

# Research Portfolio

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(Concentration: Mass Behavior)

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Portfolio Intro



## Introduction to Me

- A little bit about me and the way I work
- Slide Number: 4-7



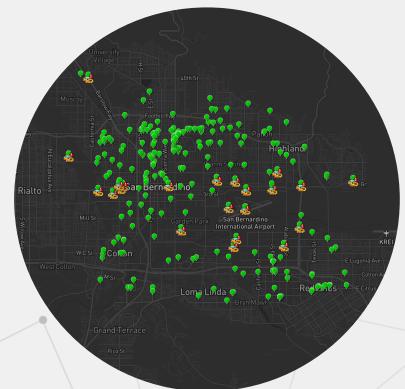
## Project 1: Voter Engagement

- A little bit about me and the way I work
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- A little bit about me and the way I work
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## Project 3: Amazon Truck Routing Optimization

- A little bit about me and the way I work
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# 01

# INTRODUCTION



## Me: A Short Work History

I am a **political scientist** specialized in demographic research and behavior study.

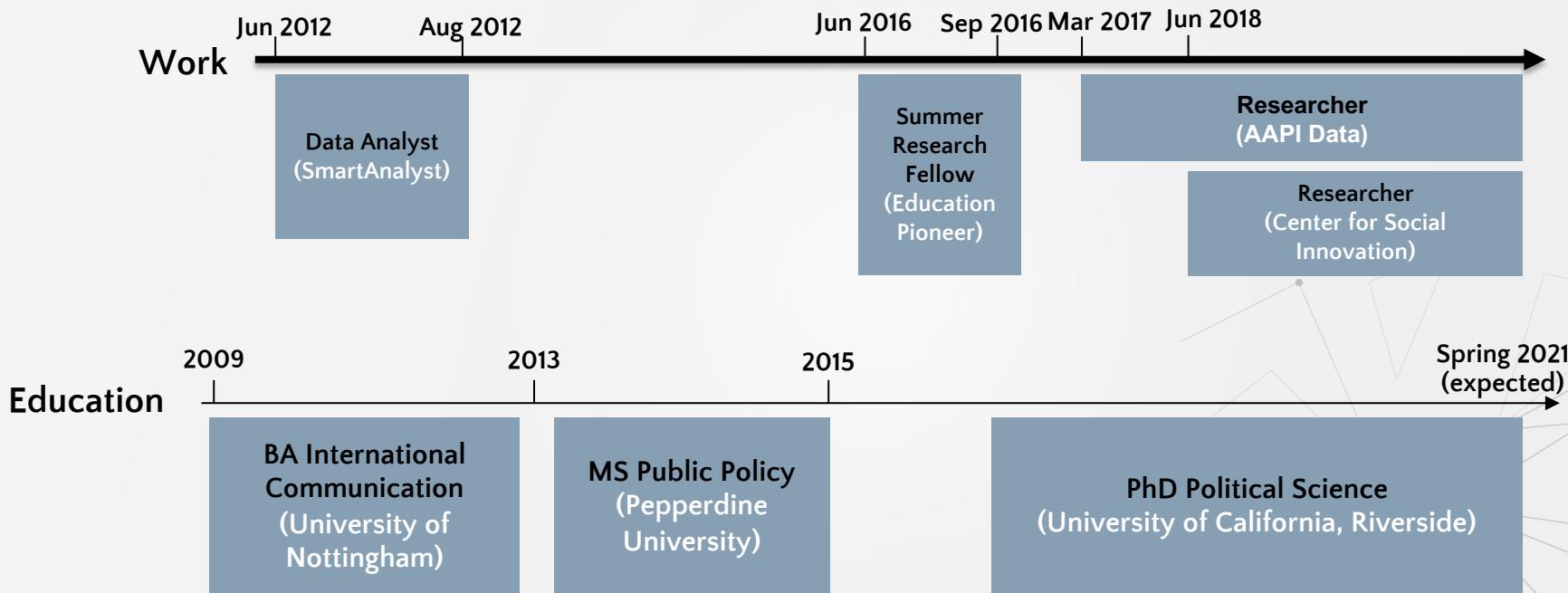
I am trained at **UC Riverside** and have had the opportunity to work for high-profile government agencies and companies that include **Amazon, California Governor's Office** and **AARP**. Through my research work at Center for Social Innovation and AAPI Data, I was also able to provide consultancy work for **Washington State Commission, Esri**, and **the Census Bureau**.

Over the years, I have worked on projects including: Amazon truck routing optimization, California official voter engagement messages testing, demographic profiles of targeted social groups by detailed geography.

I have led over **hundreds of survey projects** and have designed and programmed **20 data visualization tools**.



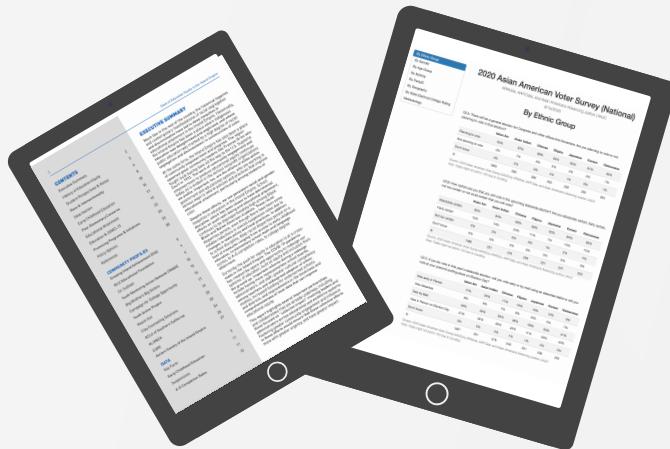
# My Journey





## How do I work?

I am the lead researcher at the Center for Social Innovation, where I manage **all stages** of the projects: from initial storyboarding, survey/study design, data manipulation & analysis to final report and data visualizations (static and interactive).

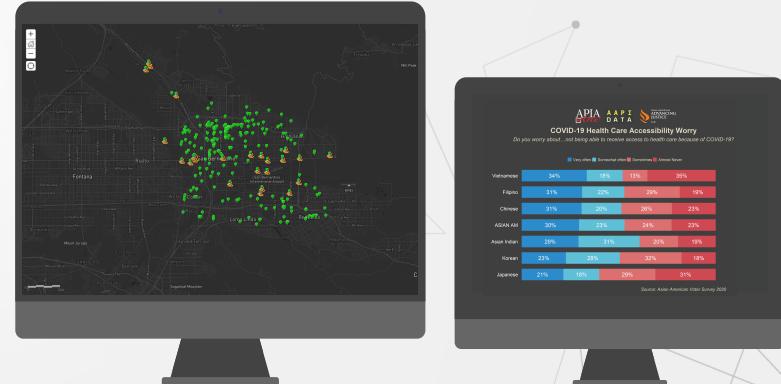


Discover

Design

Analyze

Deliver





# What methods do I use?

Many social science studies share common methods with UX research. Both types of research focus on individual-level opinions, motivation, and behavior. I choose the most appropriate method based on the stakeholders' objectives and research questions we are trying to address.



In-depth Interview



Persona Creation



Quantitative Analysis



A/B Testing + Advanced Experiments



Focus Groups



Natural Language Processing



Mix-methods Research



Advanced Survey Methodology

## Case Study 1

# QUALITATIVE PROJECT

## California Low-Propensity Voter Engagement



# Project Overview

## ■ Motivation

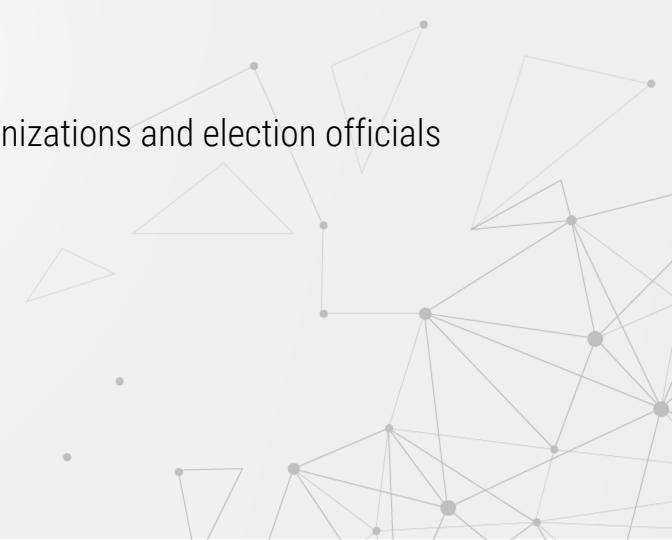
- Voting in California changed in November 2020, so outreach should change with it

## ■ Objectives

- Assess needs for low-propensity voters in November 2020
- Probe awareness of voting options and voting mode preferences
- Explore messages that motivate and inform
- Deliver recommendations to a larger ecosystem of community organizations and election officials

## ■ My Role

- Developed screener survey for focus groups participants
- Drafted focus groups scripts in both English and Mandarin Chinese
- Moderated focus groups (each with 15-18 participants)
- Analyzed and presented key observations and recommendations





## Case 1: Focus Groups

### RESEARCH QUESTIONS

- To what extend do low-propensity voters need targeted outreach to explain the options to vote?
- What elements of outreach messages and voting regulations are essential to encourage voting participation?

### TIMELINE

Mid-June:  
Building community  
advisory group

End-June/Early July:  
Recruit focus group participants  
Screener survey, Zoom primers

Mid-July:  
Conduct focus groups

End of June:  
Train-the-trainer sessions

Early July:  
Craft custom focus group  
guides

End of July:  
Report with full findings

### LIFECYCLE

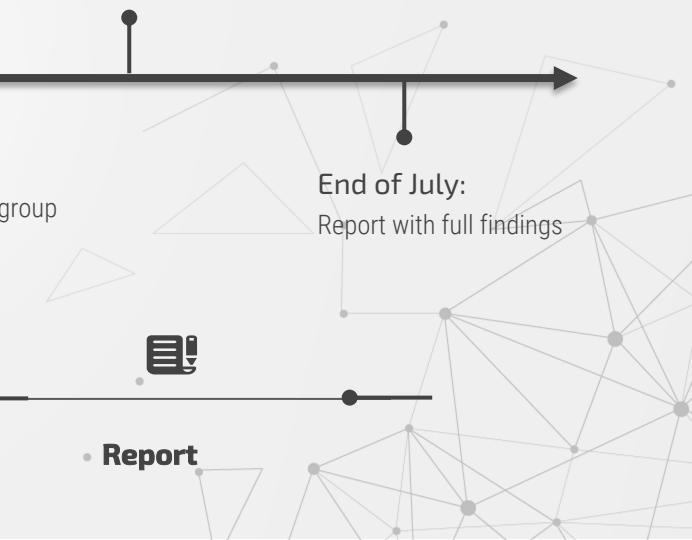


Participant  
Recruitment

Screener Survey

Focus Groups (15 x 7)  
Advisory Group

Report





# METHODS

## SAMPLING

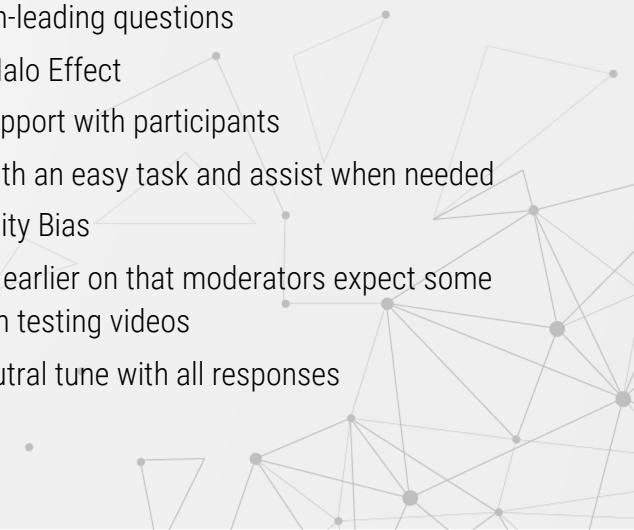
- In general, snowball sampling may recruit participants who are not representative of all low-propensity voters
- By collaborating with experienced community organizations and state & county offices, we improve the internal validity of our sample selection

## SCREENER SURVEY

- Collect demographic information of participants for persona development
- Capture participants' voting experiences before the focus group

## ADDRESSING ISSUES WITH FOCUS GROUP INTERVIEWS

- Hawthorn Effect
  - Compare results with the screener survey
- Confirmation Bias
  - Use non-leading questions
- Primacy Bias/Halo Effect
  - Build rapport with participants
  - Start with an easy task and assist when needed
- Social Desirability Bias
  - Explain earlier on that moderators expect some errors in testing videos
  - Use neutral tone with all responses





## Case 1: Focus Groups

# Alton

## PERSONA

Infrequent voter

**Age** 42

**Occupation** Retail store worker

**Education** High school degree

**Location** San Gabriel Valley, CA

**Challenges** Limited English Proficiency

### Top five sources of information

- WeChat
- Family & Friends
- Local Church
- Ethnic Media
- Facebook

Mainstream Media News Rarely checks

Political Interests Highly motivated

Social Network Somewhat connected

How will Alton interact with information material about voting in November 2020?

### Questions

- What information source does he have?
- What motivates Alton to vote?
- What challenges does Alton face when voting?

### Reasons to vote

- It is the civic duty to vote
- Have shared topic with friends at the church
- Alton wants to make an impact on policies

### Alton's situation

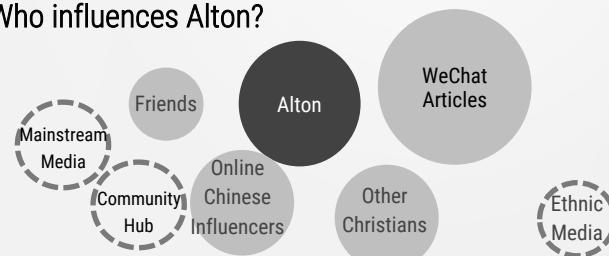
#### Goals/Motivations

- Prefer low voting time cost
- Understand how his vote choice impact his life
- Feel rewarded as a newly naturalized citizen

#### Frustrations and pain points

- Voting guide materials are too long
- Afraid of partisan interpretation of policy outcomes
- Inconsistent information regarding voting options

Who influences Alton?



### Alton's Comments

"Coming from a family that doesn't want to vote or are scared, scared for their background information to be shared,..., we need more reassurance in our community to understand it's okay to vote."



## Case 1: Focus Groups

# Key Insights

### Recommendation #1

If in-person voting available, make COVID-19 rules clear and enforced.



XA NWS MUS.  
Tahua cov neeg saiv tsa hauv Lub Nroog Fresno yuav tau tsais ib daim npav xalv tsais raws kev xa ntawv nyob rau cov lim piam ua ntej kev xalv tsais, yog li ntawd koj tsis tsa yuav tau thov daim npav xalv tsais raws kev xa ntawv yam meej tseeb tshij txhua. Koj tuj yeem xa koj daim npav xalv tsai tuj yam tsais nqej tsia dawb xwb.

MUAB NWS TSO RAU.  
Xa tsai nyob rau thaumun muab koj daim npav poy rau hauv lub thauv! Koj yauv muab lub hwm tsam yod ylm diaus los xalv tsais raws rau hrub thiab lub sij hawm was raug raws koj lub claj teev tseg.

MUS SAIB.  
Koj tuj yeem rau npe los xalv tsais, Hnoov koj oghov chaw nyob, hnoov koj tog neeg nom tsaw los sis tsais ib daim npav xalv tsais los hlow chaw nyob rau ntawm xhuba Lub Chaw Pov Npav, tab txawv yog nyob rau Hnub Xalv Tsai.

Txawvnm rau kuaj xyas koj li kew rau pue tsais weeg xalv tsais thiab ntej kom paub ntau ntixv txog cov kev tsais raws Tsab Cai Hais Txog Tus Neep Pov Npav Txoj Kew Xalv hauv Lub Nroog Fresno, suav nrog cov kev xay thauv mus los dawb, ritau hom ntauv ntauv pab thiab cov hauv kev ADA; mus tsais hauv tsais vev xalv hauv qab no.

### Recommendation #2

Demographically representative and culturally relevant outreach and information material.



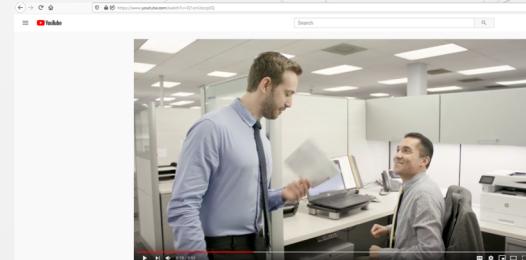
### Recommendation #3

Messaging collaboration between Election officials and cultural experts from community advisory groups.



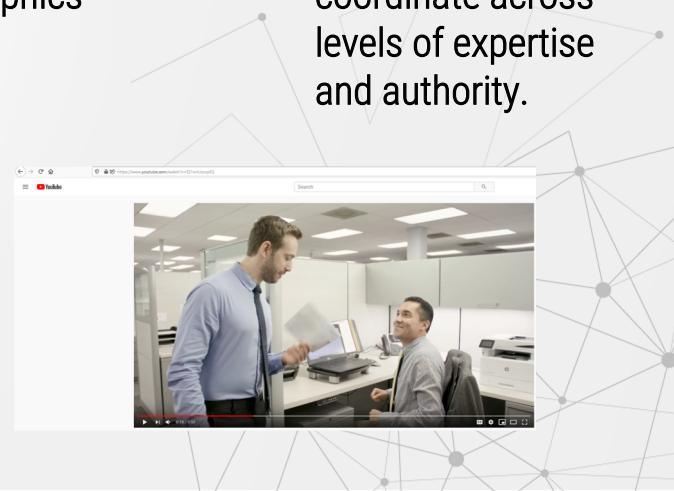
### Recommendation #4

Use simple visuals in voting and outreach materials. Clean symbols and graphics



### Recommendation #5

Convene similar efforts as the one producing this report early on to coordinate across levels of expertise and authority.



## Case Study 2

# QUANTITATIVE PROJECT

## National Asian American Voter Survey



# Project Overview

- **Motivation**
  - Capture policy attitudes and opinions among Asian American voters for the upcoming general election
- **Objectives**
  - Understand Asian American voters' policy preferences and political attitudes by gender, party identification, geography, and detailed ethnicities
  - Growing importance in many competitive states and Congressional districts
    - NV, NC, GA, TX, FL, PA, MI for presidential
    - Southern CA, Texas, NJ, and more for Congressional
- **My Role**
  - Designed the treatment and control group assignment for the survey experiment
  - Programmed survey questionnaire on **Qualtrics**
  - Manipulated, analyzed, and visualized quantitative survey data in **R & Stata**.





# Survey Summary

- **Sample size:** 1,569 (+/- 2%) Registered Asian American Voters

Indian 250 (+/- 6%)



Chinese 306 (+/- 6%)

Filipino 263 (+/- 6%)

Japanese 226 (+/- 7%)

Korean 250 (+/- 6%)

Vietnamese 264 (+/- 6%)

- **Geography:** Nationwide

- **Participants Recruitment**

- Voter File Data from Catalist
- Voter Race & Ethnicity Prediction Using Surname and Address Matching Algorithm  
(Programmed in R)
- Email & SMS outreach messages

- **Interviews**

- Online Qualtrics Survey & Phone Interviews
- Fielded July 15 to September 10, 2020
- Conducted in English and 8 Asian American Languages





# Survey Summary

## Survey Recruitment Message Experiment (A/B Testing)

Total Contact = 58,000 individuals [Randomly assigned into version A and B]

Treatment Group (N = 29,000): Recruitment Message by Someone with a co-ethnic name

Control Group (N = 29,000): Recruitment Message by Someone with a generic name

Response Rate = 2.8%

### VERSION A

Hello <<NAME>>! My name is **Elizabeth Johnson**. We want to make sure that Asian American voices are included in decisions affecting our communities. Please take the survey from APIA Vote here! [LINK HERE: \_\_\_\_\_]

### VERSION B

Hello <<NAME>>! My name is **Grace Park**. We want to make sure that Asian American voices are included in decisions affecting our communities. Please take the survey from APIA Vote here! [LINK HERE: \_\_\_\_\_]

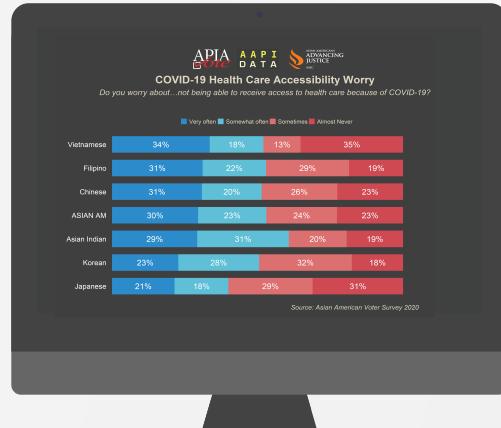
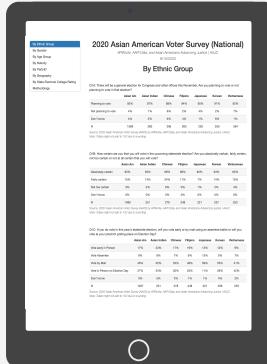




# Research Methods

## SURVEY ERRORS

- Sampling Error (panelist-based Recruitment)
- Survey Error Due to Variation from
  - Question-Wording
  - Question Order
  - Time & Date When they Survey Was Conducted



## SAMPLING WEIGHT

- Weighted Statistically to Account for Demographic Differences between the Sample and 2018 Census American Community Survey 5-Year Micro Sample Data
  - Size of Group Within a State
  - Educational Attainment
  - Gender
  - Age
  - Nativity

## Key Findings

- Asian Americans are highly motivated this year
- Economy, Health care, Education, and Racial discrimination top voter concerns
- On a range of issues, Asian American voters are progressive
- Impacts of COVID-19 not only on racial discrimination, but also on health, unemployment, and financial well being

## Case Study 3

# **FAST TURN AROUND PROJECT**

## Amazon Trucking Routes Optimization



# Project Overview

## Objectives

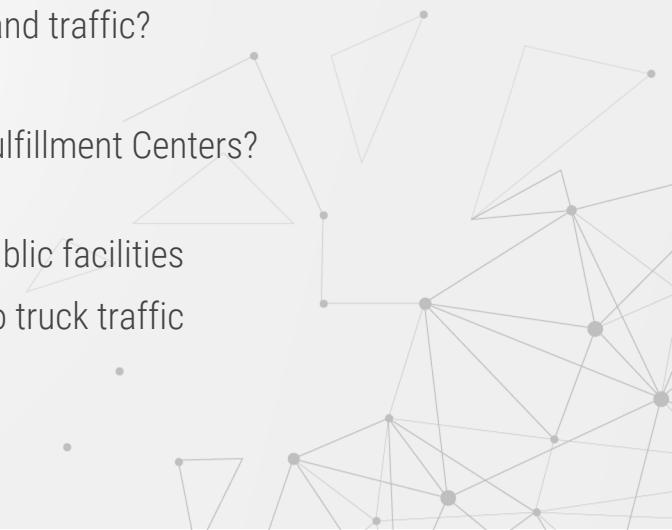
- San Bernardino airport needs recommendations on Amazon truck routing optimization
- Reduce disturbance to surrounding residential areas
- Reduce traffic, air pollution and safety concerns

## Research Questions

- Which locations are more sensitive to changes in safety, air quality and traffic?
- What are some of the key concerns?
- Are those highly sensitive location close to truck route to Amazon Fulfillment Centers?

## My Role

- Built an interactive mapping tool showing locations of school and public facilities
- Deployed a GIS survey collection location data on sensitive areas to truck traffic
- Visualized key clusters of locations near major trucking routes





# Timeline

Case 3: GIS Survey

**January 4:**  
Discuss Key Metrics  
for the survey

**January 15:**  
Collect feedbacks from SB  
Airport

**January 22:**  
Open for Public Data  
Collection

**January 11:**  
Draft the GIS Survey

**January 18:**  
Update the Survey  
Add in Tutorial Video

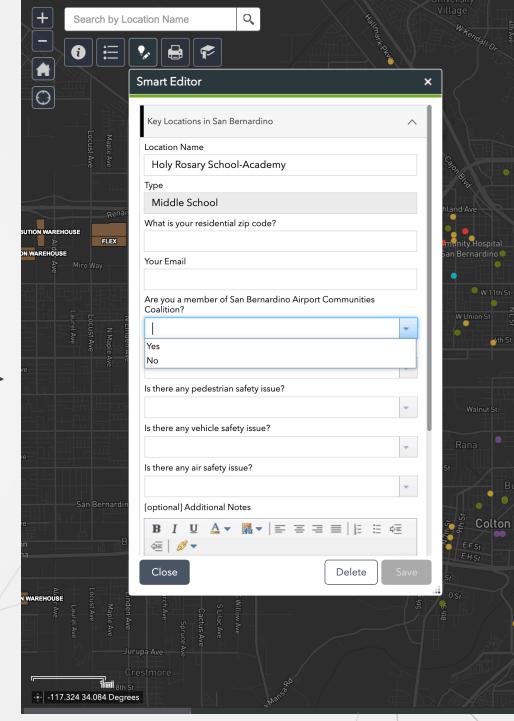
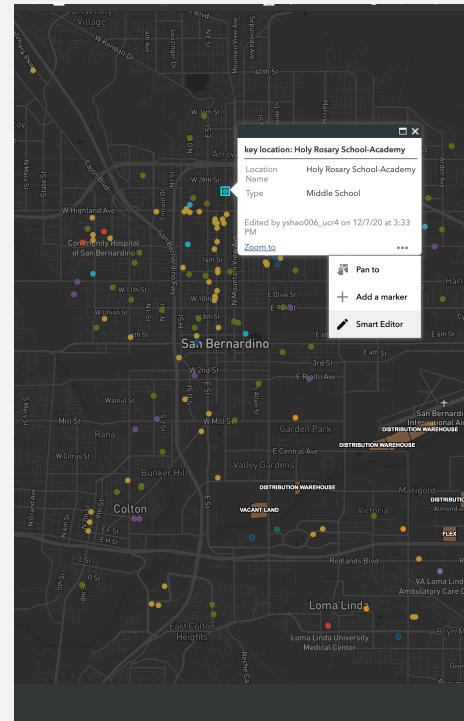
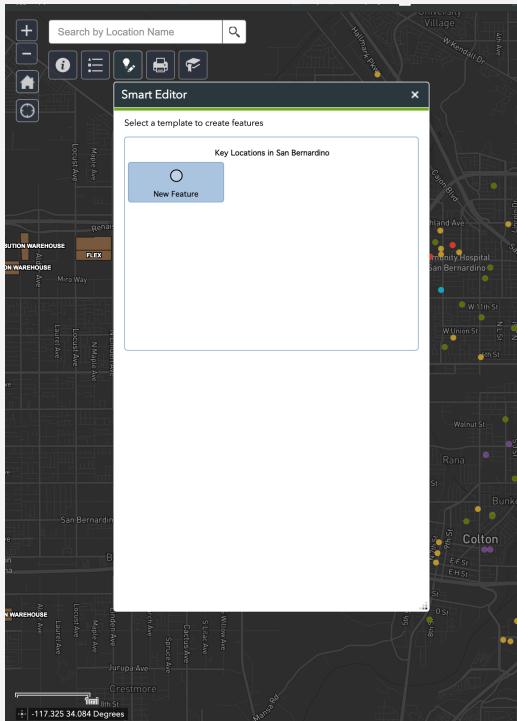
**January 26:**  
Clean Collected Data  
& Create Data  
Visualization



# GIS Survey Flow

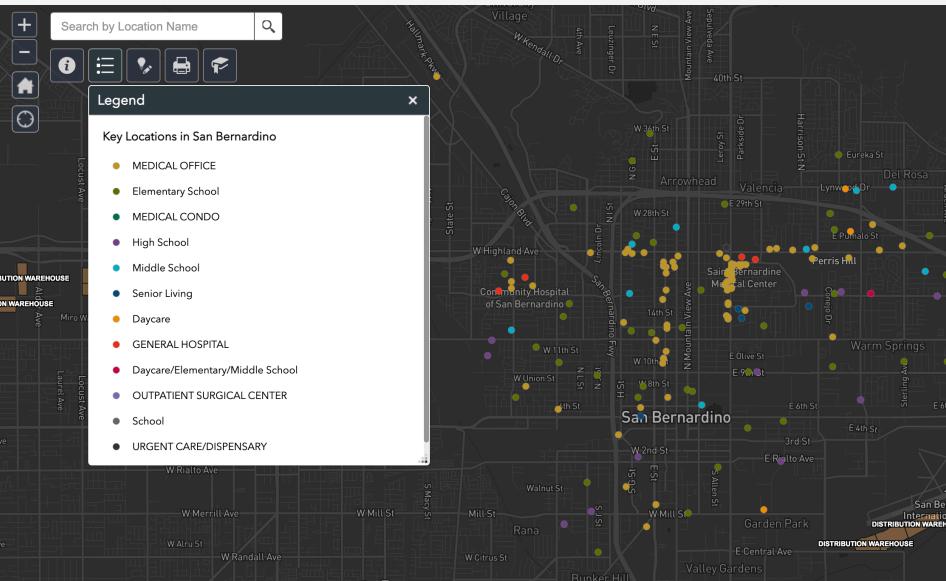


Case 3: GIS Survey

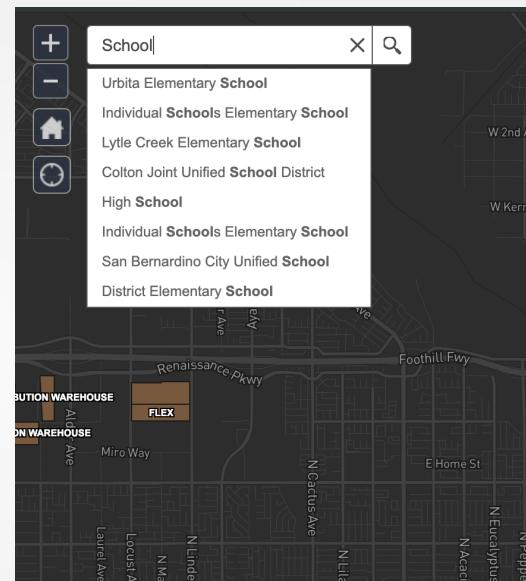




## Case 3: GIS Survey



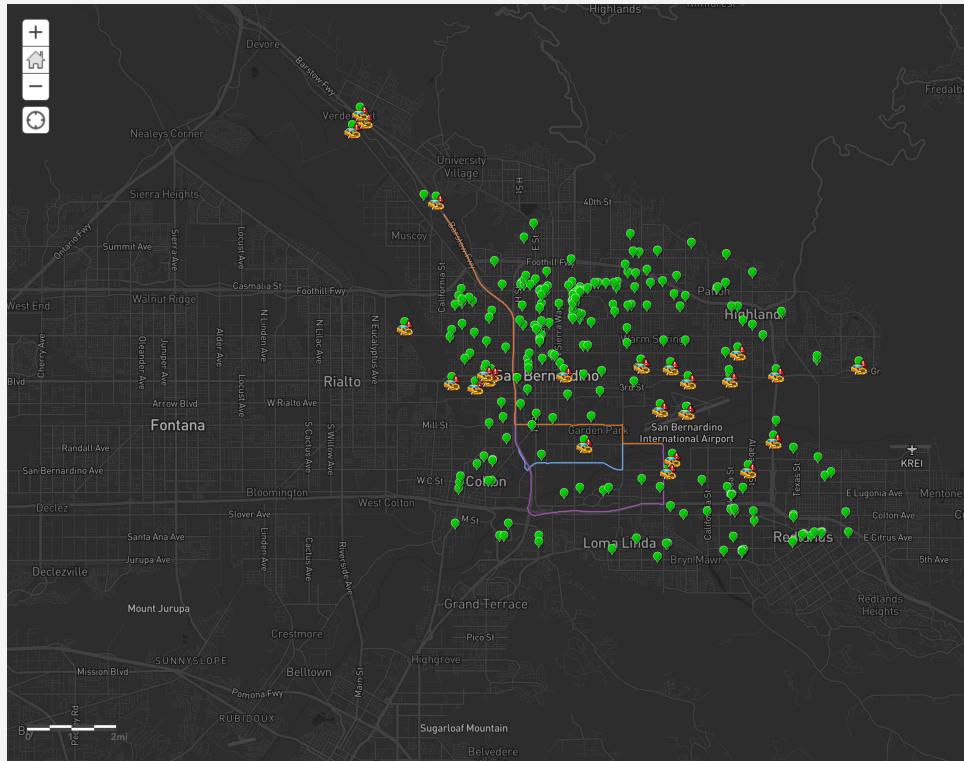
Use the Legend to Index Location by Categories



Keyword Search by Location Name



# Spatial Visualization



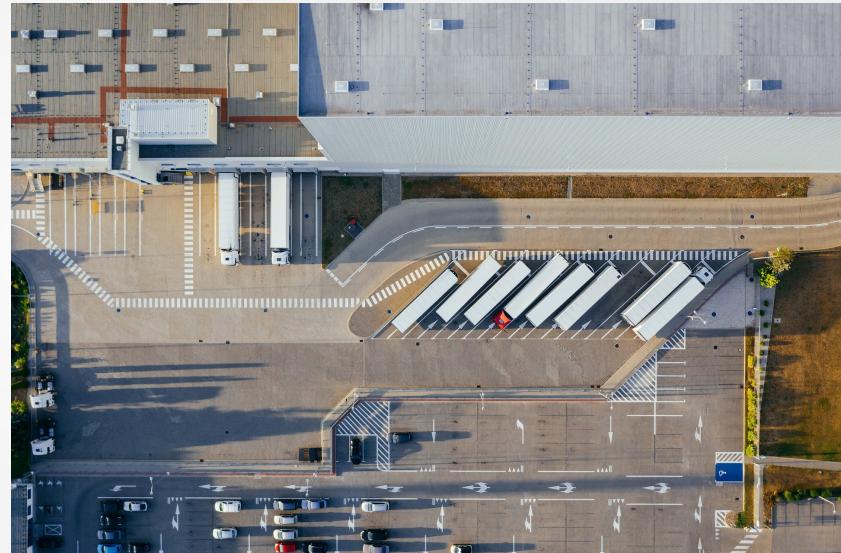
- **Green Dots:** Key Locations Near San Bernardino Airport
- **Car Icons:** Locations where the public reported as sensitive to traffic concerns
- **3 Colored Lines:** 3 Trucking Routes to Amazon Fulfillment Center



## Key Insights

The key cluster of locations sensitive to truck traffic is consistent for vehicle safety, traffic, air quality, and pedestrian safety

- 1. Medical Offices:** There are medical offices on the west side of the Barstow freeway causing more vehicle safety concerns
- 2. Power Plants & Daycares Center:** Route facing the south side of the San Bernardino Airport towards San Bernardino freeway has vehicle safety concerns due to the presences of Mountain View power plant and daycare centers
- 3. Schools:** There are also a few public schools located at the intersection of three trucking routes



# THANKS

Questions?

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