

## The Rapid Deployment of Mobile Technology to Support a Coordinated Response to Hurricane Harvey

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**What's Next:**  
In Data, Leadership, and Community

# The Community: Houston, TX



Houston is a large metropolis in Texas, extending to Galveston Bay. It's closely linked with the Space Center Houston, the coastal visitor center at NASA's astronaut training and flight control complex. The city's relatively compact Downtown includes the Theater District, home to the renowned Houston Grand Opera, and the Historic District, with 19th-century architecture and upscale restaurants.

**Elevation:** 80'

**Population:** 2.303 million (2016)



# The Homeless Population in Texas



Source: <http://www.HomelessData.com/Dashboard>  
 Tool Used: Tableau  
 Licensing Model: Freemium  
 Data Set Used: 2016 HUD Point in Time Data

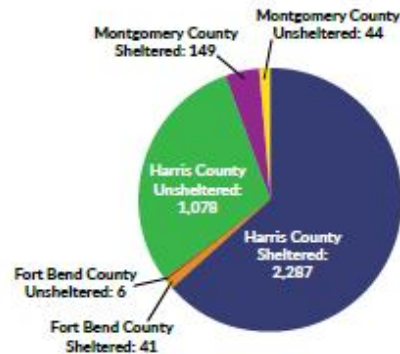
# Houston 2017 PIT Summary

## 2017 Homeless Count



Montgomery County joined The Way Home in 2016, and was included in the 2017 Homeless Count and Survey. For accurate historical comparisons, only 2017 Count data from Houston, Harris County and Fort Bend County will be used. Montgomery County data gathered in 2017 provides a benchmark for measuring homelessness in that area and will be used in future comparisons.

**Total: 3,605**



### Key Findings:

in Houston, Harris County and Fort Bend County

60% decrease in overall homelessness since 2011.

82% decrease in unsheltered chronic homelessness since 2011.

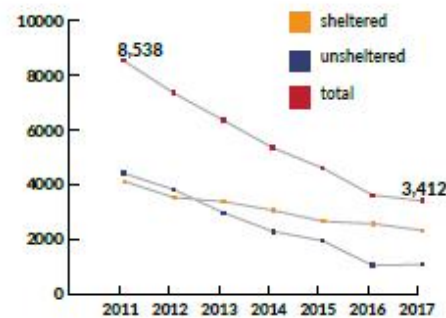
39% of unsheltered homeless individuals had a high school diploma or GED. 21% had some college or a college degree or higher.

78% of unsheltered homeless individuals became homeless in Houston.

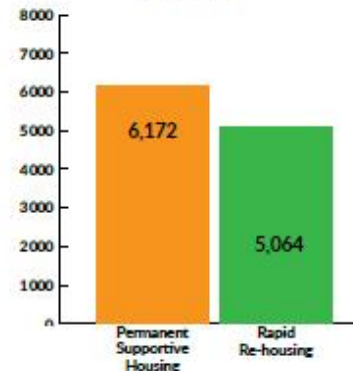
25% of unsheltered homeless individuals reported no income, while 20% reported panhandling for income.

### Comparing the Counts

in Houston, Harris County and Fort Bend County



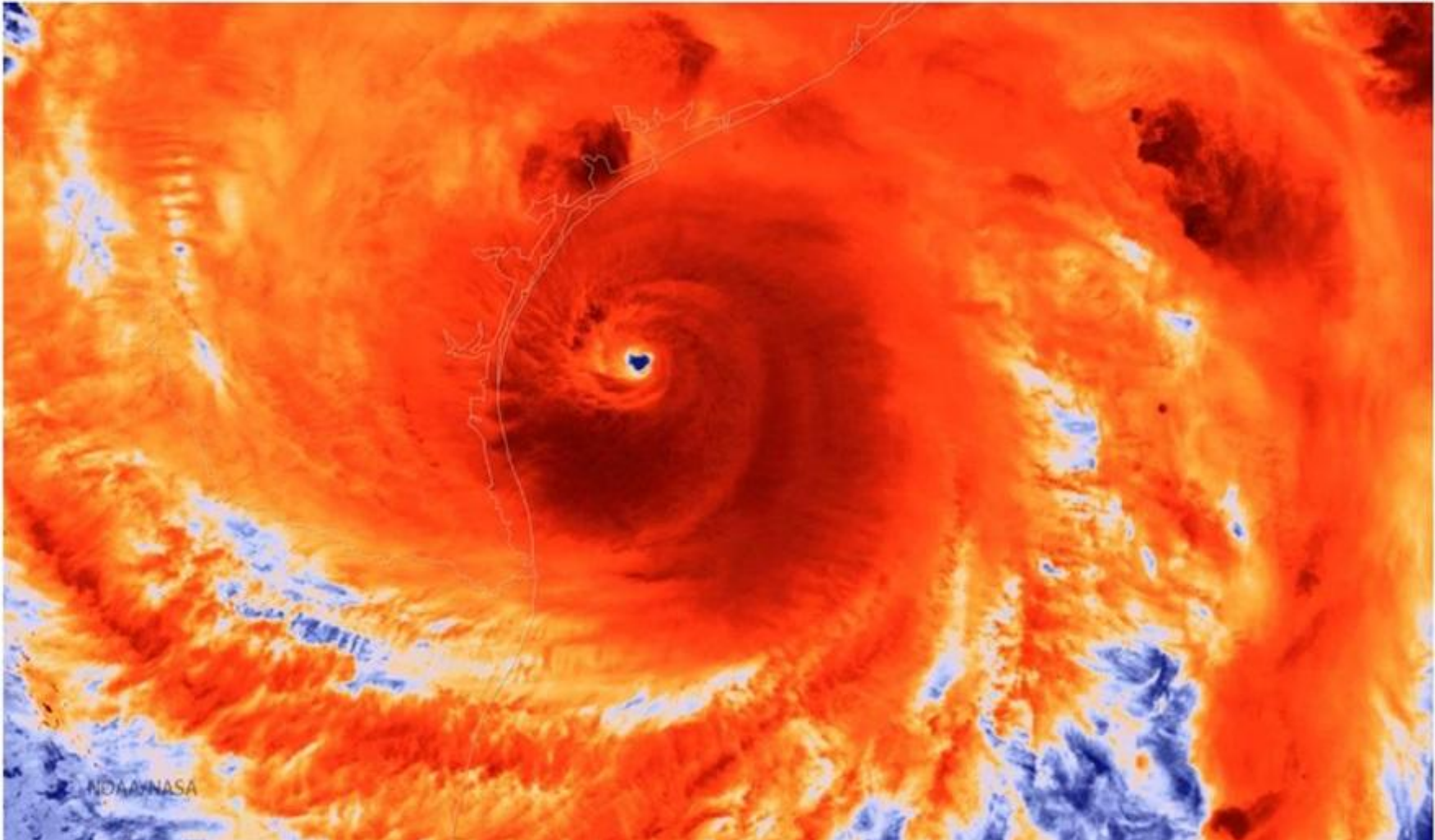
### Permanent Housing Placements since 2012







# Hurricane Harvey



Source: NOAA



Tidwell St  
Before



Tidwell St  
After



Source: TIME







# Disaster Response Coordination

- Local government (city, county, state)
- Federal government (FEMA, HUD)
- Continuum of Care (CoC Lead, homeless service providers)
- Non-profits (American Red Cross, local agencies)
- Others (volunteers, local businesses)





# Hurricane Harvey Response

- Many people affected by the storm were evacuated to two major (and largest) shelters:
  - GRB: Operated by the Red Cross & the City of Houston
    - 10K+ evacuees initially
  - NRG: Operated by Baker Ripley & Harris County
    - 2K+ evacuees initially
- TX-700 Continuum of Care received Disaster TA from HUD almost immediately



# Shelter Resources

[www.khou.com/news/local/list-harvey-shelters-around-houston-area/468037262](http://www.khou.com/news/local/list-harvey-shelters-around-houston-area/468037262)

**KHOU.com** HOME WEATHER 77° LOCAL NATION NOW TRAFFIC SPORTS FEATURES ABOUT

Here are the locations in the Houston area to seek shelter:

**HOUSTON**

- NRG Center at Loop 610 & Kirby will open at 10 p.m. Tuesday. Holds 10,000 people.
- Lakewood Church: 3700 Southwest Fwy, Houston, TX 77027
- George R. Brown Convention Center downtown
- Toyota Center downtown
- Alief Taylor High School: 7555 Howell Sugar Land Rd, Houston, TX 77083
- Trini Mendenhall Community Center: 1414 Wirt Road Houston, TX 77055
- Christ The Incarnate Word Catholic Church: 8503 S Kirkwood Houston TX 77099
- Calvary Community Church: 7550 Cherry Park Dr, Houston, TX 77095
- Primrose School of Kelliwood: 2402 Westgreen Blvd, Katy, TX 77450 - It is a shelter for families and also a staging place for first responders in the area ([Click here for more](#))
- The MET Church: 13000 Jones Road, Houston TX 77070
- Lien Hoa Temple: 6709 Sugarland Howell Rd, Houston, TX 77083
- Lifepath Church: 17703 W Little York Rd, Houston, TX 77084
- Houston Skyline Junior Volleyball Facility: 10510 Westview Drive Houston TX 77043
- Red Cross Shelter at M.O. Campbell Ed Center: 1865 Aldine Bender Rd, Houston, TX
- Islamic Center/Masjid Al-Mustafa: 17250 Coventry Park Dr, Houston, TX
- Islamic Center/Masjid Al-Sabireen: 610 Brand Lane, Stafford TX
- Islamic Center/Masjid Abu-Bakr: 8830 Old Galveston Rd, Houston TX
- Iglesia Bautista del Redentor: 4218 Lang Road Houston Tx
- A temporary shelter has been set up at the Sagemont Park Community Center at 11507 Hughes Road
- Vietnamese Martys Church: 10610 Kingspoint Road, Houston, TX
- St. Maximilian Kolbe Catholic Community 10135 West Rd, Houston, TX 77064
- St. Christopher Catholic Church: 8150 Park PI Blvd, Houston, TX 77017
- St. Thomas Presbyterian Church: 14100 Memorial Drive, near Memorial and

# George R Brown (GRB) Convention Center: Emergency Response







# Hurricane Harvey Response (cont.)

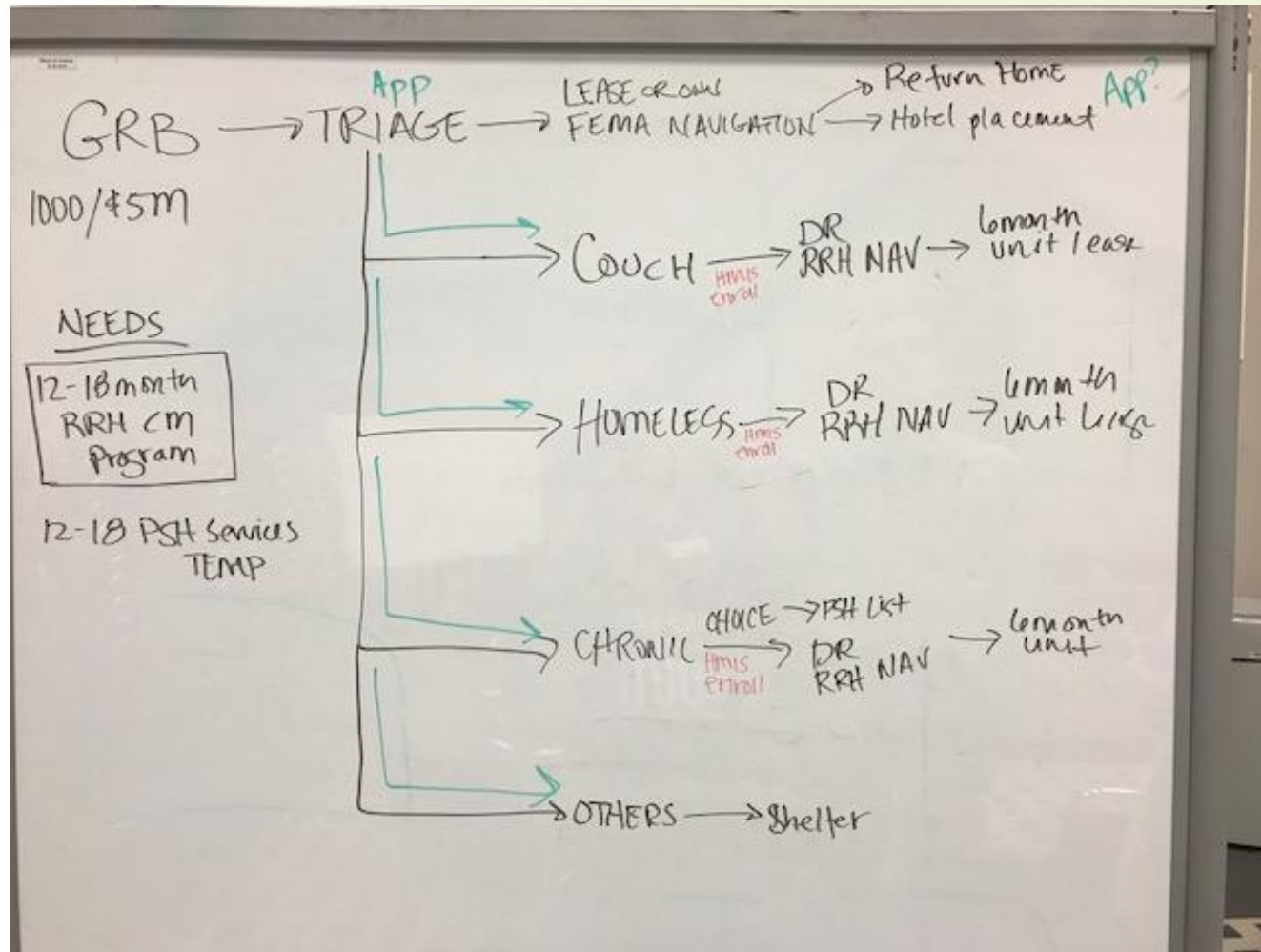
- Homeless response system leadership called to GRB the end of the week of August 31<sup>st</sup>
  - Shelter census at 2400+
- Task – Develop an exit strategy for all residents at the GRB
  - Call went out to all landlords from President of Texas Apartment Association and the Mayor
    - Almost 3K units volunteered by landlords
  - New Residences on Emancipation opened by New Hope Housing
    - 295 beds in dormitory style living (4 per room)

# Hurricane Harvey Response (cont.)

- HMIS Needs
  - Modified version of the CA Assessment to be used as Disaster Assessment
    - [Harvey HMIS Assessment revised.pdf](#)
  - Disaster Navigation program created to enroll those ready to be housed
  - Disaster RRH program created for long-term case management after housing
    - This will be through an RFQ process



# The Whiteboard

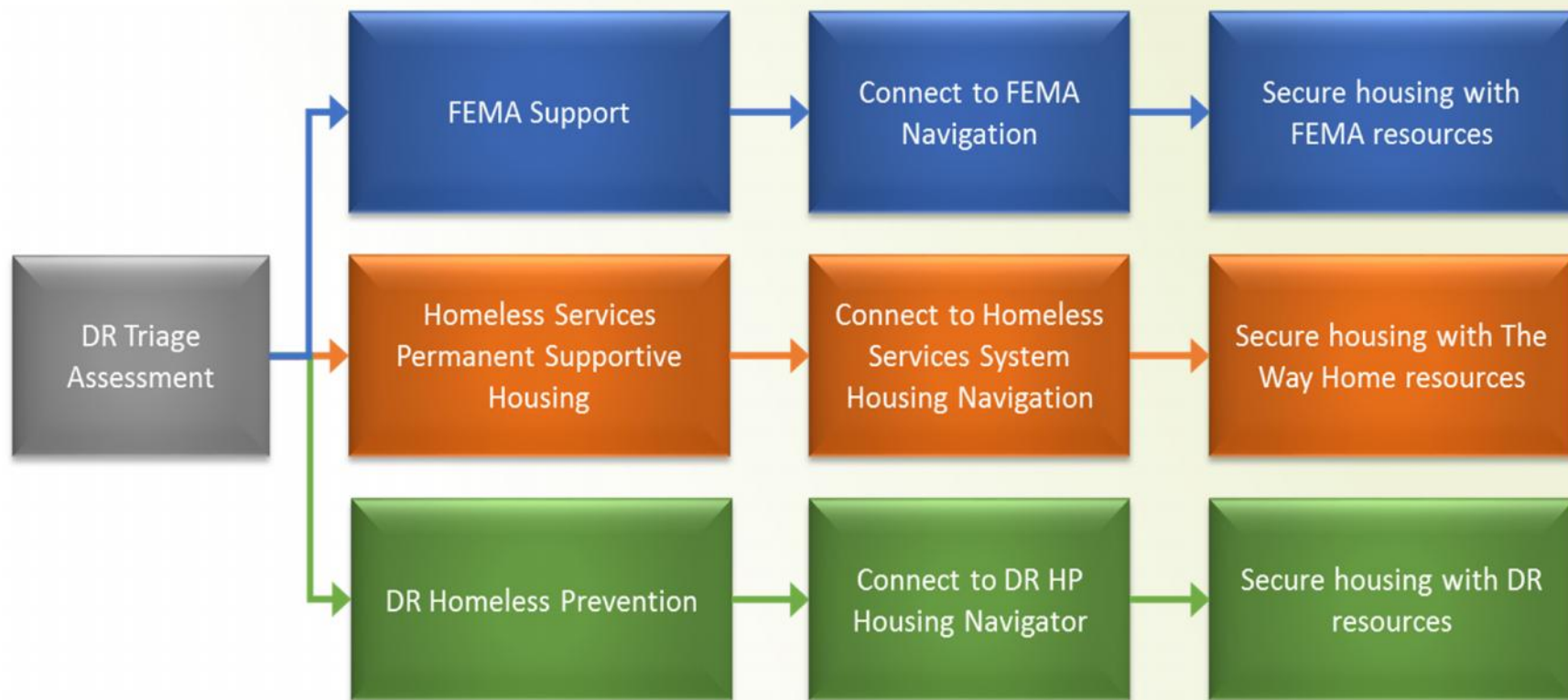


Tools Used: Join.Me for conferencing

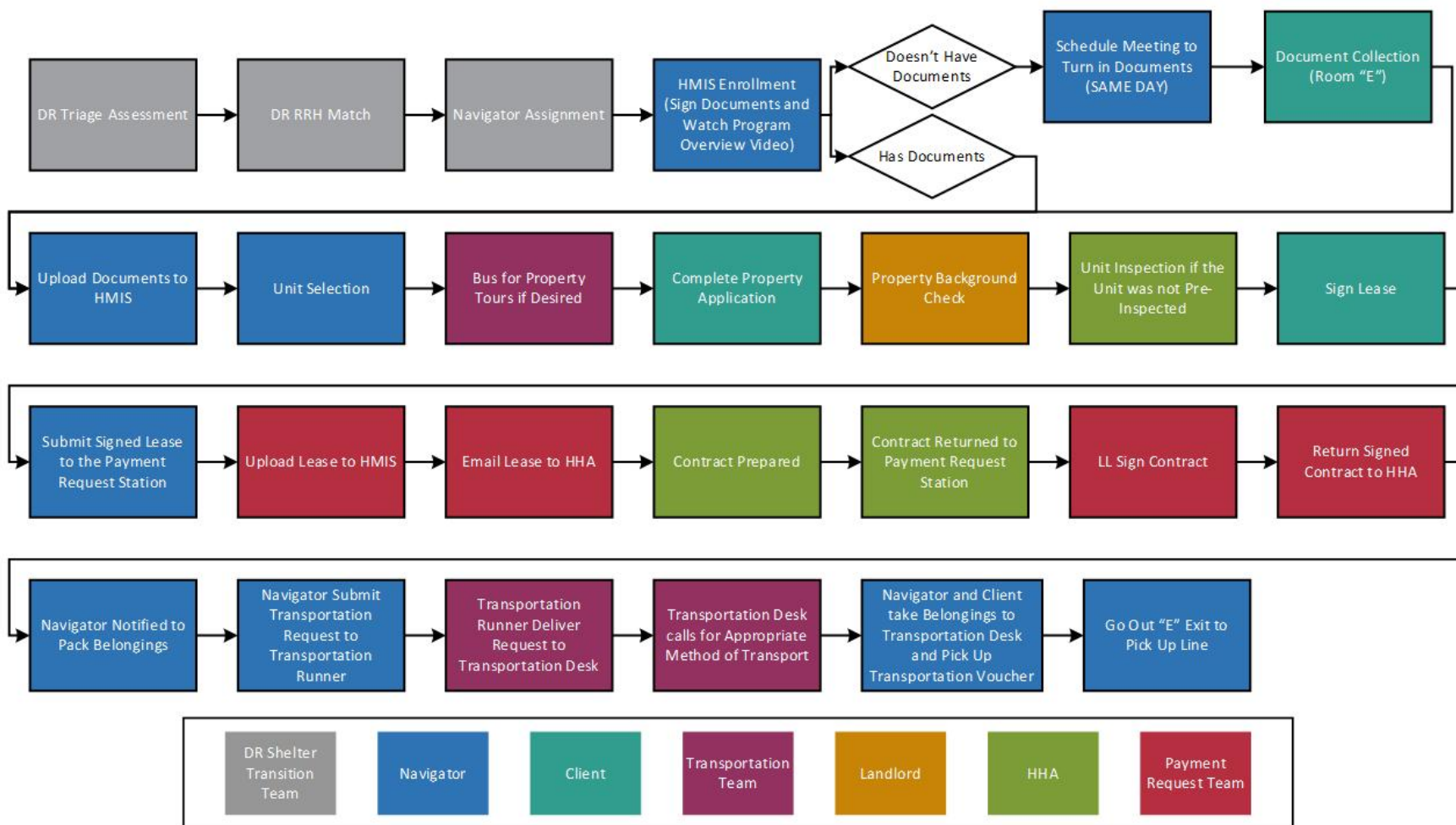
Licensing Model: Freemium



# The Revised Approach



# Disaster Recovery RRH Workflow





# Disaster Relief Housing Navigation Handbook

From an emergency response to permanent housing

**Disaster Relief**  
Housing Navigation Handbook

**#HousingForHarvey**

## Disaster Relief Housing Navigation Handbook

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*Housing Navigators are responsible for supporting households through the process of securing permanent housing and accessing disaster relief resources....*





# HMIS Pros

- Existing database with client records
- Customization capability
- Unique HMIS identifiers
- Capturing geodata
- Local control
- No additional cost



## HMIS Cons

- No time available for customization & sync
- More complex user training & set up
- New user friendliness issues
- Bad quality data added in HMIS
- Geodata accuracy issues
- No direct geo-mapping capability



# Mobile App Pros

- Quick deployment
- App download to many devices
- Quick customizations
- Simple user training & setup
- Real-time geo-mapping
- Available tech support

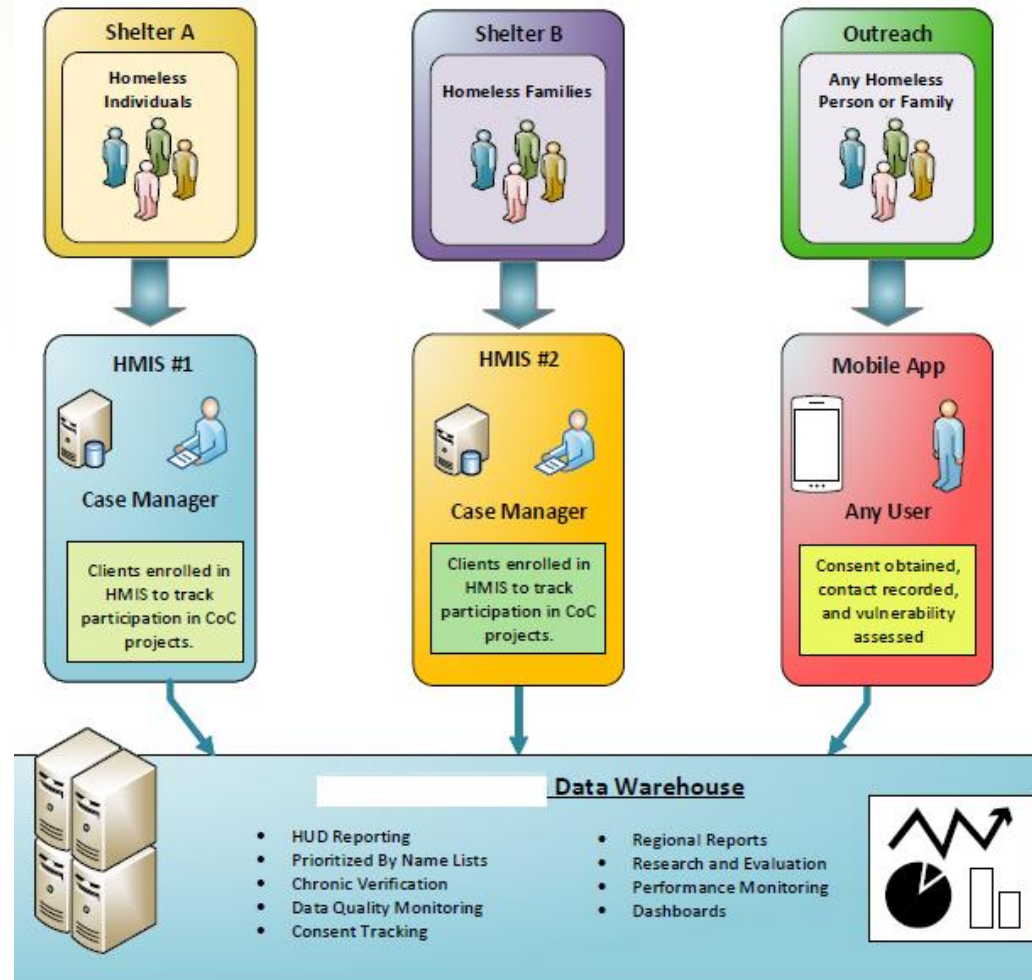




# Mobile App Cons

- Third-party software
- Existing HMIS clients still must be recreated
- Duplication & data quality issues
- Data re-entry in HMIS
- Additional privacy & security issues
- Additional cost?

# The Technical Framework



Tools Used: Microsoft Visio

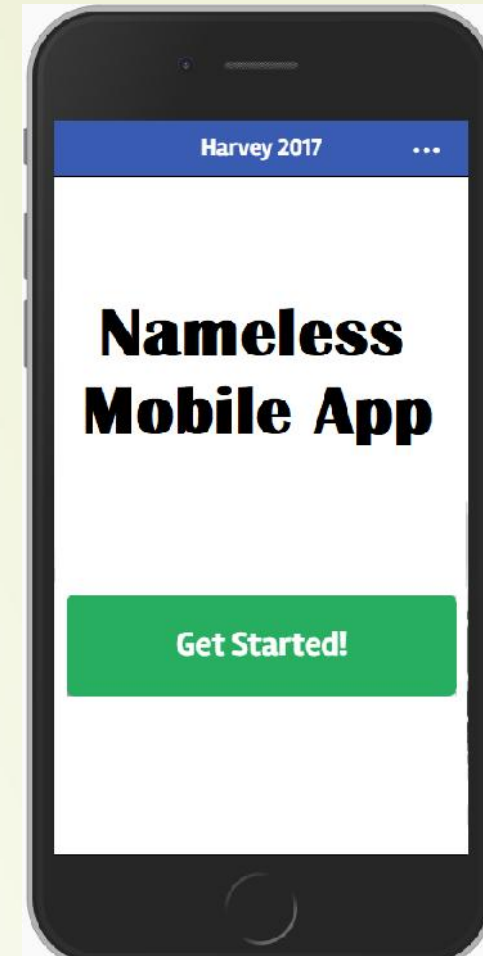
Licensing Model: Licensed (cheap at TechSoup.org for non-profits)

# Data Collection via Mobile App

- Gathered info needed for triage & rapid response
- Dashboards provided a high-level recap of the situation
- Integration with HMIS will help us measure the impact on homelessness during the 2018 PIT and beyond

*Mobile response allowed multiple staff to quickly and effectively gather information with minimal additional disruption to evacuees, and with minimal effort to deploy.*

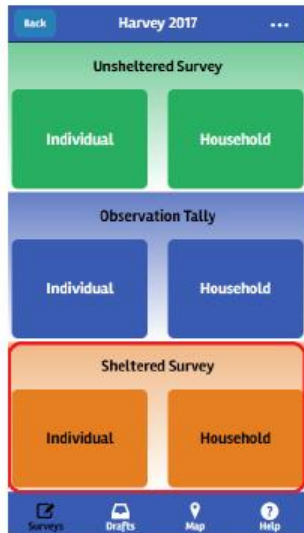
URL: [App Store and Google Play](#)  
Licensing Model: Free



# Triage Worker Guidance

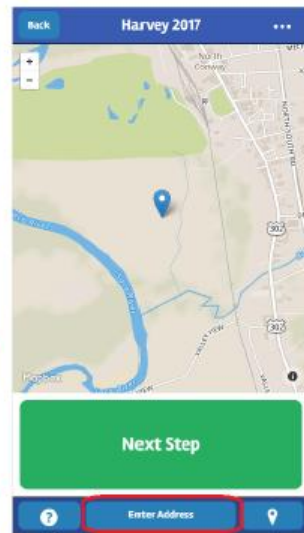
## Step 7: Select Survey

Choose the appropriate "Sheltered Survey", either Individual or Household. If a household, enter the number of people in the household.



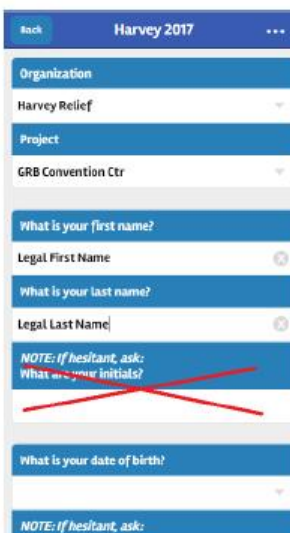
## Step 8: Register

Ask **"Were you either a homeowner, or on a lease, before the flooding?"** If yes, tap "Enter Address" and enter their address information. If no, tap "Next Step".



## Step 9: Conduct the Survey

Select "Harvey Relief" for the organization, "GRB Convention Ctr" for the Project, enter the legal first and last name, and date of birth and scroll down.



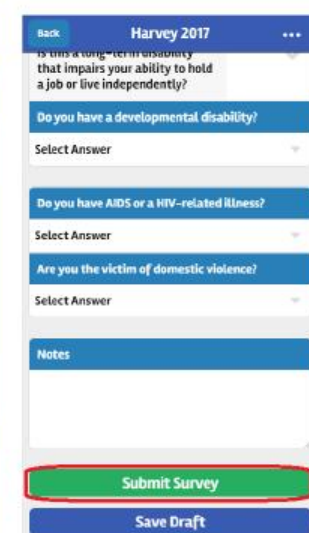
## Step 10: First Time Homeless & Chronic

If the person was in housing before Harvey, enter "Yes" for "Is this the first time you have been homeless?" question. Otherwise, select "No".



## Step 11: Submit the Survey

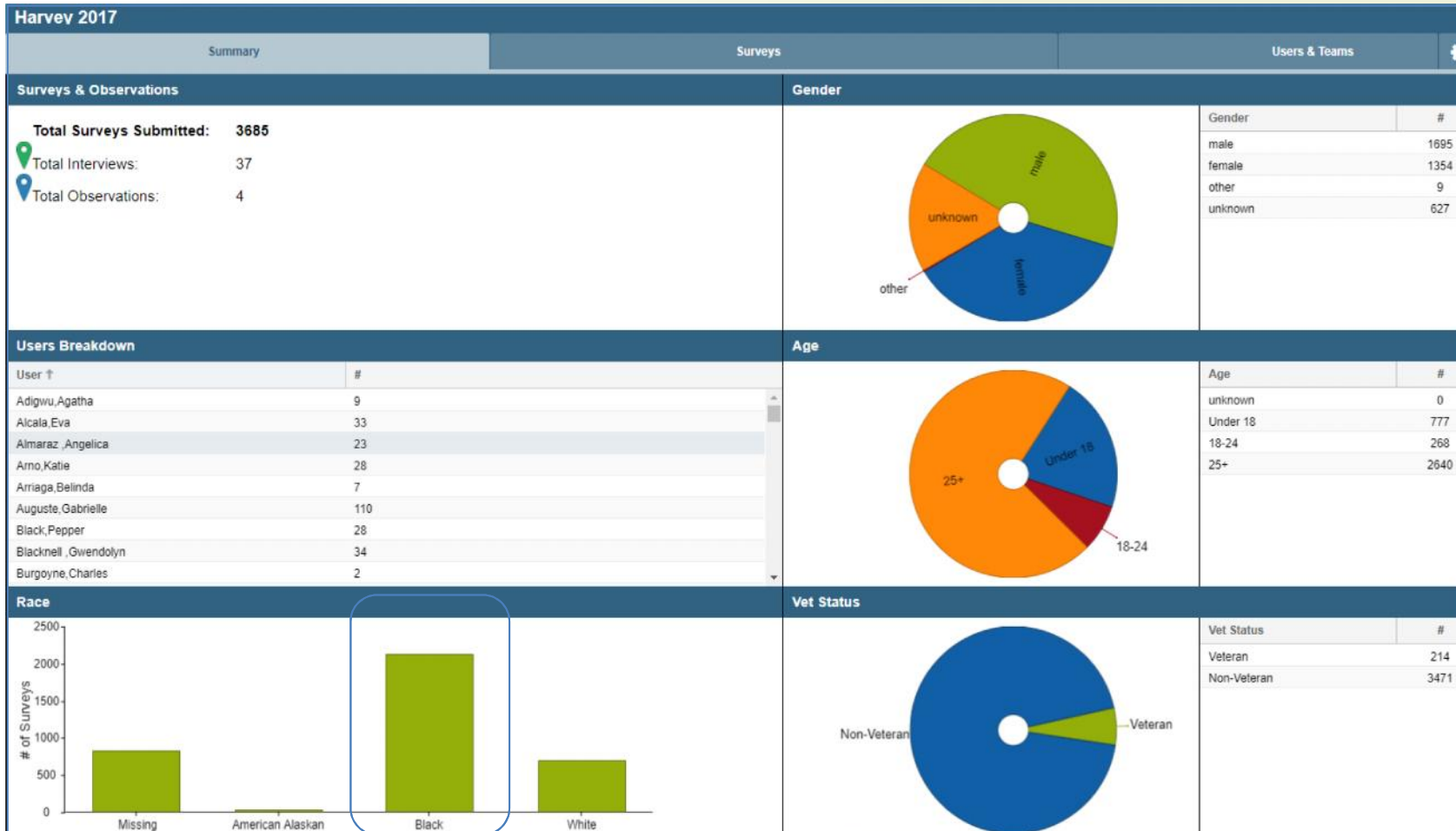
After completing the rest of the survey, if the person owned or leased, ask **"Have you returned to your house and if so is it damaged?"** Enter in either "Yes-Damaged", "Yes-No Damage", or "No" in the "Notes". Tap "Submit Survey".



Tools Used: Windows Snipping Tool and MS Word



# Command Center to Manage Info



URL: <https://www.WeCantTellYou.com>

Licensing Model: Proprietary

# Command Center to Manage Info

Harvey 2017

Summary Surveys

Filter

Search (Client ID or Name)  
Enter Client ID or Name

User Organization

Team Project

Type Gender

Ind or Household Adult or Child

First Time Homeless Chronic

In HMIS? HMIS ID

FEMA Status FEMA Barriers

Survey Status  
 Active  Exited  Archived

Map

URL: <https://www.WeCantTellYou.com>

Licensing Model: Proprietary

# Command Center to Manage Info

Summary		Surveys							User		
Filter		Map							List		
Search (Client ID or Name) Enter Client ID or Name		Race	Chronic?	First Time Ho...	In HMIS?	HMIS ID	CoC	FEMA Status ↓	Barriers	User Name	Notes
User: [ ] Organization: [ ]		Black	No	Yes	Unknown		TX-700	Approved	No	Rodriguez, ...	FEMA approved pl
Team: [ ] Project: [ ]		Black	No		Unknown		TX-700	Approved	No	Rodriguez,...	FEMA- approved b
Type: [ ] Gender: [ ]		Black	Yes	No	Yes	38795	TX-700	Approved	Unknown	Alcala, Eva	fema-approved for
Ind or Household: [ ] Adult or Child: [ ]		Black	No	No	Yes	94913	TX-700	Approved	Yes	Alcala, Eva	fema- approved ho
First Time Homeless: [ ] Chronic: [ ]		Black	No	Yes	Yes	12340	TX-700	Approved	No	Witt, Preston	has FEMA Voucher
In HMIS?: [ ] HMIS ID: [ ]		Black	No	Yes	Unknown		TX-700	Approved	Yes	Lyons, William	no ID FEMA appro
FEMA Status: [ ] FEMA Barriers: [ ]		Black	No	No	Yes	52480	TX-700	Approved	Yes	Jaffri, Bilal	Fema application ic
Survey Status: <input checked="" type="radio"/> Active <input type="radio"/> Exited <input type="radio"/> Archived		Black	No	No	Yes	170446	TX-700	Approved	No	Jackson, D...	FEMA: approved fo
		Black	No	Yes	Yes	184531	TX-700	Approved	Unknown	More, Scot	fema yes I'd 71007
		Black	No	Yes	Yes	180833	TX-700	Approved	Unknown	minkins, israel	Fema - application
		White	No	Yes	Unknown		TX-700	Approved	Unknown	West, Shau...	FEMA approved 71
		White	No	Yes	Unknown		TX-700	Approved	Unknown	Pohndich,...	FEMA approved
		White	No	Yes	Yes	265929	TX-700	Approved	Yes	Pohndich,...	Has FEMA approve
		Black	No	Yes	Unknown		TX-700	Approved	Unknown	Glueck, Irma	FEMA - approved f
		Black	No	Yes	Unknown		TX-700	Approved	Unknown	West, Shau...	FEMA APPROVED
		Black	No	Yes	Unknown		TX-700	Approved	Unknown	Jackson, D...	FEMA: approved v
		Black	No	Yes	Yes	123323	TX-700	Approved	Yes	Pohndich,...	FEMA approved /
		Black	No	Yes	Unknown		TX-700	Approved	No	Alcala, Eva	fema- approved ho
		Black	No	Yes	Unknown		TX-700	Approved	No	West, Shau...	FEMA approved 34
		Black	No	Yes	Yes	23138	TX-700	Approved	Yes	Glueck, Irma	FEMA legal aid h
		Black	No	Yes	Yes	263230	TX-700	Approved	No	Glueck, Irma	FEMA approved 34
		Black	No	Yes	Yes	100004	TX-700	Approved	No	Rodriguez, ...	FEMA yes place to
		Black	No	No	Yes	100004	TX-700	Approved	No	Hartley, Kim	FEMA approved 4

- The details from evacuees can be filtered as needed to support the triage efforts.
- Disaster recovery specific fields include FEMA status and barriers.
- CoC code is derived from the GPS coordinates.
- HMIS ID was sourced through a data match.



# Who was Homeless Prior to Harvey?

*Matching evacuee info with HMIS for historical and future analysis.*

*29% of evacuees had a record in HMIS*

	A	B
1	SURVEY_ID	HMIS_ID
3	1000064042	314187
11	1002819622	25889
20	1006670224	149419
21	1007284426	271361
24	1008350688	96275
26	1008759320	86772
29	1009354077	311313
35	1012630426	35197
36	1012666483	163613
40	1013911844	330091
42	1014498073	69651
47	1016291691	121073
48	1016643252	210010
52	1017347985	340477
56	1019088980	184531
58	1019835423	221431
64	1021387470	246091
67	1022471790	253506
68	1022537753	93280
69	1022598449	4987
71	1023228662	336987
75	1024483143	322804
77	1024545784	129618

Tools: Excel, The-Link-King, SQL

Licensing Model: Per-Seat, OpenSource, and Proprietary





# Matching Records in Excel

**STEP 1** – Copy data from data sets to be merged into two tabs in Excel

**STEP 2** – Create Unique Key Fields Using Demographic Info  
DataSet1KeyField =concatenate(lastname,DOB,gender)  
DataSet2KeyField =concatenate(lastname,DOB,gender)

**STEP 3** – Match Records from One Tab with Records on the Other  
=vlookup(DataSet1KeyField,DataSet2,ColumnNumberOfDataToBeReturned,FALSE)

Tools: Excel

Licensing Model: Proprietary but cheap on TechSoup.org



# Using Excel to Pull Data Out of Notes

**STEP 1** – Export data into Excel. (normally in a CSV format)

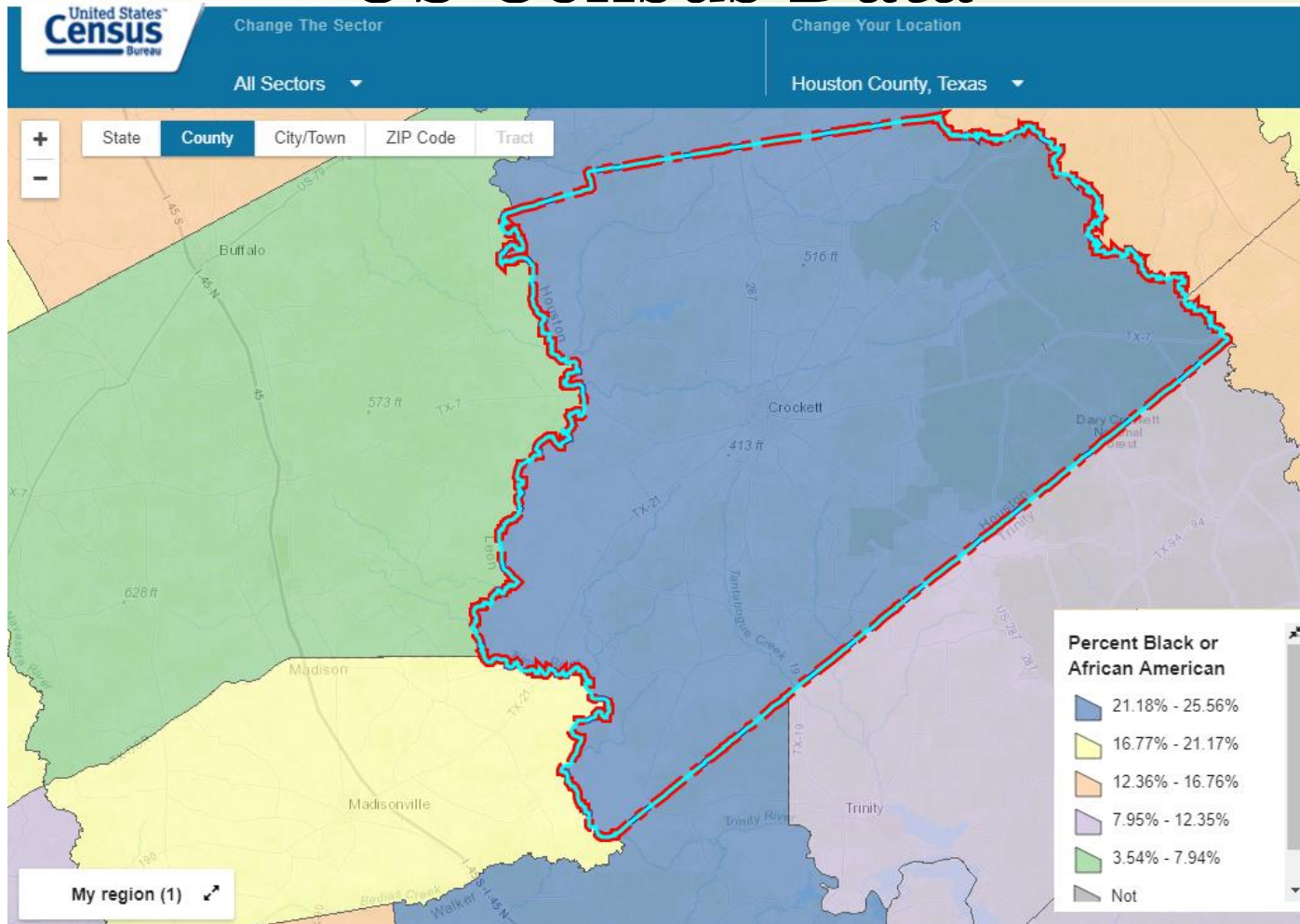
**STEP 2** – Create a column (B2) next to the notes field (A2) to contain the value you are checking for. For example, “FEMA”.

**STEP 3** – Use the “ISNUMBER” formula in cell C2 to check if the value “FEMA” in cell B2 is contained in the notes field in A2.

***=ISNUMBER(SEARCH(B2,A2))***

This will return a value of “TRUE” if the notes text in field A2 contains the string “FEMA” that was written in cell B2.

# US Census Data



URL: <https://cbb.census.gov>

Licensing Model: Free



# Project Management

The screenshot shows a Trello board for 'Houston - Harvey Recovery' with the following columns and tasks:

- Potential Enhancements:**
  - Add the ability to search the map in the command center by address
  - Show the total counts of clients after filtering results
  - Add a card...
- Open Items:**
  - Add a card...
- Done:**
  - split out FEMA status, eligibility and contact info from the notes field.
  - Add a grid to allow for rapid collection of barriers, FEMA, email, and phone. (1 comment)
  - Integrate HMIS ID for linked clients into the command center
  - add ability to filter by FEMA eligibility, barriers, exit status, and homeless history.
  - Add the ability to filter by survey ID
  - add exit (maybe with destination) and record deleted to "archive reason"
  - add ability to sort by multiple columns
  - create user end user training docs for the mobile app
  - create user end user training docs for the command center
- Technical Considerations:**
  - Revise HUD data standards to include new project type for disaster shelters?
  - Client consent is not part of the data standards or the CSV
  - HUD CSV imports are for longitudinal data, census is as of a point in time
  - Lessons Learned (1 comment)
  - Add a card...

Tools Used: Trello.com

Licensing Model: Freemium



# Contact Management


Texas CoC Contacts

Email Address

First Name

Last Name

Region

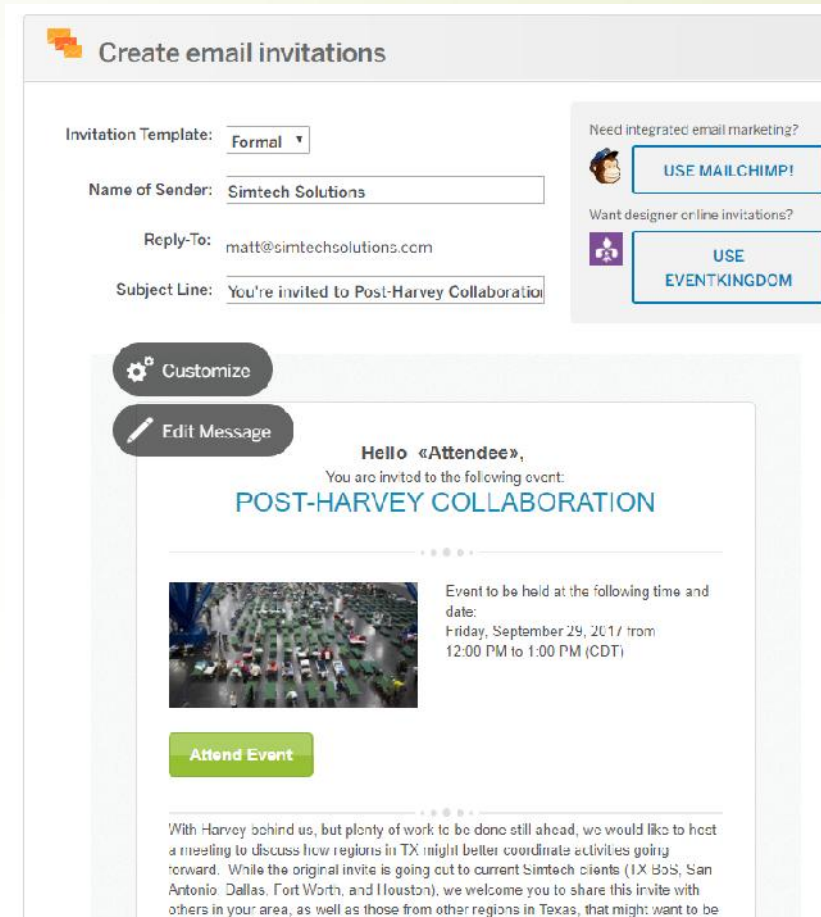


MailChimp is a simple tool to manage email lists and send out blast emails to all participants.

Tool: [mailchimp.com](http://mailchimp.com), form is at <http://eepurl.com/c4uPMr>  
Licensing Model: Freemium



# Event Management



The screenshot shows the 'Create email invitations' interface in EventBrite. It includes a form for setting up an email invitation with the following fields:

- Invitation Template: Formal
- Name of Sender: Simtech Solutions
- Reply-To: matt@simtechsolutions.com
- Subject Line: You're invited to Post-Harvey Collaboration

On the right side, there are two promotional buttons:

- USE MAILCHIMP! (with a Mailchimp logo)
- USE EVENTKINGDCM (with an EventKingDCM logo)

Below the form, there are two buttons: 'Customize' and 'Edit Message'. The main preview area shows the email content:

Hello «Attendee»,  
You are invited to the following event:  
**POST-HARVEY COLLABORATION**

Event to be held at the following time and date:  
Friday, September 29, 2017 from  
12:00 PM to 1:00 PM (CDT)

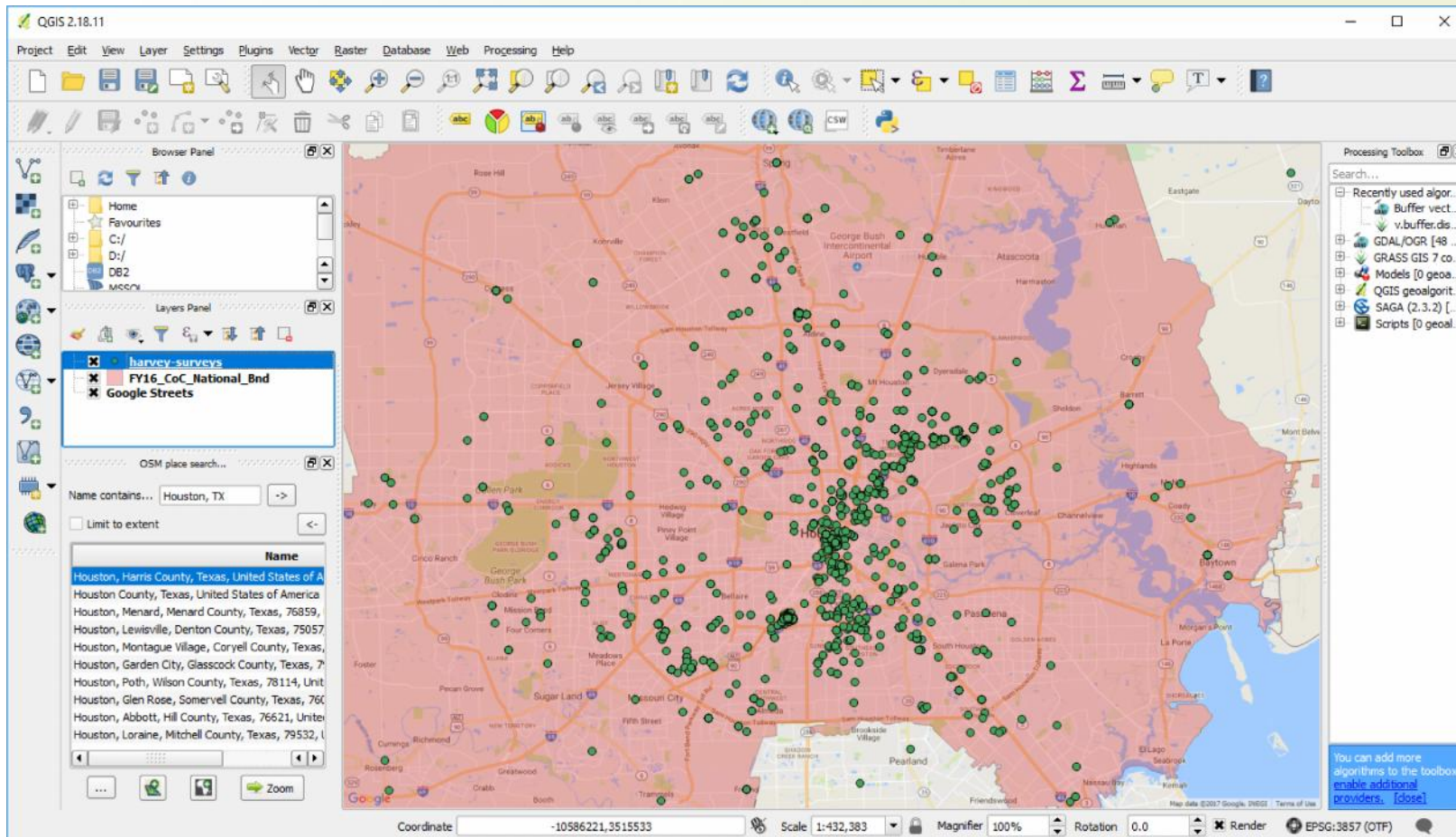
[Attend Event](#)

With Harvey behind us, but plenty of work to be done still ahead, we would like to host a meeting to discuss how regions in TX might better coordinate activities going forward. While the original invite is going out to current Simtech clients (TX BoS, San Antonio, Dallas, Fort Worth, and Houston), we welcome you to share this invite with others in your area, as well as those from other regions in Texas, that might want to be

Tool: EventBrite.com  
Licensing Model: Freemium



# GIS Mapping



URL: <https://QGIS.org>

Licensing Model: Open-Source, no hosting required (FREE)



# Hurricane Harvey Response (cont.)

- Now:
  - GRB & NRG shelters closed
    - 300 currently in Red Cross HCC
    - 100 currently in Red Cross Shell
    - 400 currently in Red Cross Greenspoint
    - 50 currently in St. Thomas More
  - 230 residents moved into Residences on Emancipation
  - 40 families enrolled into HMIS & moved into apartments
  - Households continue to be assessed & assigned to Navigators to be housed and then connected with long term Disaster Case Management





# Preparedness for Future Disasters

- Facilities
- Staff
- Electricity
- Internet
- Database platform
- Pre-planning



# Future Technical Considerations

- Disaster-specific data elements in future HMIS Data Standards?
- HUD CSV Export from Mobile App & Import to HMIS?
- Status of Temporary Emergency Shelters re: HUD reports (PIT, HIC, AHAR, SPM)?



# Lessons Learned

- People with mental health conditions may not be able to access meds
- Those with severe mental and physical health conditions have more extensive service needs
- Senior citizens also have different care needs
- Hard to match the need for help with the resources
- FEMA, Red Cross, and shelters need to be connected ASAP to ensure an effective workflow
- Need to be careful of survey overload
- The Boy Scout motto rings true



**Questions?**





## Contact Info

- Matt Simmonds – [Matt@SimtechSolutions.com](mailto:Matt@SimtechSolutions.com)
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- Erol Fetahagic – [efetahagic@homelesshouston.org](mailto:efetahagic@homelesshouston.org)