California State University, Los Angeles

American Shadows: Mapping Homelessness and Veteran Challenges Across the Nation

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CIS 5270-01: Business Intelligence

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Introduction

The homeless crisis in America presents a multifaceted challenge that reflects wider systemic issues, including economic disparities, lack of affordable housing, the lack of mental health care access, and limited access to substance abuse programs. The homeless crisis in America is growing very rapidly throughout the country. One of the most acute materializations of this national crisis is occurring in Los Angeles, CA. It critically serves as a case study for understanding the depth of homelessness in the United States. In the sprawling urban landscape of Los Angeles, where the glitz and glamour of Hollywood stand in stark contrast to the plight of those living on the streets, the homelessness crisis is not just a matter of public concern but also a humanitarian emergency. The city's struggle with homelessness is exacerbated by a high cost of living, limited affordable housing, and insufficient mental health services, creating a complex web of challenges that demand comprehensive solutions. An important subset of this crisis involves veterans, who often face unique challenges that contribute to their risk of becoming homeless. Factors such as post-traumatic stress disorder (PTSD), physical disabilities, and the difficult transition from military to civilian life can all contribute to the vulnerability of veterans to homelessness. By analyzing data specific to the veteran population, this study aims to shed light on the scope and characteristics of veteran homelessness within the broader context of the crisis in America particularly in Los Angeles. Understanding the specific needs and circumstances of homeless veterans is crucial for developing targeted interventions that can effectively address this aspect of the crisis, offering insights into both the failures and potential solutions within the existing support systems for veterans in the United States.

For this study, we are volunteering our skills to A Community of Friends (ACOF). ACOF's Mission Statement "is to end homelessness through the provision of quality permanent

supportive housing for people with mental illness" (https://www.acof.org/). ACOF is committed to managing its buildings and supporting its tenants from the moment a project is conceived until it is fully occupied, providing permanent affordable housing with onsite supportive services to help our tenants remain stably housed. ACOF has built 45 properties in Los Angeles and Orange County. Their supportive services range from individual case management, referral services, life skills classes, substance abuse recovery assistance, family support and programming, childcare assistance, transportation assistance, and employment services. ACOF is the first agency to successfully implement the permanent supportive housing model throughout LA County. Their focus is to build housing for people who have less than "30% of the area median income (AMI) and have a mental, physical, or developmental disability with a primary focus on AMI. We work to provide people with special needs safe and affordable homes that allow them to focus on their mental and physical health" ("About ACOF").

Data Description Tables

Dataset 1: ACOF Survey Datasets Table

Column Name	Data Type	Description	Example
ID	Integer	Identification number by building	1,2
ACOF Building	Text	Name of the Property	California Hotel
Age	Text	Range of age	50-59

Gender	Text	Male/ Female/ Transgender/ Refuse to say	Male
Race/Ethnicity	Text	Race/ Ethnicity people belong to	White/Caucasian
High Blood Pressure	Text	Current Disease If applicable	High Blood Pressure
High Cholesterol	Text	Current Disease If applicable	High Cholesterol
Diabetes	Text	Current Disease If applicable	Diabetes
Chronic Obstructive Pulmonary Disease	Text	Current Disease If applicable	Chronic Obstructive Pulmonary Disease (lung disease)
Arthritis	Text	Current Disease If applicable	Arthritis
Gum Disease	Text	Current Disease If applicable	Gum Disease
Behavioral Health	Text	Area in which more information is sought-after	Behavioral Health
Medical field	Text	Area in which more information is sought-after	Medical
Dental field	Text	Area in which more information is sought-after	Dental
Vision field	Text	Area in which more information is sought-after	Vision
Nutrition field	Text	Area in which more information is sought-after	Nutrition
Fitness field	Text	Area in which more information is sought-after	Fitness

Substance Abuse Recovery	Text	Area in which more information is sought-after	Substance Abuse Recovery

Dataset 2: 2011-2023-PIT-Veteran-Counts-by-State.xlsx (live.com) (2023 AHAR: Part 1 - PIT Estimates of Homelessness in the U.S. | HUD USER)

Column Name	Data Type	Description	Example
States	Integer	States of USA	New York
Year	Date	Individual Years	2022
Number of CoCs	Integer	Number of Continuum care (Regional or Local working bodies coordinating housing services)	2
Homeless Veterans	Integer	Total number of Homeless Veterans	31
Sheltered ES Homeless Veterans	Integer	Number of Sheltered Veterans living in Emergency Shelters	76
Sheltered TH Homeless Veterans	Integer	Number of Sheltered Veterans living in Transitional Housing	31
Sheltered SH Homeless Veterans	Integer	Number of Sheltered Veterans living in Safe Havens	61
Sheltered Total Homeless Veterans	Integer	Total Number of Veterans who were sheltered	90

Unsheltered Homeless Veterans	Integer	Number of Veterans who remained unsheltered	20

Dataset 3: 2007-2023-HIC-Counts-by-State.xlsx (live.com) (2023 AHAR: Part 1 - PIT Estimates of Homelessness in the U.S. | HUD USER)

Column Name	Data Type	Description	Example
States	Integer	States of USA	New York
Year	Date	Individual Years	2022
Total Year-Round Beds (ES, TH, SH)	Integer	Combined Number of beds available in ES, TH, SH facilities throughout the year.	210
Dedicated Veteran Beds Veterans	Integer	Total Number of beds available in ES,TH,SH facilities that are specifically designated to veterans.	31

Dataset 4: County of Los Angeles: Homeless Counts 2020

Column Name	Data Type	Description	Example
ObjectID	Integer	Numerical ID of City/Neighborhood	218
CSA_Label	Text	Name of City/Neighborhood	Los Angeles - Wholesale District
Total_Unsheltered_Pop	Integer	Count of Total Unsheltered Population	2598
Total_Sheltered_Pop	Integer	Count of Total Sheltered Population	31

Total_Pop	Integer	Count of Unsheltered and Sheltered Population	1676
Data_Source	Text	Organization That Provided Data	Los Angeles Homeless Services Authority (LAHSA)
Square_Miles	Integer	Square Miles of the City/Neighborhood	6.414302802
Density_Unsheltered	Integer	Density of Unsheltered	405.0323286
Density_Sheltered	Integer	Density of Sheltered	356.5469343
Density_Total	Integer	Count of Unsheltered and Sheltered Density	761.5792629
Shape__Area	Integer	Coordinates of the City Area	24256071.89
Shape__Length	Integer	Coordinates of the City Length	28314.59881

Dataset 5: ACOF Properties Shapefile

Column Name	Data Type	Description	Example
original_Name of Property	Text	Name of ACOF Property	Casa del Sol
original_Address	Text	Address of ACOF Property	10966 W Ratner St
original_City	Text	City of ACOF Property	Sun Valley
original_State	Text	State of ACOF Property	CA

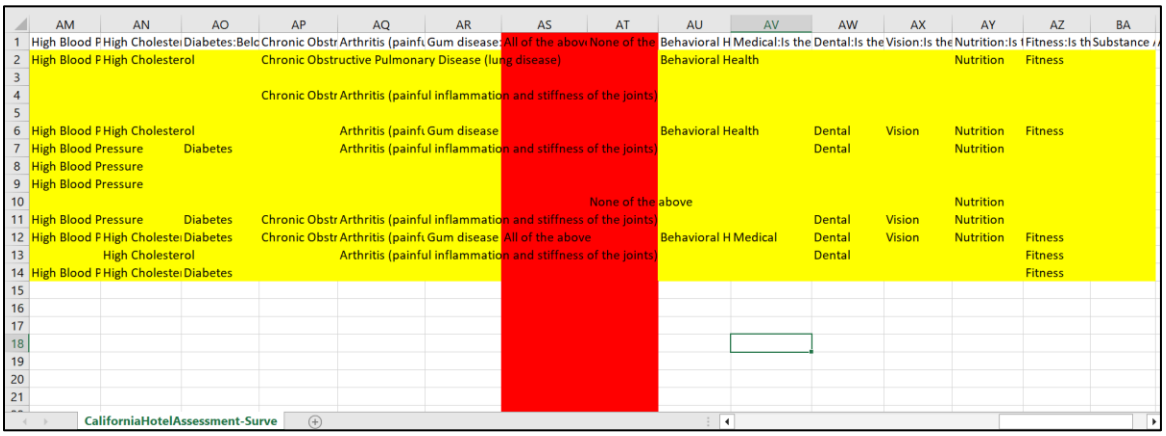
original_Zip	Text	Zip Code of ACOF Property	91352
original_Units	Text	Units Description of ACOF Property	44-unit apartment project
lat	Integer	Latitude of ACOF Property	34.21679
lon	Integer	Longitude of ACOF Property	-118.36932

Data Cleaning: ACOF Survey

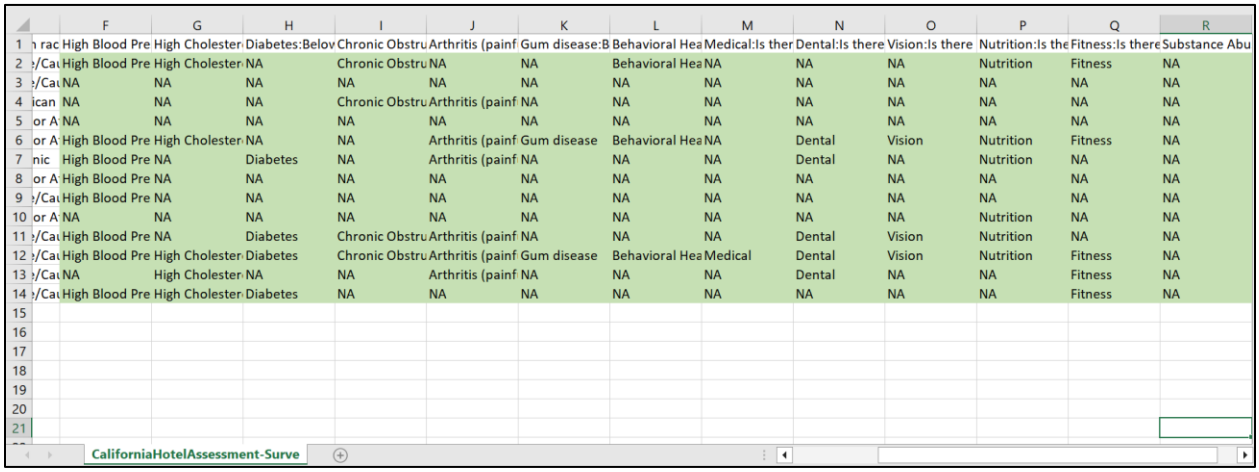
1. Removal of columns/ Filling up missing values:

Dataset has columns like 'All of the above/ None of the above' which reflect repeated information that has already chosen earlier so need to be removed. All other highlighted columns are with missing values so filled up with 'NA' value before fetching them to Tableau.

Pre-Cleaning:



Post Cleaning:



	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	h rac	High Blood Pre	High Cholester	Diabetes:Belov	Chronic Obstru	Arthritis (painf	Gum disease:B	Behavioral Hea	Medical:Is ther	Dental:Is there	Vision:Is there	Nutrition:Is the	Fitness:Is there	Substance Abu
2	/Cau	High Blood Pre	High Cholester	NA	Chronic Obstru	NA	NA	Behavioral Hea	NA	NA	NA	Nutrition	Fitness	NA
3	/Cau	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4	ican	NA	NA	NA	Chronic Obstru	Arthritis (painf	NA	NA	NA	NA	NA	NA	NA	NA
5	or A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	or A	High Blood Pre	High Cholester	NA	NA	Arthritis (painf	Gum disease	Behavioral Hea	NA	Dental	Vision	Nutrition	Fitness	NA
7	nic	High Blood Pre	NA	Diabetes	NA	Arthritis (painf	NA	NA	NA	Dental	NA	Nutrition	NA	NA
8	or A	High Blood Pre	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	/Cau	High Blood Pre	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
10	or A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Nutrition	NA	NA
11	/Cau	High Blood Pre	NA	Diabetes	Chronic Obstru	Arthritis (painf	NA	NA	NA	Dental	Vision	Nutrition	NA	NA
12	/Cau	High Blood Pre	High Cholester	Diabetes	Chronic Obstru	Arthritis (painf	Gum disease	Behavioral Hea	Medical	Dental	Vision	Nutrition	Fitness	NA
13	/Cau	NA	High Cholester	NA	NA	Arthritis (painf	NA	NA	NA	Dental	NA	NA	Fitness	NA
14	/Cau	High Blood Pre	High Cholester	Diabetes	NA	NA	NA	NA	NA	NA	NA	NA	Fitness	NA
15														
16														
17														
18														
19														
20														
21														

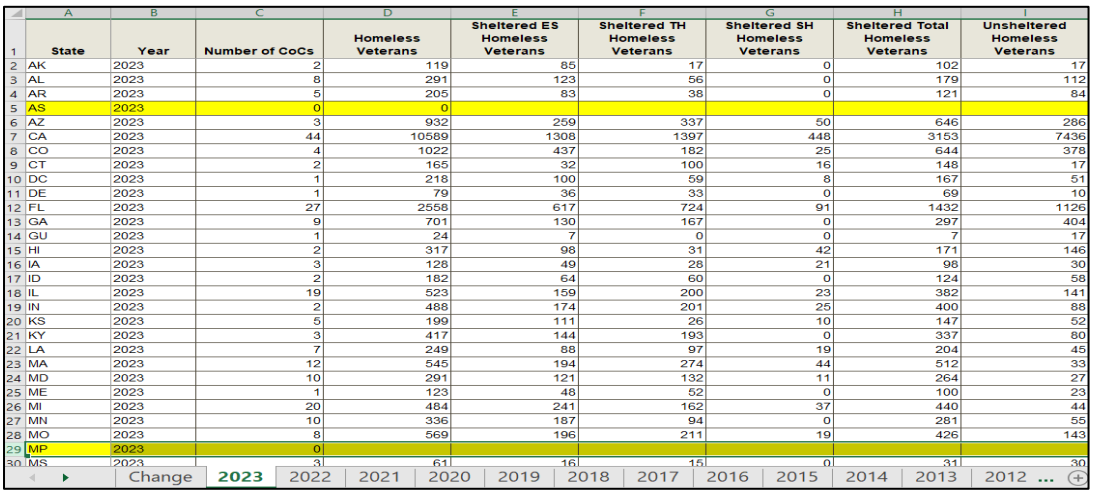
CaliforniaHotelAssessment-Surve

2. Removal of Null Values/Missing Values

Missing values in measures were replaced with Zero. All the states which have no values in the row's column are assigned a value of zero for its various measures. The process is repeated for all the four years 2022,2021,2022,2023 datasheets.

Data Cleaning: 2011-2023-PIT-Veteran-Counts-by-State.xlsx (live.com) (2023 AHAR: Part 1 - PIT Estimates of Homelessness in the U.S. | HUD USER)

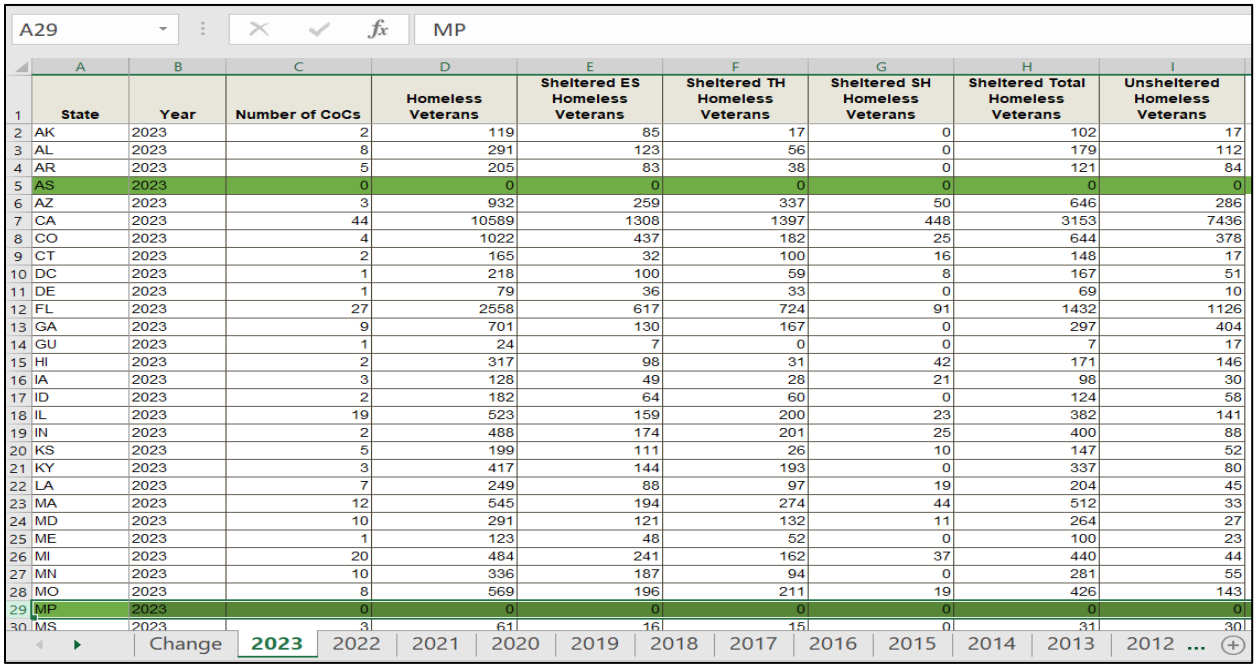
Pre-Cleaning:



	A	B	C	D	E	F	G	H	I
1	State	Year	Number of CoCs	Homeless Veterans	Sheltered ES Homeless Veterans	Sheltered TH Homeless Veterans	Sheltered SH Homeless Veterans	Sheltered Total Homeless Veterans	Unsheltered Homeless Veterans
2	AK	2023	2	119	85	17	0	102	17
3	AL	2023	8	291	123	56	0	179	112
4	AR	2023	5	205	83	38	0	121	84
5	AS	2023	0	0					
6	AZ	2023	3	932	259	337	50	646	286
7	CA	2023	44	10589	1308	1397	448	3153	7436
8	CO	2023	4	1022	437	182	25	644	378
9	CT	2023	2	165	32	100	16	148	17
10	DC	2023	1	218	100	59	8	167	51
11	DE	2023	1	79	36	33	0	69	10
12	FL	2023	27	2558	617	724	91	1432	1126
13	GA	2023	9	701	130	167	0	297	404
14	GU	2023	1	24	7	0	0	7	17
15	HI	2023	2	317	98	31	42	171	146
16	IA	2023	3	128	49	28	21	98	30
17	ID	2023	2	182	64	60	0	124	58
18	IL	2023	19	523	159	200	23	382	141
19	IN	2023	2	488	174	201	25	400	88
20	KS	2023	5	199	111	26	10	147	52
21	KY	2023	3	417	144	193	0	337	80
22	LA	2023	7	249	88	97	19	204	45
23	MA	2023	12	545	194	274	44	512	33
24	MD	2023	10	291	121	132	11	264	27
25	ME	2023	1	123	48	52	0	100	23
26	MI	2023	20	484	241	162	37	440	44
27	MN	2023	10	336	187	94	0	281	55
28	MO	2023	8	569	196	211	19	426	143
29	MP	2023	0						
30	MS	2023	3	61	16	15	0	31	30

Change | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 ...

Post Cleaning:



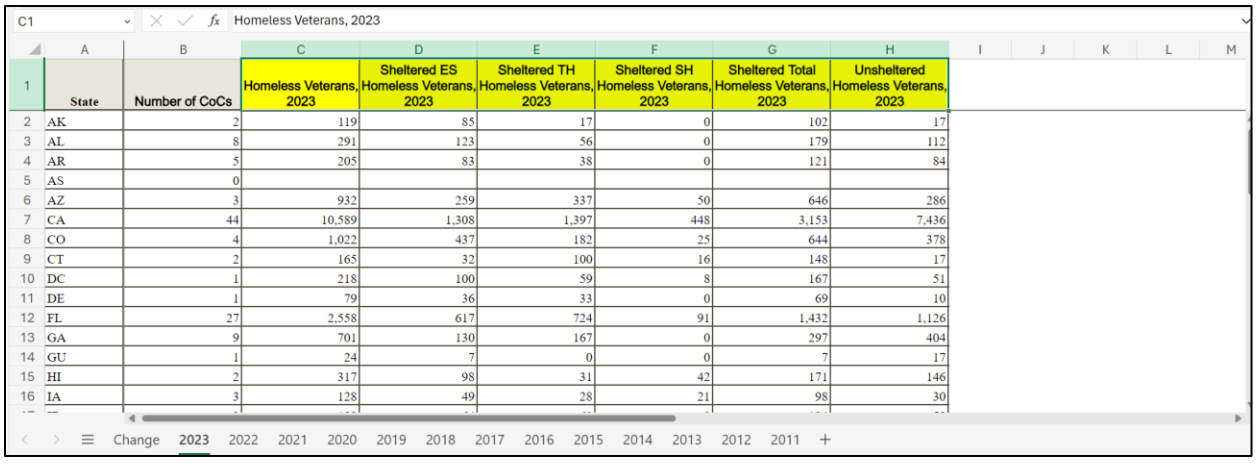
	State	Year	Number of CoCs	Homeless Veterans	Sheltered ES Homeless Veterans	Sheltered TH Homeless Veterans	Sheltered SH Homeless Veterans	Sheltered Total Homeless Veterans	Unsheltered Homeless Veterans
2	AK	2023	2	119	85	17	0	102	17
3	AL	2023	8	291	123	56	0	179	112
4	AR	2023	5	205	83	38	0	121	84
5	AS	2023	0	0	0	0	0	0	0
6	AZ	2023	3	932	259	337	50	646	286
7	CA	2023	44	10589	1308	1397	448	3153	7436
8	CO	2023	4	1022	437	182	25	644	378
9	CT	2023	2	165	32	100	16	148	17
10	DC	2023	1	218	100	59	8	167	51
11	DE	2023	1	79	36	33	0	69	10
12	FL	2023	27	2558	617	724	91	1432	1126
13	GA	2023	9	701	130	167	0	297	404
14	GU	2023	1	24	7	0	0	7	17
15	HI	2023	2	317	98	31	42	171	146
16	IA	2023	3	128	49	28	21	98	30
17	ID	2023	2	182	64	60	0	124	58
18	IL	2023	19	523	159	200	23	382	141
19	IN	2023	2	488	174	201	25	400	88
20	KS	2023	5	199	111	26	10	147	52
21	KY	2023	3	417	144	193	0	337	80
22	LA	2023	7	249	88	97	19	204	45
23	MA	2023	12	545	194	274	44	512	33
24	MD	2023	10	291	121	132	11	264	27
25	ME	2023	1	123	48	52	0	100	23
26	MI	2023	20	484	241	162	37	440	44
27	MN	2023	10	336	187	94	0	281	55
28	MO	2023	8	569	196	211	19	426	143
29	MP	2023	0	0	0	0	0	0	0
30	MS	2023	3	61	16	15	0	31	30

Change | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 ...

1. **Extraction of Year from Header and creating a Year Column from it.**

I incorporated the year from the header row into a new column during data cleaning to ensure accurate year-to-year visualization. With the year information integrated, the dataset is now prepared for comprehensive trend analysis and visualization over time.

Pre Cleaning:



	State	Number of CoCs	Homeless Veterans, 2023	Sheltered ES Homeless Veterans, 2023	Sheltered TH Homeless Veterans, 2023	Sheltered SH Homeless Veterans, 2023	Sheltered Total Homeless Veterans, 2023	Unsheltered Homeless Veterans, 2023
2	AK	2	119	85	17	0	102	17
3	AL	8	291	123	56	0	179	112
4	AR	5	205	83	38	0	121	84
5	AS	0						
6	AZ	3	932	259	337	50	646	286
7	CA	44	10,589	1,308	1,397	448	3,153	7,436
8	CO	4	1,022	437	182	25	644	378
9	CT	2	165	32	100	16	148	17
10	DC	1	218	100	59	8	167	51
11	DE	1	79	36	33	0	69	10
12	FL	27	2,558	617	724	91	1,432	1,126
13	GA	9	701	130	167	0	297	404
14	GU	1	24	7	0	0	7	17
15	HI	2	317	98	31	42	171	146
16	IA	3	128	49	28	21	98	30

Change | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011

Post cleaning:

B1 Year

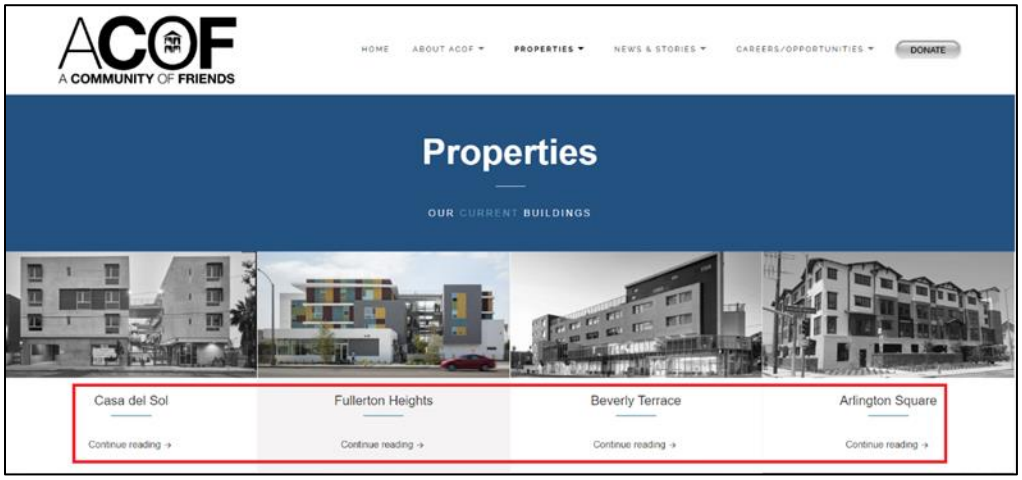
	State	Year	Number of CoCs	Homeless Veterans	Sheltered ES Homeless Veterans	Sheltered TH Homeless Veterans	Sheltered SH Homeless Veterans	Sheltered Total Homeless Veterans	Unsheltered Homeless Veterans
2	AK	2020	2	94	61	21	0	82	12
3	AL	2020	8	329	169	59	3	231	98
4	AR	2020	4	188	68	39	0	107	81
5	AS	2020	0	0	0	0	0	0	0
6	AZ	2020	3	921	159	372	48	579	342
7	CA	2020	44	11401	1619	1633	153	3405	7996
8	CO	2020	4	1044	397	271	28	696	348
9	CT	2020	2	199	48	130	9	187	12
10	DC	2020	1	302	121	133	0	254	48
11	DE	2020	1	78	34	37	0	71	7
12	FL	2020	27	2436	555	799	116	1470	966
13	GA	2020	9	764	216	160	0	376	388
14	GU	2020	1	21	6	0	0	6	15
15	HI	2020	2	485	130	70	44	244	241
16	IA	2020	3	154	77	36	23	136	18
17	ID	2020	2	178	60	52	0	112	66
18	IL	2020	19	736	199	282	23	504	232
19	IN	2020	2	530	207	231	22	460	70
20	KS	2020	5	203	97	77	0	174	29

Change | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 ...

Data Cleaning: ACOF Properties Shapefile

Pre-Cleaning:

I visited ACOF's website and navigated to the section detailing their properties. For each property listed, I conducted a Google search using the property's name and zip code as found on ACOF's site.



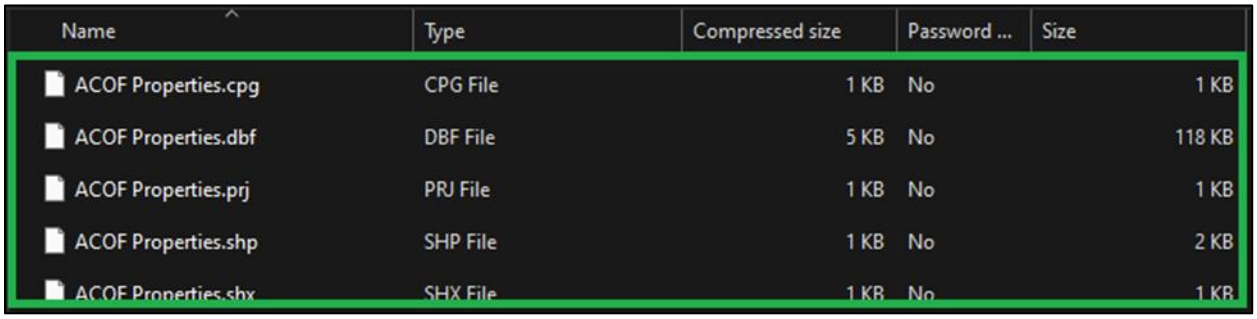
This process was repeated for all properties featured. The search results provided me with the necessary details for each location, which I then compiled into a list in Microsoft Excel. This list includes the name of the property, address, city, state, zip code, and the number of units available at each property.

Name of Property	Address	City	State	Zip	Units
Casa del Sol	10966 W Ratner St	Sun Valley	CA	91352	44 unit apartment project
Fullerton Heights	1220 E Orangethorpe	Fullerton	CA	92831	36 one and two bedroom unit
Beverly Terrace	3330 W Beverly Blvd	Los Angeles	CA	90004	40 one and two-bedroom uni
Arlington Square	3101 Venice Blvd	Los Angeles	CA	90019	24 studio units, 23 one-bedrc
Silver Star Apartments	6570 West Blvd	Los Angeles	CA	90043	48 one bedroom units and on
Cedar Springs	1345 Palomares St.	La Verne	CA	91750	36 units and retail building
Avalon Apartments	13218 Avalon Blvd	Los Angeles	CA	90067	55 studio and family units
Vista del Rio	1600 W Memory Lane	Santa Ana	CA	92706	41 one-bedroom units
New Directions Sepulveda I	16000 Lassen St	Los Angeles	CA	91343	76 studio units
New Directions Sepulveda II	9700 Woodley Ave	Los Angeles	CA	91343	73 studio units
Avenida Villas	9602 W. Ball Road	Anaheim	CA	92804	29 one-bedroom units
Osborne Place	12232 Osborne Place	Pacoima	CA	91331	64 family units
Willis Avenue Apartments	14731 W Rayen St	Van Nuys	CA	91402	42 studio units
Villas at Gower	1726 N Gower St	Los Angeles	CA	90028	70 studio and family units
Vendome Palms	975 N Vendome St	Los Angeles	CA	90026	36 studio units
Rayen Apartments	15320 Rayen Street	North Hills	CA	91343	49 studios, one and two bedr
Step Up on Fifth	1548 Fifth St	Santa Monica	CA	90401	46 studio units
Woodland Terrace	15532 Nordhoff St	North Hills	CA	91343	31 family units
Camino de Las Flores	1063 Eastman Ave	Los Angeles	CA	90023	25 family units with licensed
Central Court	1316 E 21st ST	Los Angeles	CA	90011	7 units (4-BR, two 1-BR, 4 effi
Willowbrook Apartments	12612 S Wilmington Ave	Compton	CA	90222	24 family units
Santos Plaza	3837 South Western Avenue	Los Angeles	CA	90062	37 units (36 SRO units, 1 two-b
Gateways	1801 Lake Shore Ave	Los Angeles	CA	90026	30 units (29 studios and one 1
La Primavera	1330 S Olive St	Los Angeles	CA	90015	36 units (35 studios and one (
Cornerstone Apartments	14128 Calvert St	Van Nuys	CA	91401	36 studio and family units
Step Out	2010 E El Segundo Blvd	Compton	CA	90222	Eleven 2-BR townhouses for e
Amistad Apartments	2037 Lincoln Park Ave	Los Angeles	CA	90031	49 family units
Brandon Apartments	735 Hartford Avenue	Los Angeles	CA	90017	32 family units
Sonya Gardens	642 1/2 W 85th St	Los Angeles	CA	90044	60 studio units
Maryland Apartments	1318 Maryland St	Los Angeles	CA	90017	30 studio units
Fox Normandie	849 S Normandie Ave	Los Angeles	CA	90005	48 units (36 studios and 12 on
Vista Nueva	130 La Fayette Park Pl	Los Angeles	CA	90057	30 family units and a child car
Fedora Apartments	836 S Fedora St	Los Angeles	CA	90005	23 studio units
Firestone Phoenix	7321 Miramonte Blvd	Los Angeles	CA	90001	44 apartment units including
California Hotel	1140 S Pacific Ave	San Pedro	CA	90731	40 SRO units
39 West	3885 S Western Ave	Los Angeles	CA	90062	34 studio units
Figueroa Court	9130 S Figueroa St	Los Angeles	CA	90003	40 studio units
Gower Street Apartments	1140 N Gower St	Hollywood	CA	90038	54 studio units and one one-b
235 Berendo	235 S Berendo St	Los Angeles	CA	90004	12 studios and twelve 1-BR ur
Las Palomas Hotel	2201 E 1st St	Los Angeles	CA	90033	61 studio units and one 1-BR u
226 Berendo	226 S Berendo St	Los Angeles	CA	90004	48 studio units
Parker Hotel	725 S Witmer	Los Angeles	CA	90017	32 SRO units
Selby Hotel	1740 N Hudson Ave	Los Angeles	CA	90028	28 studio units and one (1) on
Orbison House	5726 Camerford Ave	Los Angeles	CA	90038	Five bedroom house and two

After compiling the list into an Excel spreadsheet, I saved it as a CSV file. Subsequently, I downloaded QGIS Desktop, a free GIS software. Within QGIS Desktop, I installed a plugin

named “mmqg gis”, which is designed to geocode addresses. This plugin enabled me to create a shapefile that could be saved and used for further analysis.

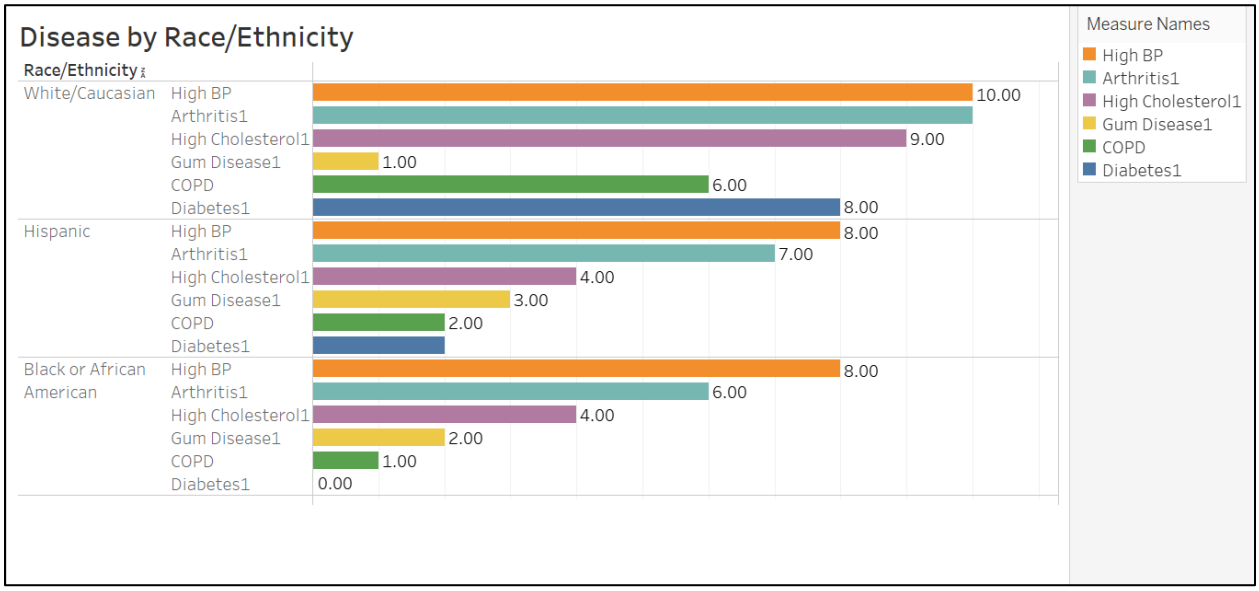
Post-Cleaning:



Name	Type	Compressed size	Password ...	Size
ACOF Properties.cpg	CPG File	1 KB	No	1 KB
ACOF Properties.dbf	DBF File	5 KB	No	118 KB
ACOF Properties.prj	PRJ File	1 KB	No	1 KB
ACOF Properties.shp	SHP File	1 KB	No	2 KB
ACOF Properties.shx	SHX File	1 KB	No	1 KB

Once the file was created, I moved all files into a Zip folder, so they could be utilized as a shapefile in Tableau to enhance a map with points representing all ACOF properties located in Los Angeles and Orange County.

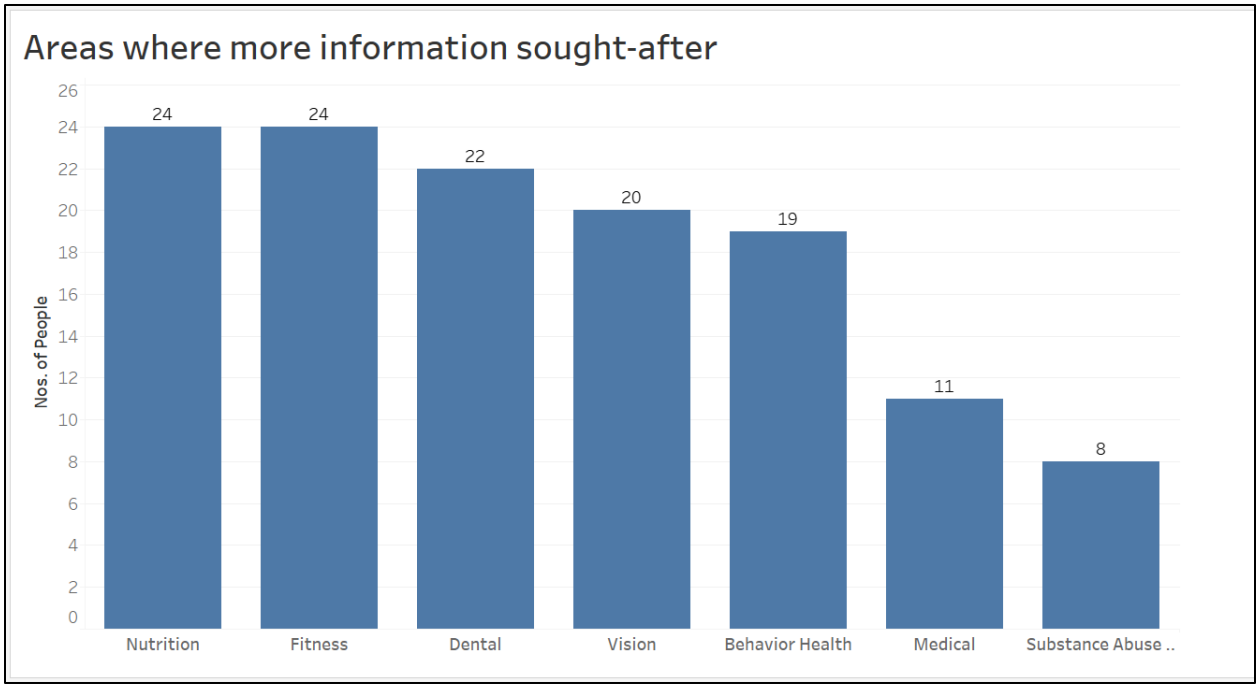
Analysis Question 1: What health diseases are highly impacting homeless people based on their race/ethnicity? (Horizontal bar chart with calculated field)



This analysis represents the various diseases that people are currently suffering from based on their race/ ethnicity. The purpose is to find the involvement of genetic factors in racial and ethnic differences in health and diseases as many of them are likely to occur among people who trace their ancestry to a particular geographic area. Some of the diseases are likely to occur due to sedentary lifestyle and poor eating habits like high blood pressure, high cholesterol and these are observed in all races and ethnicities. Diabetes is considered as with the genetic influences and found mostly in White/ Caucasian people as per the chart. Arthritis has also emerged as one of the major diseases, affecting individuals across all races to varying degrees.

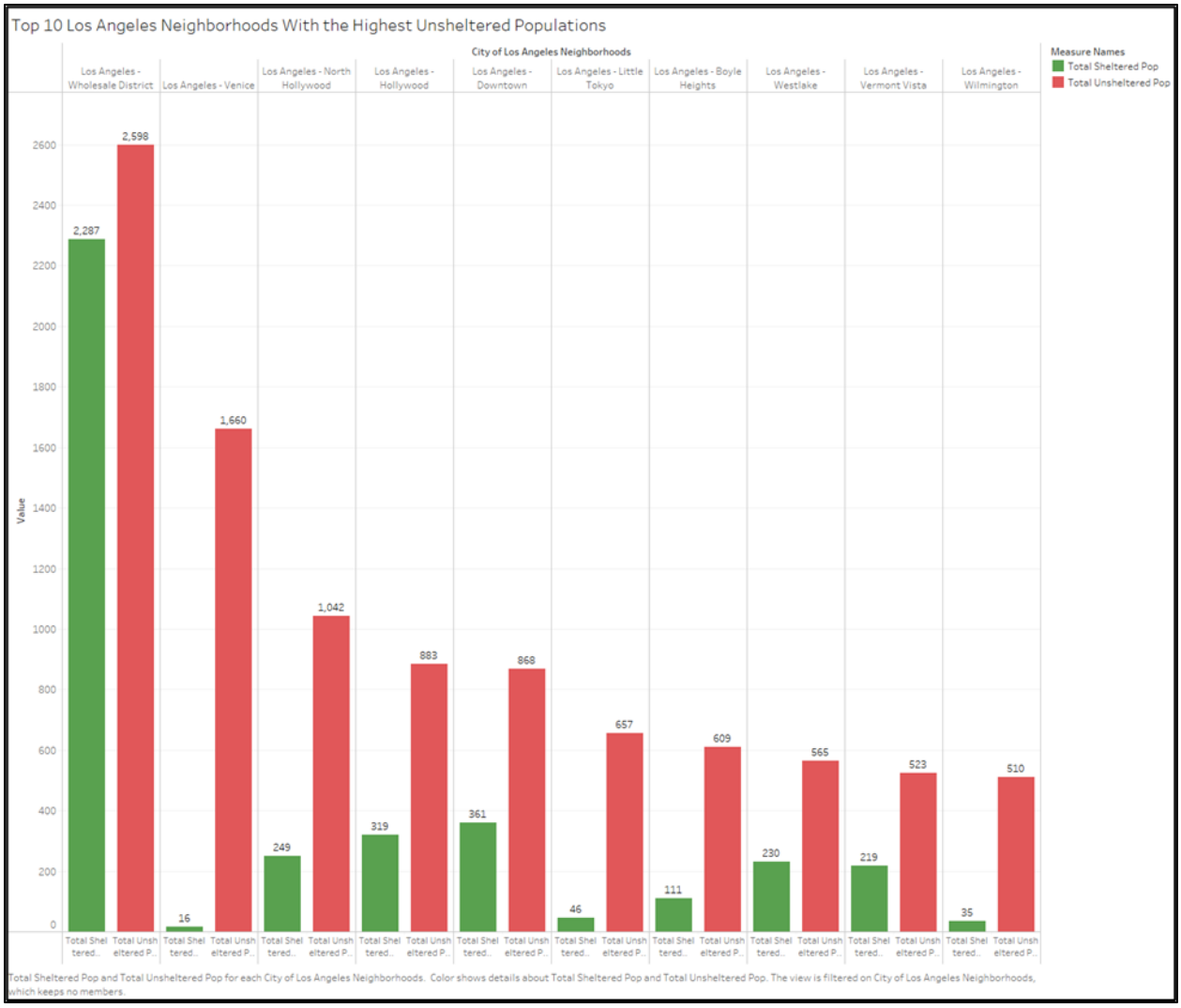
Analysis Question 2: What are the different areas in which people are seeking more information to improve their health and well-being? (Vertical bar chart with calculated field)

As dataset has information about the areas in which people are more interested to know further to improve their health and well-being so this chart highlights which areas ACOF should put more emphasis and create resources that helps these people as per their interests. Besides the various health conditions, it is appreciated that people are aware of the values of all forms of health-related issues and showing their willingness to know more. Nutrition, fitness, dental, vision and behavior health are mostly sought-after health areas.



Analysis Question 3: What are the Top 10 neighborhoods in Los Angeles with the highest unsheltered homeless population? (Geographic Map & Bar Chart)

We will delve into an insightful exploration of the Los Angeles homeless population, focusing on a critical and pressing issue: homelessness. Specifically, we will shed light on the top 10 neighborhoods within Los Angeles that are grappling with the highest numbers of unsheltered individuals in 2020. The definition of homeless people who are "Unsheltered means living in cars, tents, and out in the open" (Palta). The sheltered homeless population is defined as "people [who] spend the night in emergency shelters or transitional, or temporary housing" ("Sheltered Homeless"). Utilizing a combination of data analysis and geographic mapping, we aim to not only highlight these areas but also provide a deeper understanding of the magnitude and distribution of the unsheltered population across the city. By pinpointing these key neighborhoods, we seek to bring attention to those locations where most are in need and consider how policy, community engagement, availability of low-income housing, and resources can be directed to make a meaningful difference in the lives of many.



The bar chart above represents the Top 10 Los Angeles neighborhoods with the highest unsheltered homeless population. The Los Angeles Wholesale District has the largest amount of sheltered (2,287) and unsheltered (2,598) homeless population. The Los Angeles Wholesale District covers approximately 100 blocks in the downtown area of Los Angeles. This expansive neighborhood is a dynamic blend of retail and wholesale businesses, including apparel, accessories, flowers, and toys. The Wholesale District also consists of the world-famous Skid Row. Skid Row is known as the largest population of homeless people in the United States.

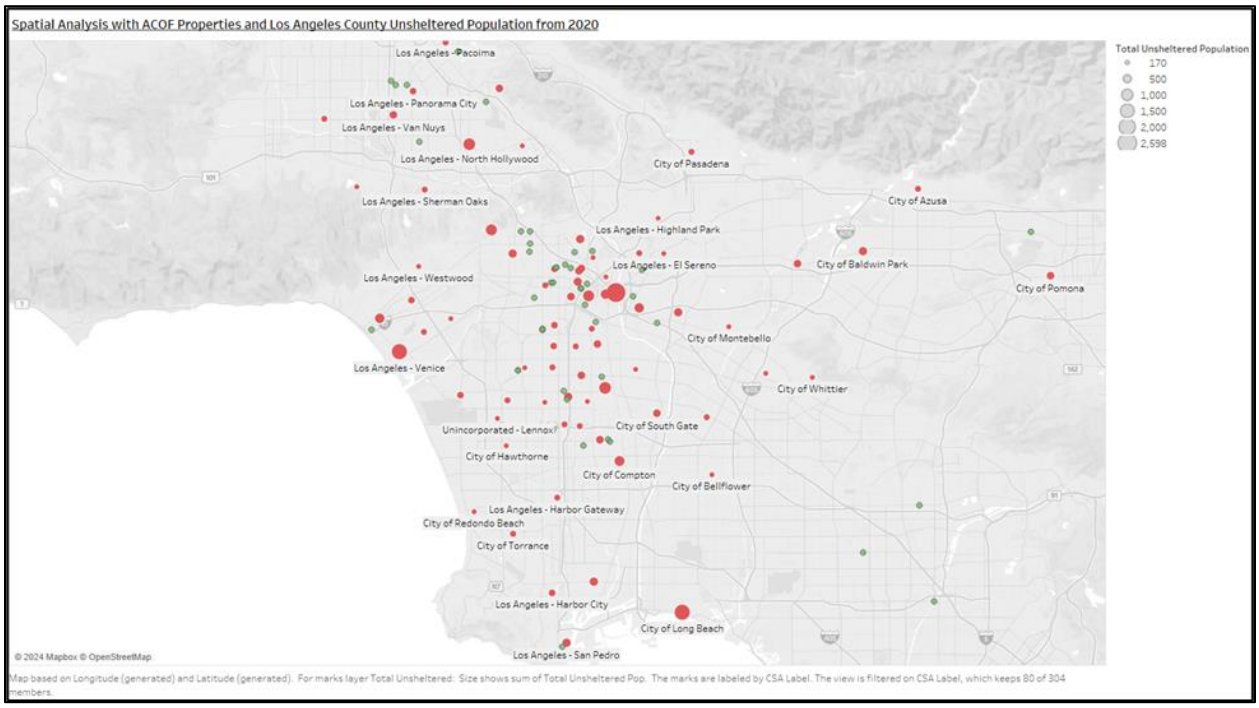
Venice holds the second position with a total of 1,660 individuals, experiencing homelessness without shelter. The issue of homelessness in Venice has sparked considerable debate, attributed to the proximity of its expensive housing market, significant property taxes levied on homeowners, and the impact on one of Los Angeles's most iconic beaches. The Venice homeless issues have been a breeding ground for political statements and controversy. In 2022, "The sheriff of Los Angeles County dispatched deputies Tuesday to Venice Beach to assess the homelessness problem, a day after he called out city officials for failing to adequately address the growing number of people sleeping outdoors along the famous strand" (Sanchez). Venice is in the jurisdiction of the Los Angeles Police Department and not the Sheriff's Department. This was a political scheme by Sheriff Alex Villanueva to gain votes for the upcoming election.

In third place for the number of unsheltered individuals in North Hollywood, with a count of 1,042 homeless people. This neighborhood is recognized for its development and higher-than-average temperatures compared to other Los Angeles areas, factors that contribute to it being a preferred location for homeless encampments. The situation with homelessness in North Hollywood has escalated to include several fires and acts of violence affecting residents. A notable incident involved a 24-year-old woman who resulted in the stabbing of a 24-year-old woman who "is recovering from being stabbed in the head with gardening shears in an unprovoked attack by a homeless man in North Hollywood" (Edwards). Despite these challenges, the community's safety concerns have significantly increased due to the ongoing homelessness crisis.

Hollywood, CA, holds the fourth position, renowned globally not just for its 883 unsheltered homeless individuals, but also as a tourist magnet due to iconic landmarks like the

TCL Chinese Theater and the Hollywood Walk of Fame. Following closely in fifth place is Downtown Los Angeles, home to 868 unsheltered homeless people. Little Tokyo ranks sixth, with 657 unsheltered homeless individuals. Notably, Little Tokyo's small geographical size accentuates its homeless population density, making it the area with the highest number of unsheltered homeless people per square mile. Securing the seventh spot is Boyle Heights, accommodating 609 unsheltered homeless individuals. Close on its heels, the Westlake neighborhood, nestled between Koreatown and Echo Park, claims the eighth position with 565 unsheltered homeless people. Ninth place goes to Vermont Vista, home to 523 unsheltered individuals, while Wilmington rounds out the top ten, hosting 510 unsheltered homeless people.

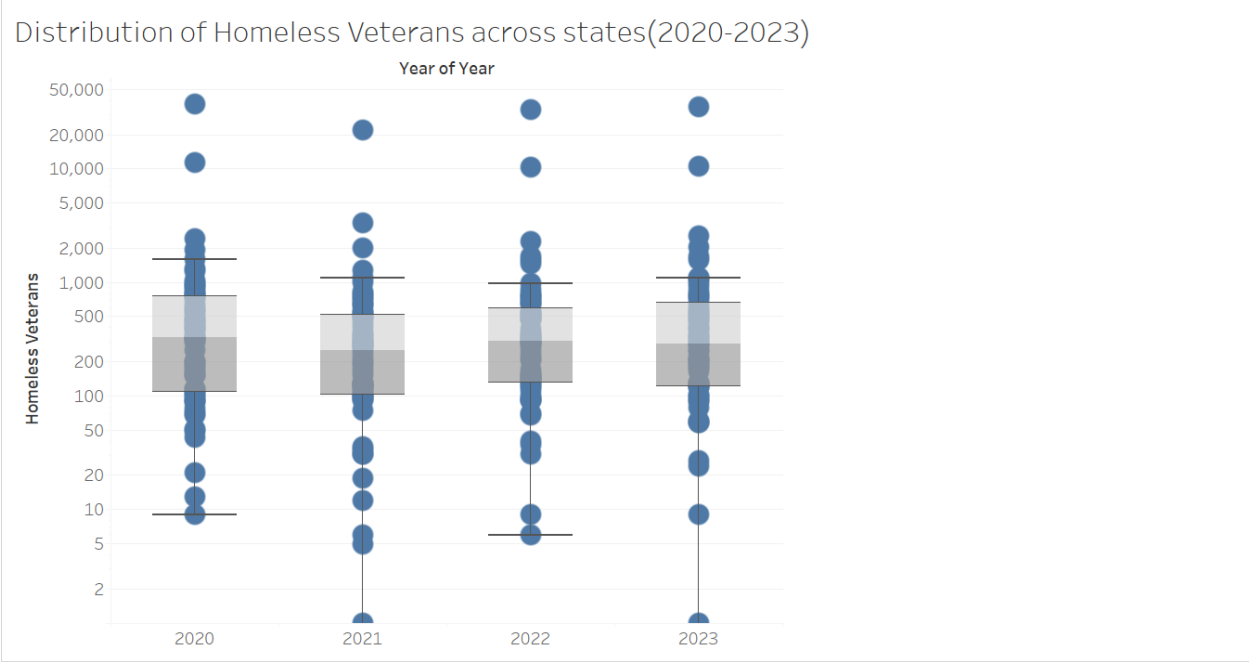
Geographical Map – Spatial Analysis with ACOF Properties and Los Angeles County unsheltered population from 2020



The map displayed above is a bubble map that illustrates the total unsheltered homeless population in 2020, utilizing the same data as the bar chart detailing the top 10 Los Angeles

neighborhoods with the largest unsheltered homeless populations. Created with two shapefiles, the map features red circles representing the total unsheltered homeless population across various neighborhoods in Los Angeles County. Additionally, green points on the map highlight the locations of ACOF's low-income housing properties throughout the county. This visual aid serves as a valuable tool for ACOF in strategizing the placement of future low-income housing projects to more effectively assist the unsheltered homeless community.

Analysis Question 4: How does the distribution of homeless veterans change over the four-year period (2020 to 2023), and what are the variations observed across different states during this time frame? **(**Box and Whisker Plot**)**

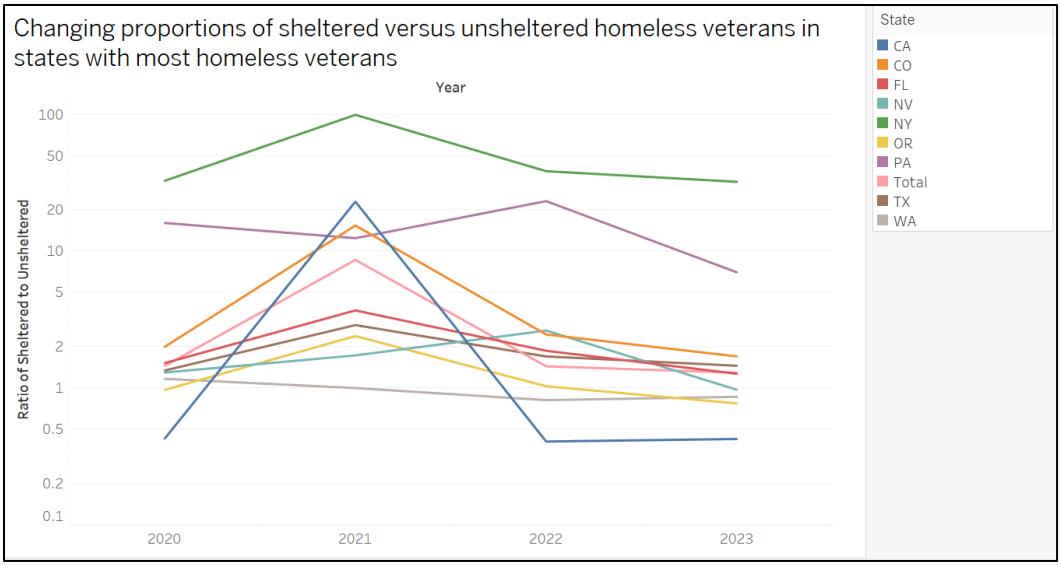


This visualization shows how homeless veterans are spread across states from 2020 to 2023. By looking at the middle line and how wide the boxes are, we can see if there are more or fewer homeless veterans each year. Longer lines and dots outside the boxes mean that some states have big changes in homeless veteran numbers compared to others. If there are dots far away from the boxes, that state has high or low numbers compared to others. It also provides us

with the median value of Homeless Veteran for each year, the decrease in the median value from year to year shows a decrease in the count of homeless veterans across overall in USA and vice-versa. California (CA) is extreme outline in each year, meaning there are the most Homeless Veterans. On Contrast to it in Northern Mariana Island (MP) there are no homeless veterans in 2021 and 2023.

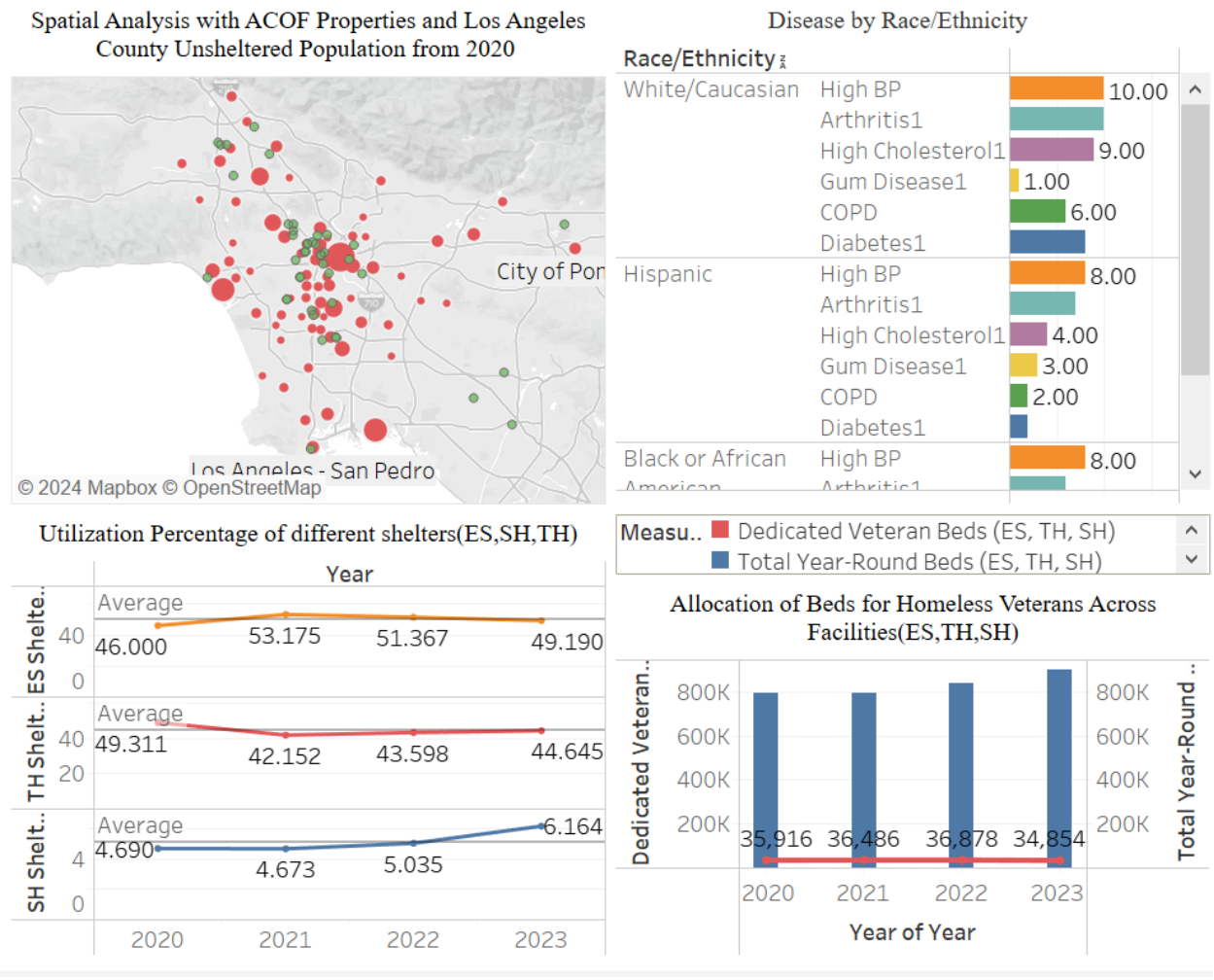
The Interquartile Range (IQR) represents the middle 50% of the data in a box plot. States falling within the IQR for a particular year are those whose veteran homeless populations fall within the middle 50% range of all states for that year. In other words, these states have homeless veteran numbers that are relatively typical, or average compared to other states during that specific year. For example, if a state falls within the IQR for 2022, it means that its homeless veteran population is within the middle range of homeless veteran populations across all states in 2022. This could indicate that the state's homeless veteran situation is neither exceptionally high nor exceptionally low compared to other states during that year.

Analysis Question 5: What are the trends in the ratio of sheltered to unsheltered homeless veterans across most impacted states from 2020 to 2023? (Line Chart & Calculate Field)



The line chart depicts the trends in the ratio of sheltered to unsheltered homeless veterans across the most impacted states from 2020 to 2023.The upward trend initially indicates an increase in the ratio, suggesting improved access to shelter and support services for homeless veterans. The downward trend indicates a decrease in the ratio and showcases reduced access to shelter. These fluctuations highlight variations in the availability of shelter and support services over time. For example, let us consider the state of New York in 2020 the ratio for it is 32.81 and in 2021 its 99.73. So, we can see there is a betterment of services. In 2022 it again shows a decrease in ratio to 38.60 from 99.73 in the previous year. This shows less veterans were sheltered in 2022 as compared to 2021.

Dashboard (Bar Graph, Line Chart, Geographic Map, Dual-Axis Chart, Reference Line & Calculate Fields)



The first visualization in dashboard is a map representing a spatial analysis of unsheltered homeless populations in Los Angeles County alongside the locations of low-income housing projects by ACOF. The red circles vary in size, indicating the number of unsheltered individuals: the larger the circle, the higher the population. Key areas with significant unsheltered populations are highlighted by the largest red circles, suggesting these are the most critical zones in need of assistance. Conversely, the green points mark the low-income housing properties developed by ACOF, which are strategically placed across the region. The distribution of ACOF properties, when compared to the red circles, may reflect the organization's response to homelessness. Some ACOF properties are in proximity to larger red circles,

suggesting a targeted approach to serve high-need areas. The map thus provides a visual narrative of where current interventions are and potentially where future resources could be focused to address the disparities in housing availability and the needs of the homeless population.

The second visualization in dashboard is for figuring out the most common impactful diseases found in homeless people based on their race/ ethnicity. There are three race/ ethnicity of people available in survey data i.e., White/ Caucasian, Hispanic & Black/ African American. By this chart, it is clearly observed that High blood pressure, High cholesterol and Arthritis are the most affected diseases in all three races/ ethnicities while Diabetes is majorly present in White/ Caucasian people.

The third visualization in the dashboard is about analyzing the trendline for the percentage of Sheltered Transitional Housing (TH), Sheltered Safe Havens (SH), and Sheltered Emergency Shelters (ES) relative to the total Sheltered Homeless Veterans provides valuable insights into the utilization of different types of shelters over time. On average over the last four years, 50% of Sheltered Veterans are accommodated in Emergency Shelters, 45% are in Transitional Housing, and 5% are staying in Safe Havens. Emergency Shelters offer immediate, short-term housing for homeless individuals or families. Transitional Housing provides longer-term options for those needing additional support to transition out of homelessness. Safe Havens cater to individuals with severe mental illness or complex needs, offering a supportive environment tailored to their challenges. This analysis sheds light on the diverse backgrounds and needs of homeless veterans to serve them more effectively.

The fourth chart in the dashboard is about the reservation of beds for veterans across facilities over the years. In the dual-axis chart, Total Beds Year-Round (ES, TH, SH) are represented using a Bar chart, and the Dedicated Veteran Beds are represented using a Line chart. Analyzing the data, we observe a notable trend: while the total number of beds (representing both Emergency Shelters, Transitional Housing, and Safe Havens) has increased steadily over the years, the number of dedicated veteran beds has remained relatively constant with minimal fluctuation.

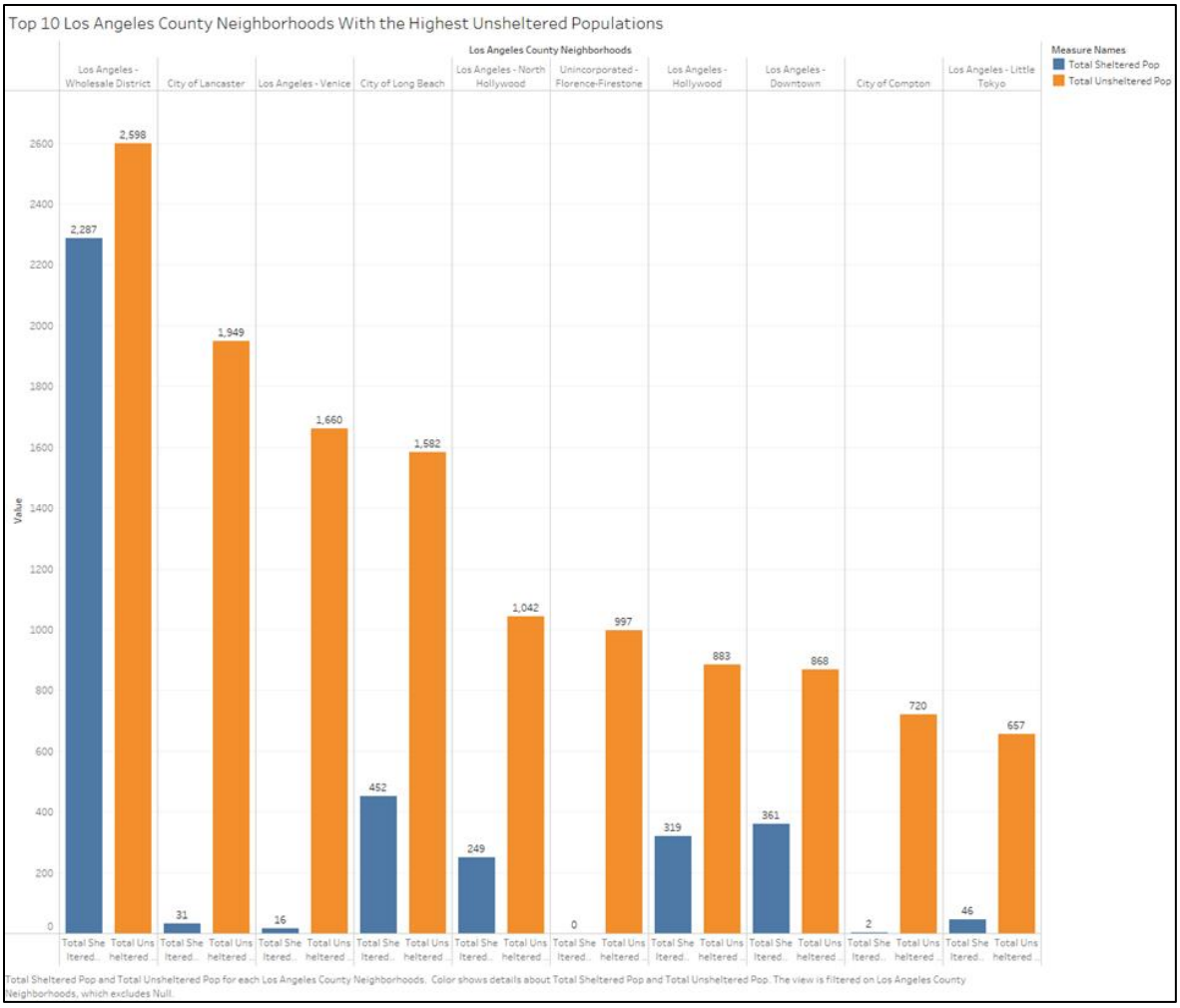
Story Telling

In the city of Los Angeles and throughout Los Angeles County, we deal with an everlasting and ever-growing homeless population. According to the Los Angeles Homeless Services Authority, "an estimated 75,518 people experienced homelessness in Los Angeles County in 2023. Of these, more than 20,000 were provided with shelter. Unsheltered homelessness increased 14% from 2022 to 2023. The number of tents, vehicles, and makeshift shelters visually tallied increased by 7% from 2022 to 2023 (from just under 22,000 to more than 23,000). Nonetheless, since 2019, Los Angeles County has seen a 68% increase in shelter beds for the homeless (from 15,617 in 2019 to 26,245 in 2023). The number of sheltered homeless veterans increased from 735 in 2022 to 1,070 in 2023 (from among 3,878 homeless veterans in 2023). Since 2020, more than 21,000 persons have been placed into permanent housing each year ("Homelessness in Los Angeles County 2023").

The composition of the homeless population in Los Angeles County is a reflection of a broad array of demographic groups. The 2023 data from the Los Angeles Homeless Services

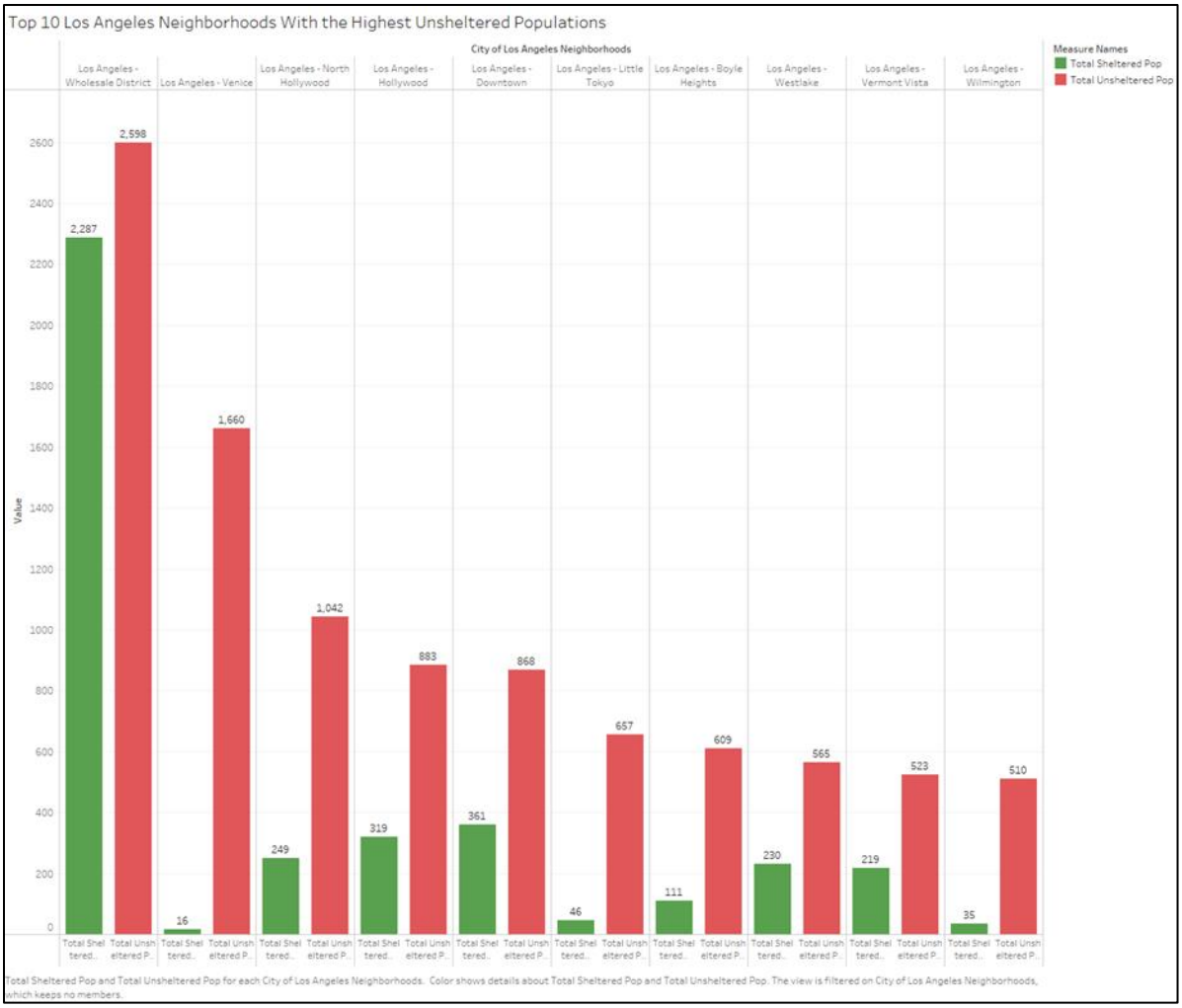
Authority indicates the following racial distribution among the homeless: Native Americans constitute 1%, Asians 1.7%, Black/African Americans 31.7%, Hispanic/Latinos 42.6%, and Whites 19.4%. Additionally, individuals of multiple racial backgrounds make up 3.1% of the homeless population. Gender demographics reveal that males make up 66.6%, while females represent 30.8%. A significant majority, 75%, of the homeless fall within the 25-54 age bracket. Noteworthy is the fact that children under the age of 18 comprise 8.2%, and those aged 65 and over make up 6.6% of the homeless population.

The detailed statistics offered afford us a clearer understanding of the homelessness crisis in Los Angeles County. Such insights are invaluable to organizations like ACOF, aiding them in scaling up their low-income housing initiatives. With existing properties in Fullerton and Anaheim, the data empowers ACOF to extend its reach within both Los Angeles City and County and to expand into broader areas of Orange County.

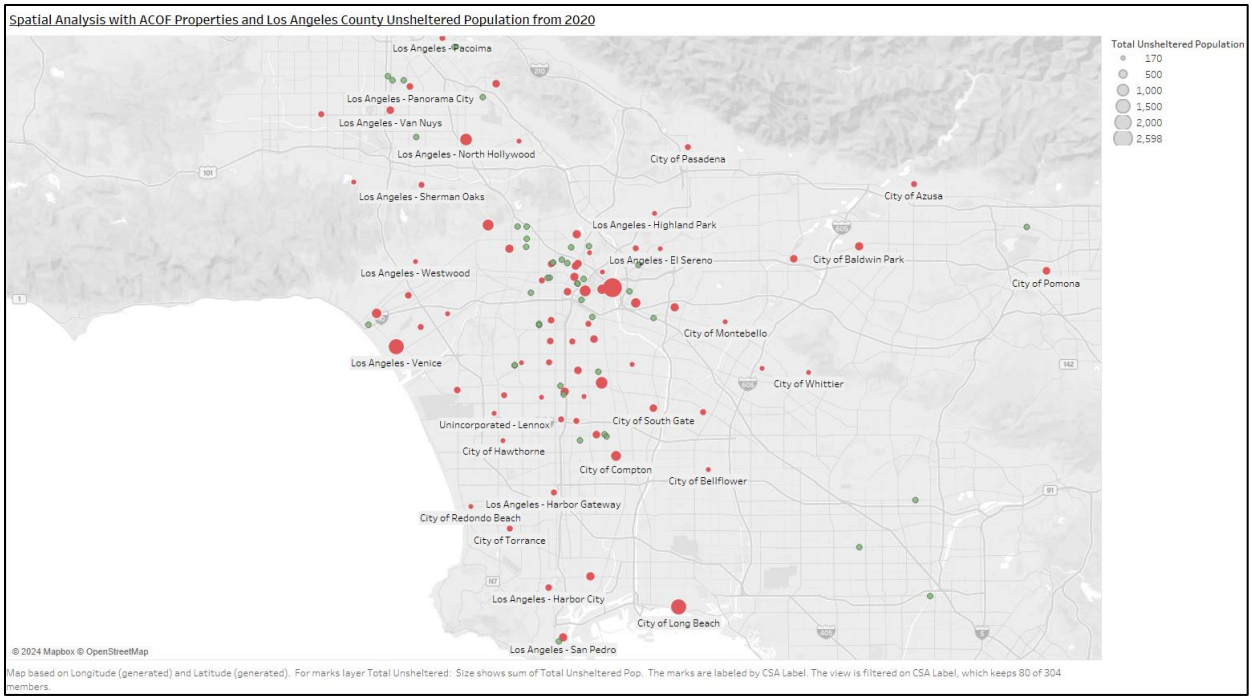


The bar chart above, titled, "Top 10 Los Angeles County Neighborhoods With the Highest Unsheltered Populations" will give us a bigger insight into the unsheltered homeless population in Los Angeles County. As you can see from the bar graph, 6 out of 10 cities are based in Los Angeles with the highest unsheltered populations. The rankings follow as Los Angeles – Wholesale District as having the number one spot with the most unsheltered homeless people. Second, we have the City of Lancaster with a population of 1,949 unsheltered and 31 sheltered homeless people. The city of Lancaster has an approximate population of 169,185 and it is located in the Mojave Desert, 70 miles north of Downtown Los Angeles. There have been reports of unsheltered homeless people facing relentless abuse from the Los Angeles County

Sheriffs as the “deputies contracted by the city routinely push homeless people into the inhospitable desert, where they often face additional pressure from county officials” (Smith). The results of the homeless being pushed out by Los Angeles County Sheriffs have resulted in the homeless being in remote areas where they have to walk long distances for water and food. This can result in a tyranny of health issues, lack of medical services, starvation, and dehydration for the homeless population in Lancaster. Third, we have Venice with 1,660 unsheltered homeless people. Fourth, we have the City of Long Beach with 1,582 unsheltered homeless people and 452 sheltered homeless people. Fifth, we have North Hollywood with 1,042 unsheltered homeless people. Sixth, we have Unincorporated Florence with 997 unsheltered homeless people and 0 sheltered homeless people. Florence is a city near Lynwood and is patrolled by the Los Angeles Sheriff's Department. Seventh, we have Hollywood with 883 unsheltered homeless people. In eight, we have Downtown Los Angeles with 868 unsheltered homeless people. In ninth place, we have the City of Compton with 720 unsheltered homeless people and 2 sheltered homeless people. In the tenth position, we have Little Tokyo with 657 unsheltered homeless people.



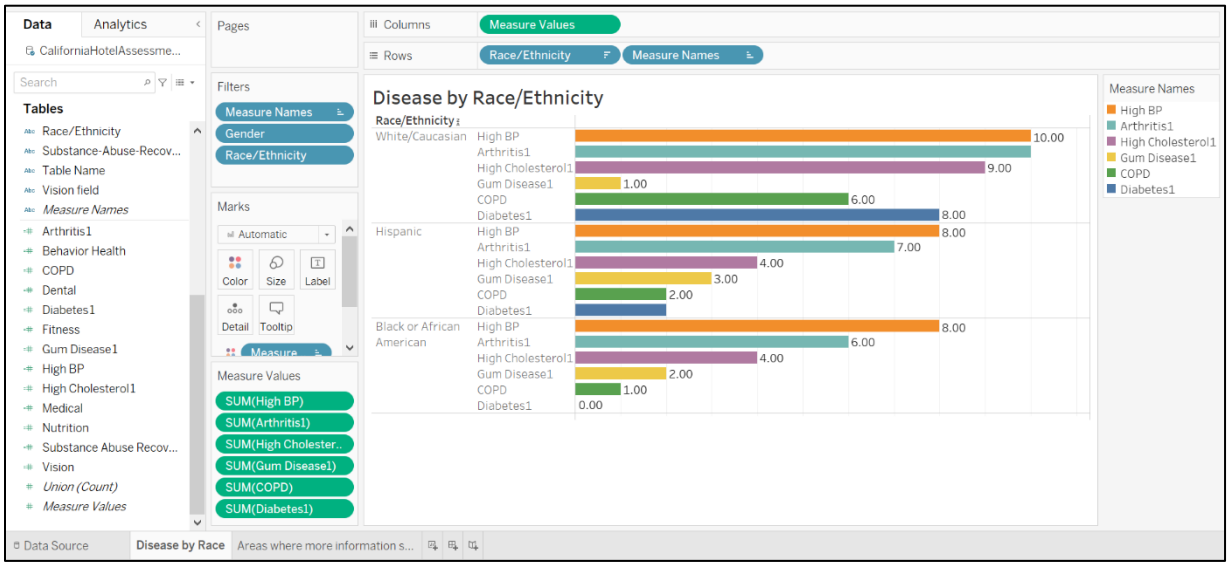
The bar chart entitled "Top 10 Los Angeles Neighborhoods With the Highest Unsheltered Populations" serves a similar purpose to the earlier chart focusing on Los Angeles County, with a concentrated emphasis on specific neighborhoods within the City of Los Angeles. It highlights that the Wholesale District and Venice are the neighborhoods most affected by unsheltered homelessness, while areas on the West Side appear as well, albeit in the ninth and tenth ranks, indicating a lesser but still significant presence of unsheltered individuals.



Shown above to enhance this dataset with a geographic map marked with data points to reflect the unsheltered homeless population would provide a more intuitive visual tool. By mapping the distribution of unsheltered individuals in red and ACOF properties with green points on the map. ACOF can make informed, strategic decisions regarding the locations for their upcoming low-income housing developments, whether in the City of Los Angeles, the broader Los Angeles County, or Orange County. Economic development and planning can be greatly done with GIS and data visualization tools. According to Camoin Associates, an Economic Development and Business Lead Generation Firm. They state that "By integrating economic data, employment statistics, and infrastructure details, GIS empowers communities to identify areas ripe for investment, job creation, and infrastructure development. This strategic approach fosters economic resilience and ensures that development initiatives align with the broader goals of the community" (Stevens). As you can see from the map above, ACOF has built a lot of low-income housing near large amounts of unsheltered homeless population. I feel

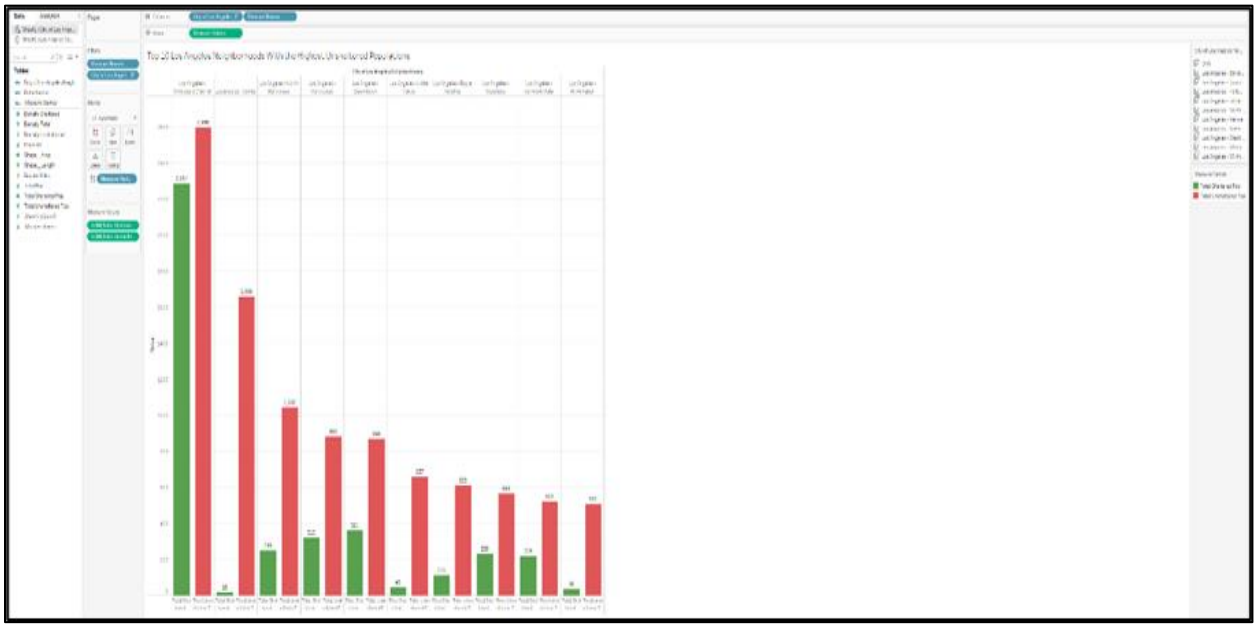
that they can be more successful in fighting the homeless epidemic by building more low-income properties near Compton and Unincorporated Lennox. The visualizations presented offer a narrative on how consultants or organizations can leverage data visualization to highlight areas with the highest concentrations of unsheltered homeless populations across Los Angeles County. They also include a map equipped with data points that could guide ACOF in identifying and planning the locations for future low-income housing projects, as part of their efforts to address the homelessness crisis.

Analysis Question 1 Tableau Interface:

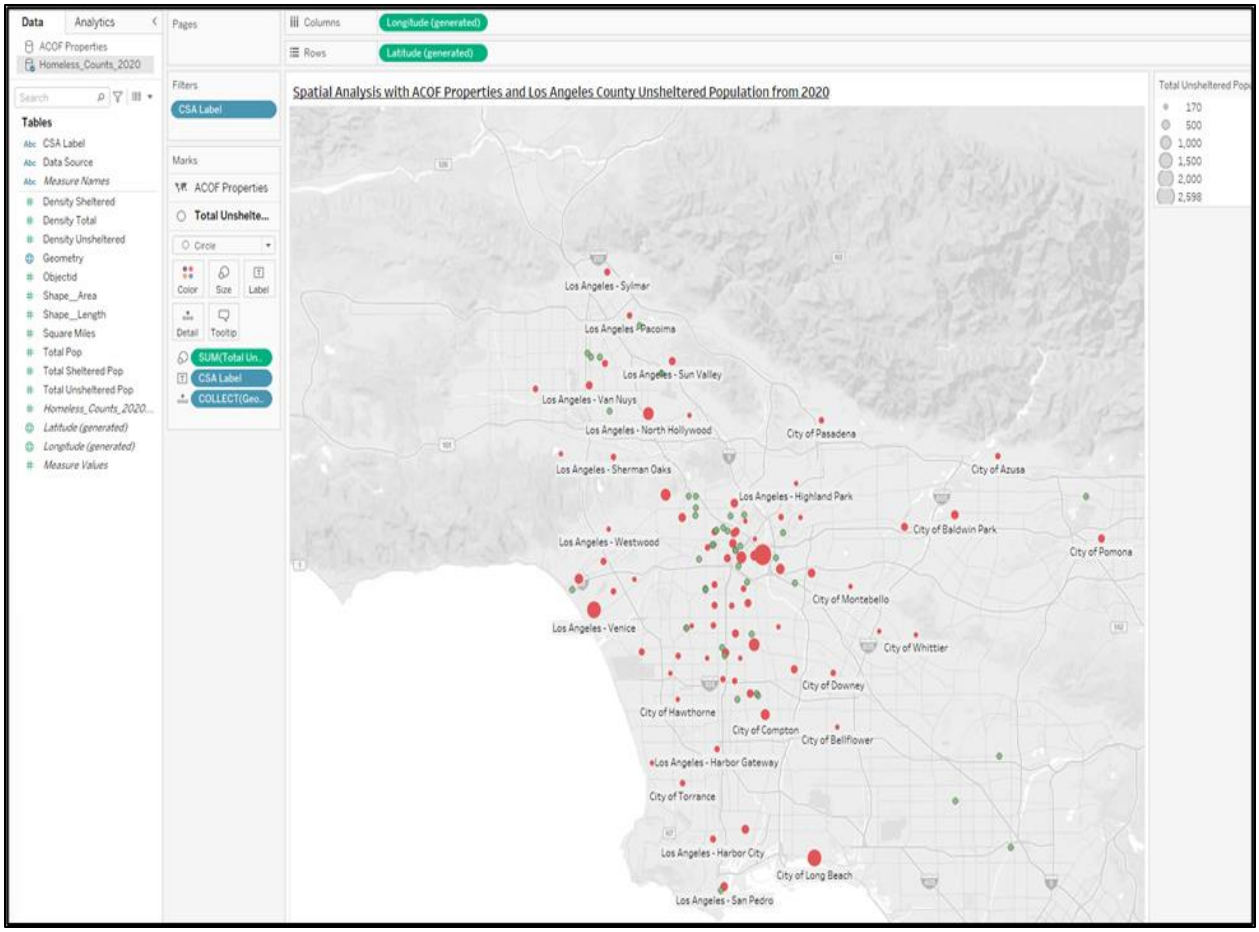


Analysis Question 2 Tableau Interface:

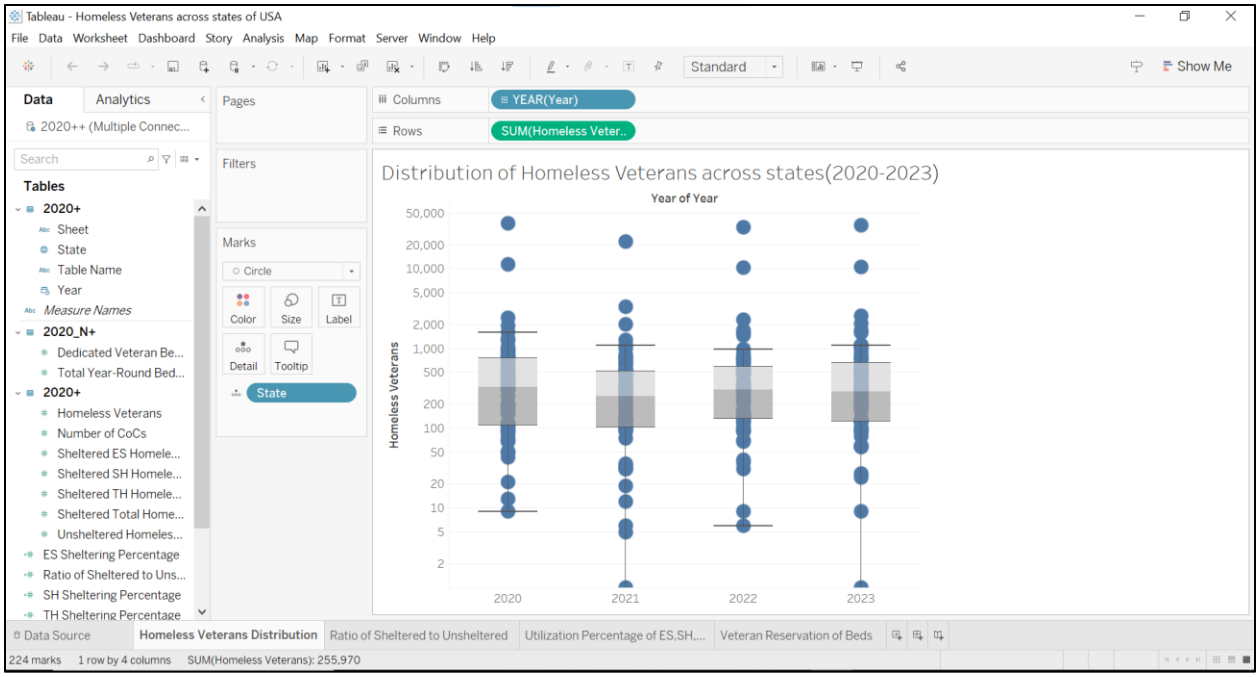
Analysis Question 3 Tableau Interface:



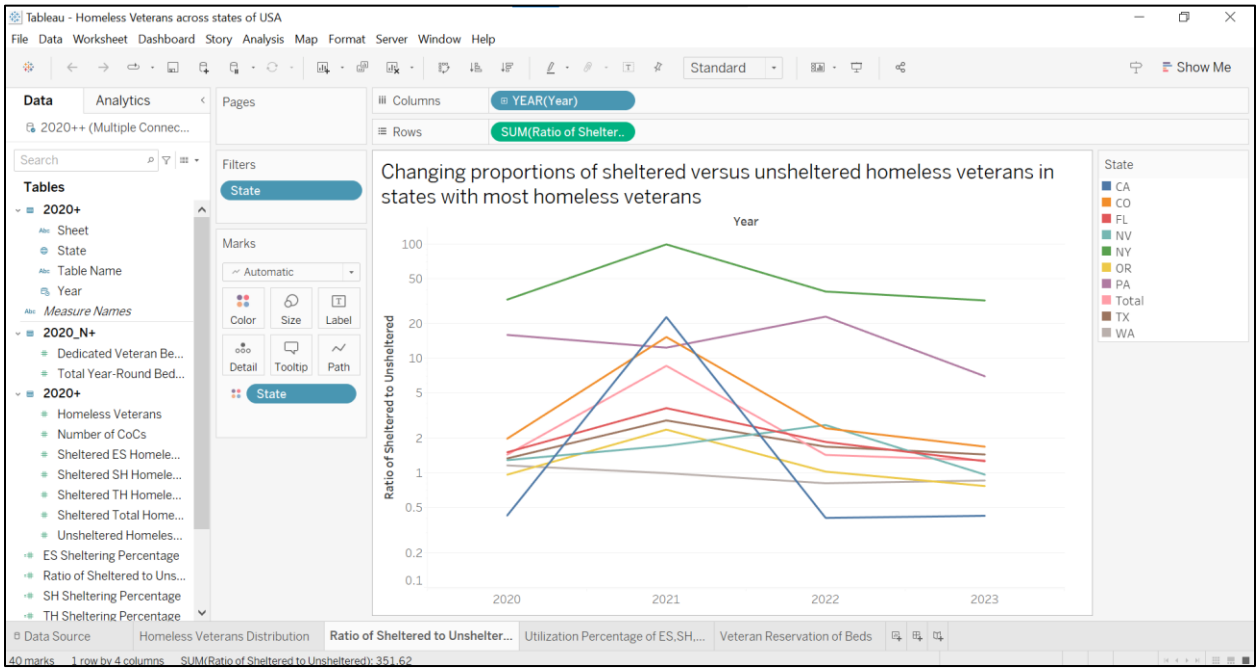
Story Telling and Dashboard Tableau Interface:



Analysis Question 4 Tableau Interface:



Analysis Question 5 Tableau Interface:



Conclusion

In our conclusion, we will thoroughly examine all pertinent data, which encompasses the ACOF survey results, demographic statistics of the homeless population in Los Angeles County, information on homeless veterans nationwide, and proposed solutions to address the identified issued.

This analysis incorporates survey data from three different ACOF properties: California Hotel, Gower, and Las Palomas. A total of 52 individuals participated, providing demographic details, health conditions, and information on their lifestyle and potential damaging habits. Our first analysis aimed to identify correlations between health disorders/diseases and race/ethnicity among the participants, who were predominantly White/Caucasian, Black/African American, and Hispanic. Notably, 80% of diabetic patients identified as White/Caucasian, suggesting a significant genetic predisposition in this group. This finding could guide ACOF to focus on preventive healthcare initiatives specifically with this demographic, concerning diabetes. Additionally, lifestyle factors like being inactive/not exercising and poor diet were prevalent across all groups, contributing to widespread health issues such as high blood pressure that affected 50% of the surveyed population, arthritis at 44%, and high cholesterol at 32%.

The second analysis assessed participant interest in learning more about access to various health-related treatments, including behavioral health, medical care, dental services, vision care, nutrition, fitness, and substance abuse recovery. Results showed that interest levels ranged from 40 to 50% in all categories except for medical care and substance abuse recovery. These insights will assist ACOF in tailoring future events and workshops to meet the expressed needs and interests of the community.

The exploration of homelessness within Los Angeles reveals a crisis concentrated in specific neighborhoods, with the Los Angeles Wholesale District, Venice, and North Hollywood among the top areas facing this challenge. The complexity of homelessness, characterized by a substantial unsheltered population living in cars, tents, and the open streets, demonstrates a dire need for targeted policy interventions and resources. The alarming conditions in these neighborhoods not only impact the homeless population but also affect community safety and local economies. To address this crisis, a multi-faceted approach is necessary. First, expanding access to low-income housing is crucial. The map indicating the distribution of the unsheltered homeless population alongside ACOF's low-income housing properties suggests a significant opportunity to align future housing projects with the areas of greatest need for low-income housing corresponding with the highest areas of unsheltered homeless population. Second, enhancing mental health and substance abuse services can address the underlying issues contributing to homelessness. We can also focus on tailored interventions for methamphetamine and fentanyl, substances that are particularly prevalent among the homeless population. Third, increasing the availability of emergency shelters and transitional housing can provide immediate relief to those living without shelter. Additionally, community engagement and policy reforms are essential. Strengthening the collaboration between local government, non-profits, businesses, and community members can lead to innovative solutions tailored to the unique challenges of each neighborhood. Ultimately, the homelessness crisis in Los Angeles demands a concentrated effort from all sectors of society. By focusing on housing, healthcare, community support, and policy reform, it is possible to make a meaningful difference in the lives of many and address the root causes of homelessness in the city's most affected neighborhoods.

Analysis of the distribution of homeless veterans across states from 2020 to 2023 reveals notable variations and trends. California consistently emerges as an outlier with the highest number of homeless veterans each year. Targeted intervention in the most impacted states can help to bring down the figures of Homeless Veterans. Looking at how many homeless veterans are in shelters compared to those without shelter over the four years gives insights into where more help is needed. Involving federal and state governments to build housing dedicated to veterans only can be used as one of the measures to improve this area.

Usage of different shelter types further reveals the diverse needs of homeless veterans. The diverse array of shelter types utilized by homeless veterans' sheds light on the complex intersection of mental and physical health needs within this population. The predominance of Emergency Shelters suggests a significant immediate need for housing and basic necessities among homeless veterans. Transitional Housing, on the other hand, indicates a recognition of the longer-term support required to address underlying issues contributing to homelessness, such as unemployment, substance abuse, or mental health disorders. Safe Havens catering specifically to individuals with severe mental illness or complex needs underscore the importance of tailored and specialized care for those experiencing significant mental health challenges. Increased investment to cater specialized services can help the veteran to transition out of homelessness successfully. Despite overall increases in shelter capacity, the number of dedicated veteran beds remains relatively constant, suggesting potential gaps in resources specifically tailored to homeless veterans within existing shelter systems. This can be addressed by prioritizing the veterans and slightly ramping up the reservations of beds for them across facilities.

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