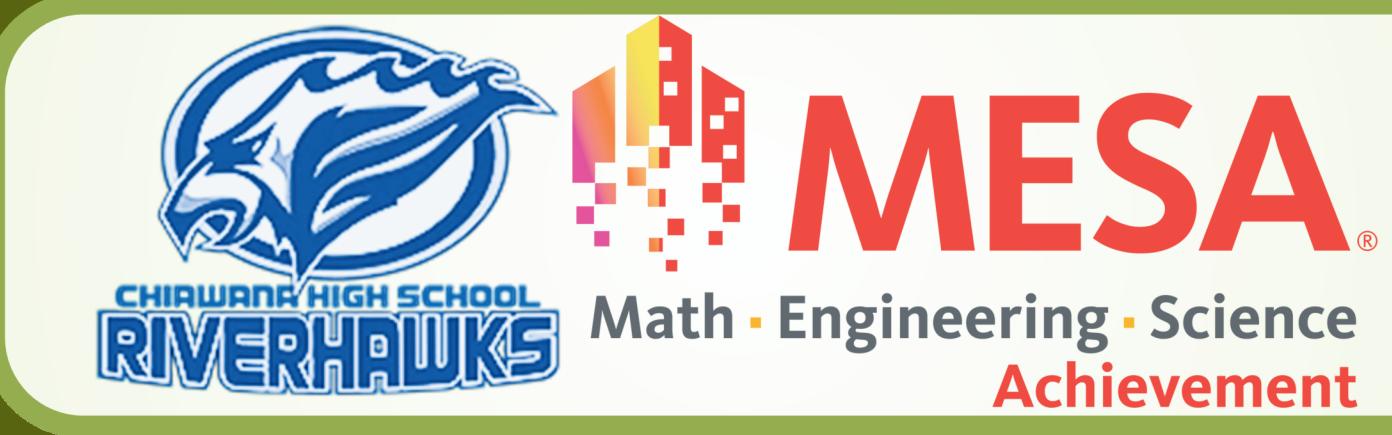


Kitty Katcher: A Kinder, Gentler Cat Trap

Soleil Olivera, Ryan Abastillas, & Bradley Caulfield
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Washington MESA

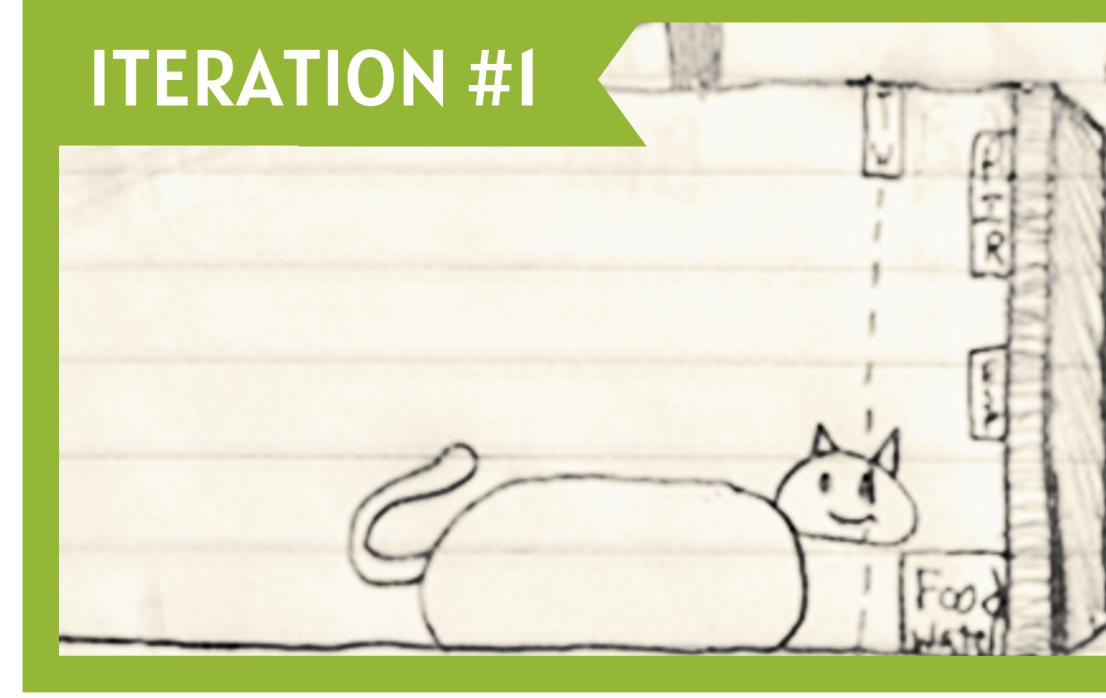


PROBLEM STATEMENT

Our prototype aligns with UNSDG-15.8 (reducing invasive species) and addresses the economic and ethical inequities that Tri-City Trap-Neuter-Release (TNR) organization volunteers face by offering an affordable and humane cat trap.



DESIGN PROCESS



Notice & Empathize:
Observed our teacher, Mr. Albertsen's struggles with a cat colony, where he pointed out concerning number of strays in Tri-Cities



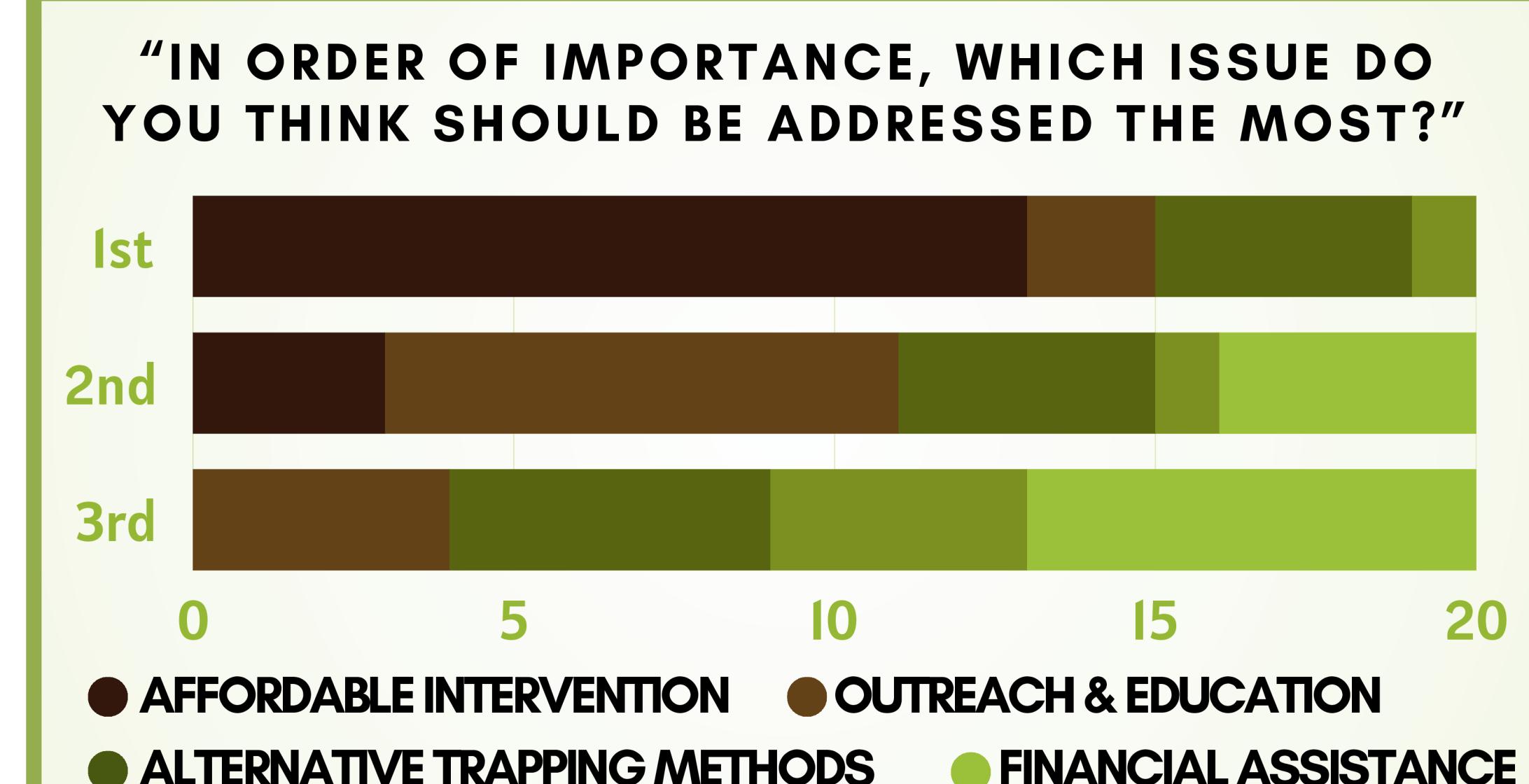
Define & Ideate:
Interviewed several TNR-related organizations, found that the biggest challenges were:

- Funding
- Spreading awareness
- Efficiently trapping cats

Design & Create:
Hefty feedback pushed us to develop a gentler cat trap that prioritized cat's safety and reduced stress for handlers. Mrs. Huddleson (2) informed us that darkness soothes cats, making the handling process easier

Evaluate & Improve:
With durability tests and more user feedback, concluded that trap was effective, but needed stronger materials. Mr. Taylor (3) suggested using durable plastic

VISUAL DATA 1



Of the 20 volunteers from various organizations, over half of them expressed that affordability was their biggest challenge, which inspired us to make this prototype as cost-efficient as possible.

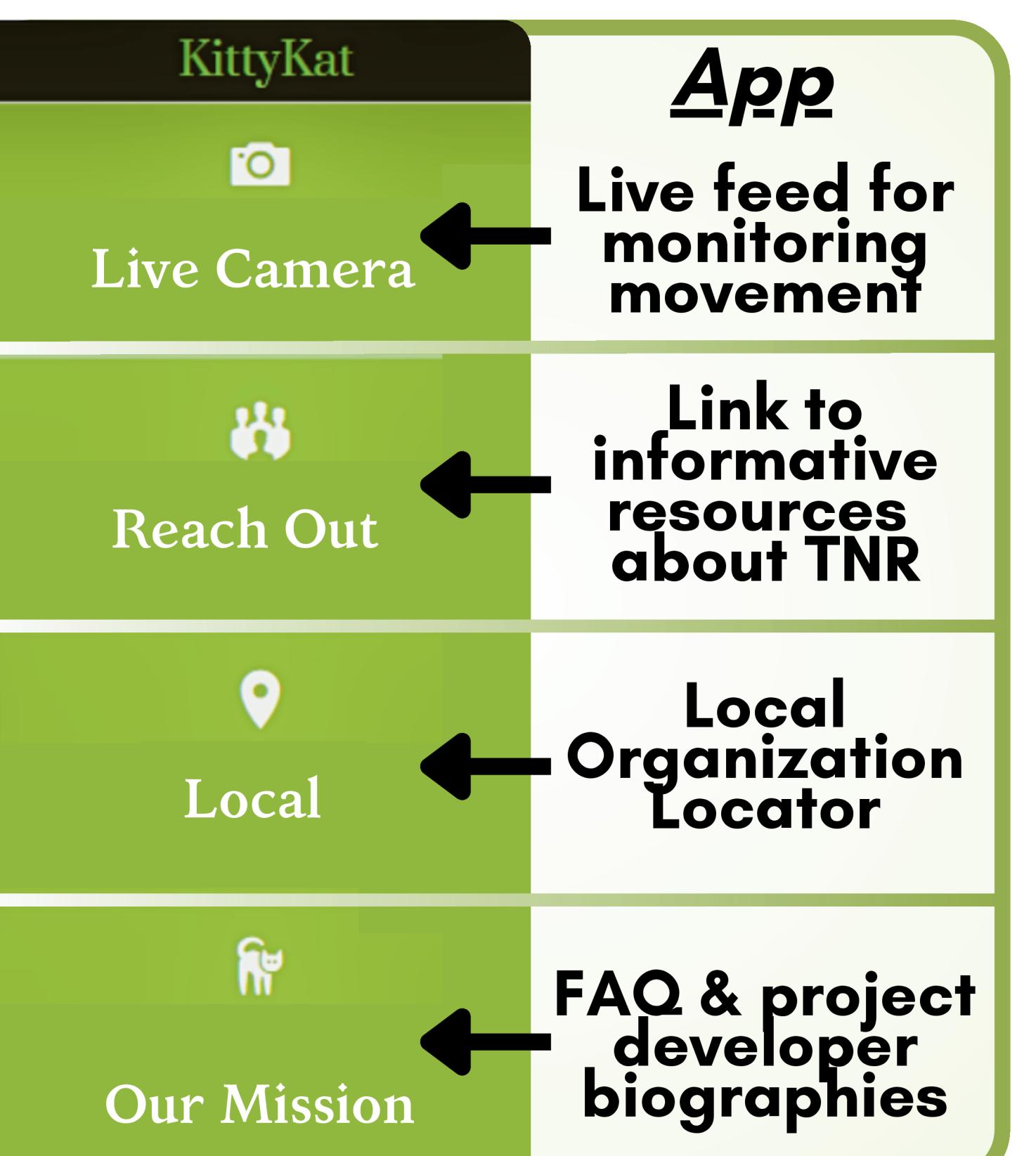
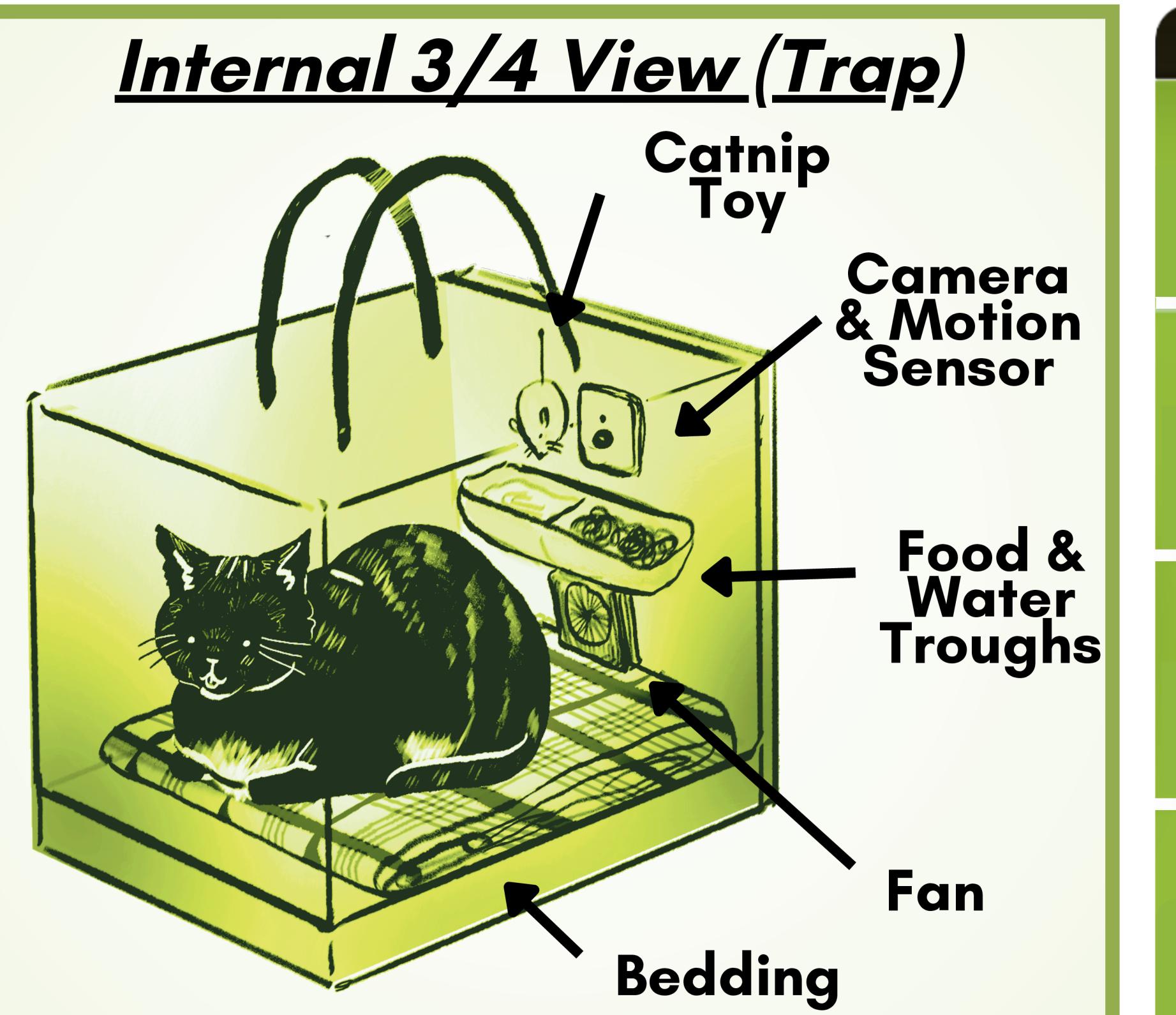
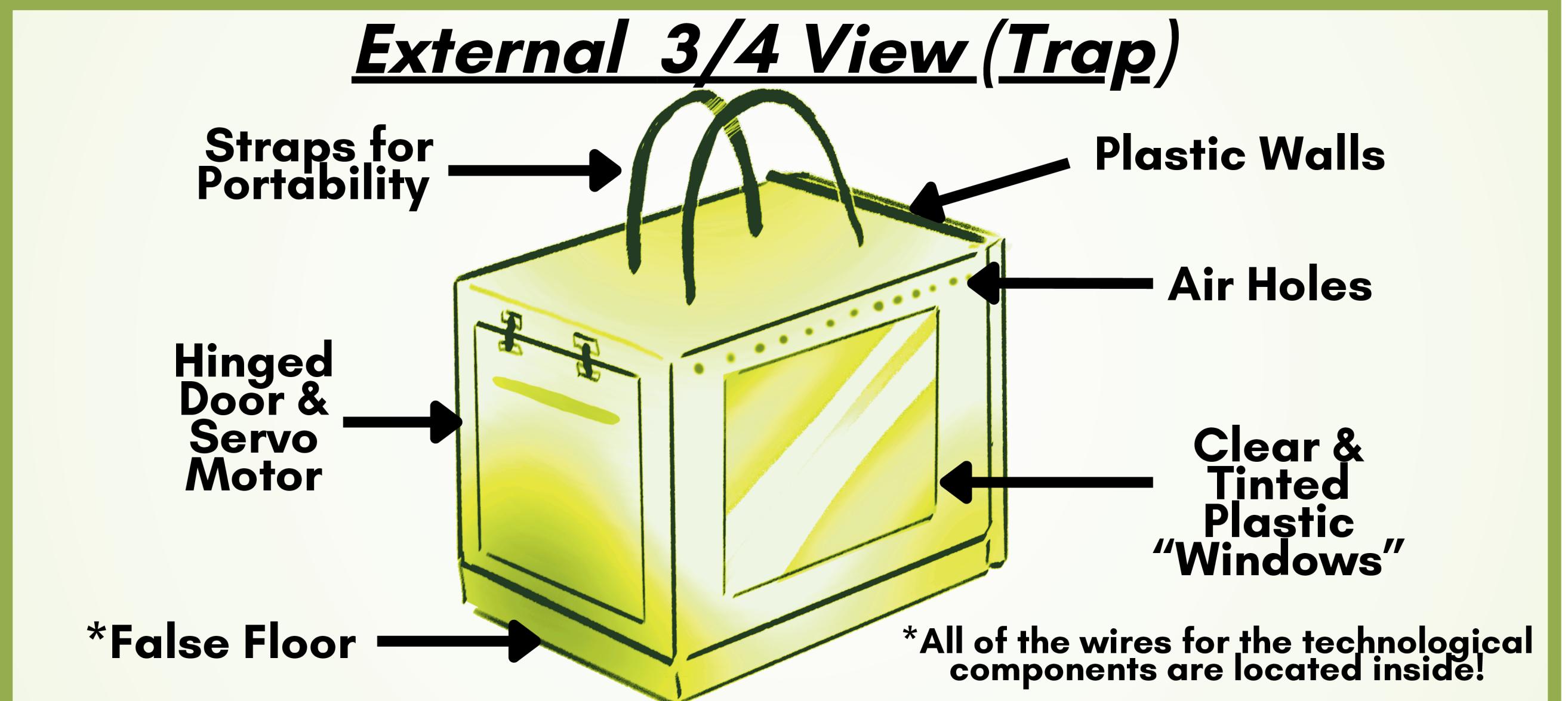
PROTOTYPE & PROTOTYPE DETAIL

ITERATION #3

How it Works

1. Cat enters the cage
2. PIR Motion Sensor checks for motion 3 times
3. Fan turns on, door locks, and alert is sent
4. Cat enjoys the food, fan, and toy until the handler comes to retrieve them

Meeting the User's Economic Inequity.



USER REQUIREMENTS

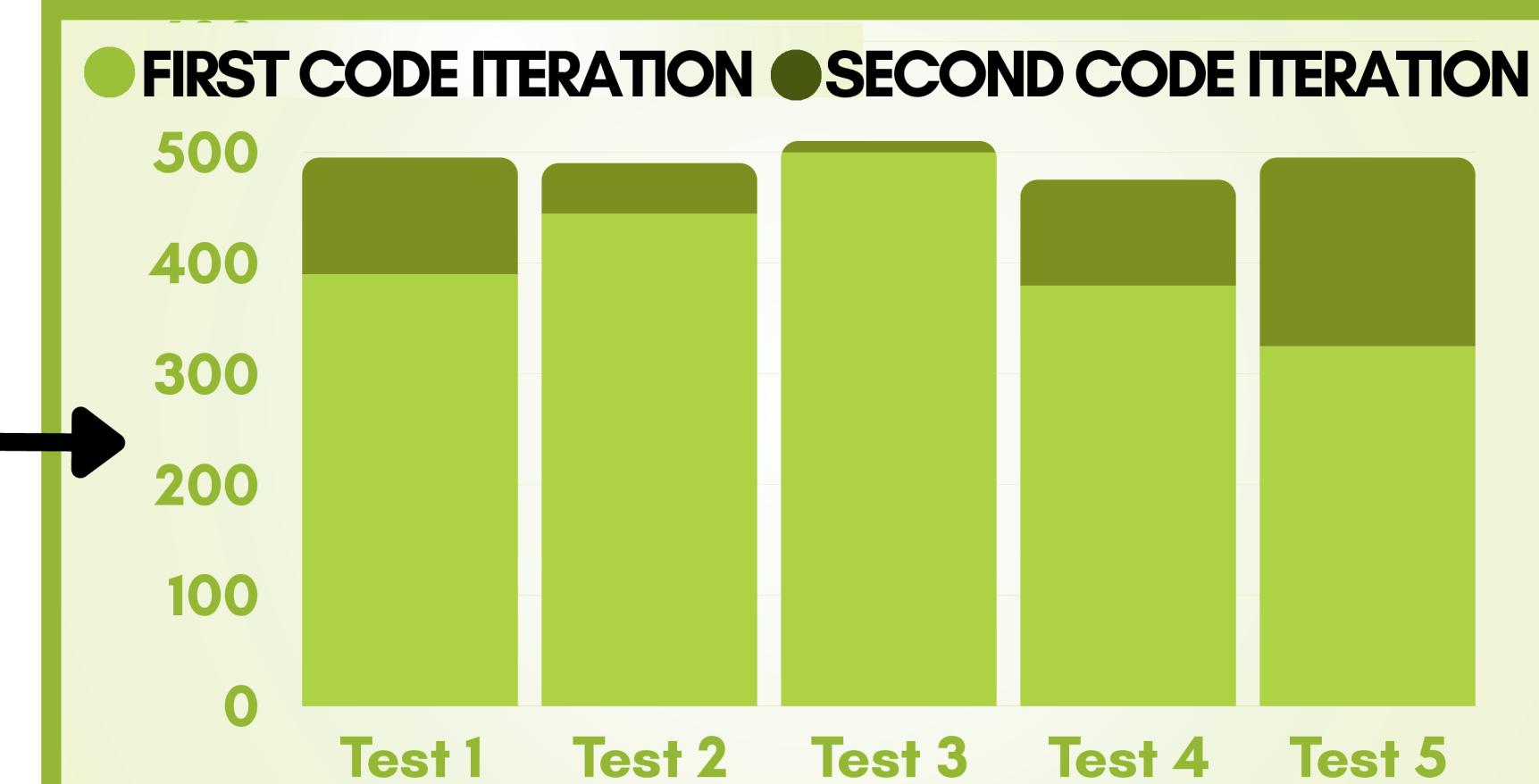
After interviewing volunteers from various Tri-City TNR organizations, we based the prototype on the following needs:

USER NEEDS (EXPLICIT)	PROTOTYPE NEEDS (IMPLICIT)
Reduced risk of injury to handlers	No wire cages for cats to scratch through
Spreading public awareness on importance of neutering	Links to community forums & organizations on app
Ease of use for trap	Simple instructions for the non-tech-savvy

TESTING PROCESS & VISUAL DATA 2

We analyzed the serial readings of the motion sensor to see how accurately it would detect cats once they enter the trap
irregularity = lower accuracy

By fixing the sensitivity in the second iteration, the readings became consistent, meaning more accuracy in cat-detection



OBJECTIVES

ELEMENT	DESCRIPTION	FACTORS
APP	Primary: Free & public app Secondary: Minimalist interface	<ul style="list-style-type: none"> Accessibility Straightforward navigation
USER	Primary: Gentler trapping mechanism Secondary: Including informative resources about tnr-programs	<ul style="list-style-type: none"> Provides cat comfort and stimuli Encourage community involvement in TNR
PROTOTYPE	Primary: Simple Instructions Secondary: Affordable	<ul style="list-style-type: none"> Easily Resettable Sturdy AND cost-effective materials

RESULTS

KittyKatcher helps Tri-City citizens efficiently manage cat populations while reducing ethical and economic inequities through:

- Affordable Materials: Allowing funds to be allocated towards neutering intervention
- Preventative Measures: Decreasing cat populations before overwhelming shelters and necessitating euthanasia
- Spreading Awareness: Empowering the public to take preventative action by bringing them into the TNR process

CONCLUSIONS

Our affordable yet innovative cat trap is equipped with more humane features, helping TNR nonprofits crack down on cat overpopulation in ways that are more ethical, and cost effective. We plan to refine our prototype by creating:

- A database of strays and lost pets through AI software
- Notification system letting people in the surrounding area know when a cat has been captured
- A website streaming the live footage for the community to donate money

CITATIONS

- Dutcher, Pias, Sizemore, Vantassel et al. October 2021, "Free-ranging and Feral Cats" [Government Report]
- Devyn Huddleson, April 11, 2025, Pendleton Animal Welfare Shelter (PAWS) Office Assistant [Interview]
- Kyle Taylor, April 13, 2025, owner of Cattitude Trap-Neuter-Vaccinate-Release (TVNR) [Interview]

