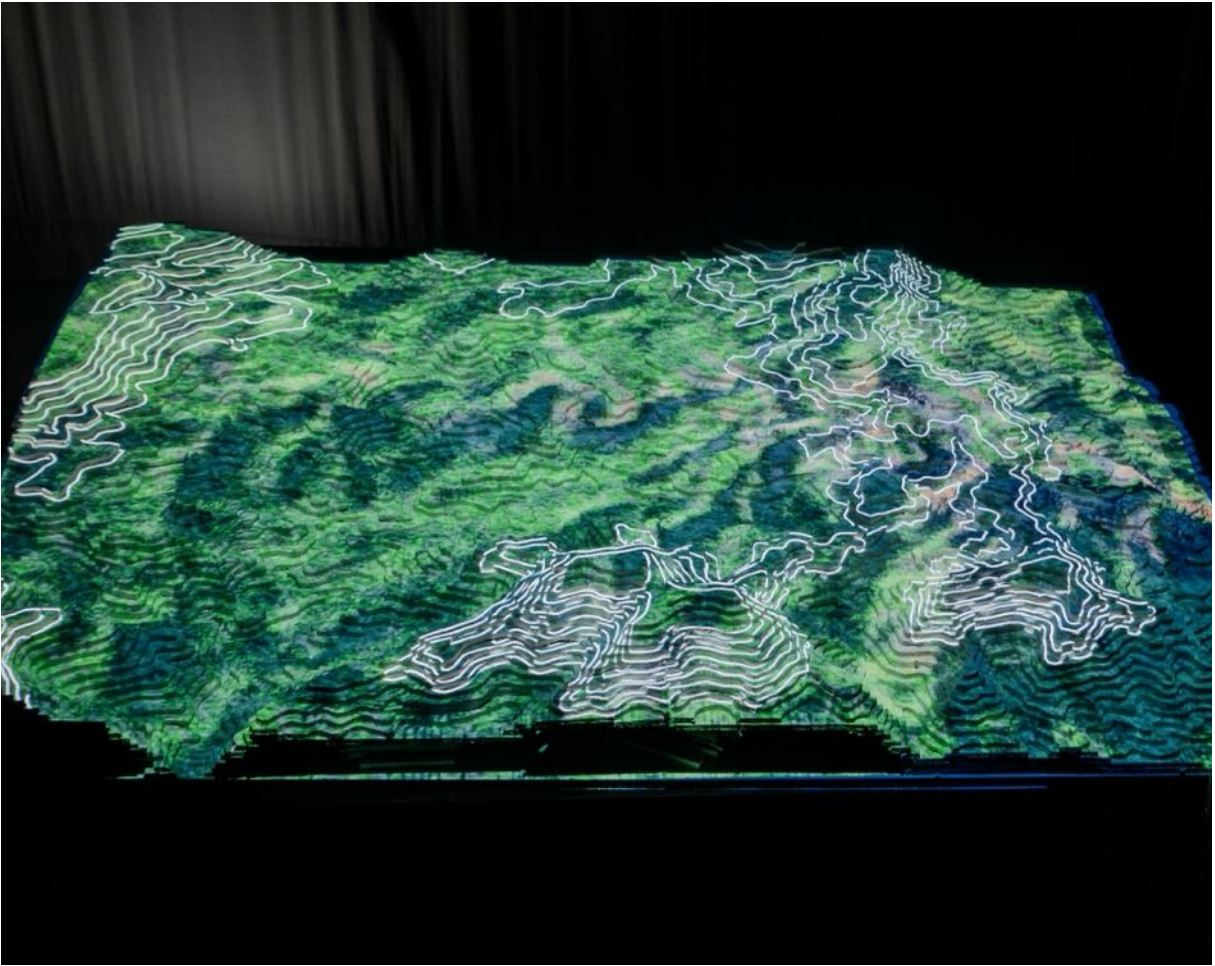
Concept Development and Research (Week 1-4)



Initial Design and Prototype (Week 5-8)



Integration and Implementation (Week 9-14)



Finalization and Presentation (Week 15-16)

MOVING FORWARD: KEY DEVELOPMENT AREAS

Partner with fire
researchers to enhance
simulation accuracy

Collaborate with first
responders to improve
public outreach

Develop a scalable package
system for wider
implementation

Establish permanent
installation opportunities

Thank you!

Questions?

