



# ACTION PLAN FOR DISASTER RECOVERY

2024  
DERECHO



HURRICANE  
BERYL



# ACTION PLAN FOR DISASTER RECOVERY

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## 2024 DERECHO AND HURRICANE BERYL



CITY OF HOUSTON  
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HOUSING AND COMMUNITY DEVELOPMENT DEPARTMENT

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NOVEMBER 7, 2025

HUD Approved this Action Plan for Disaster Recovery on November 25, 2025

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## Change Log

**Table 1: Change Log**

Version (Date)	Summary of Changes Made
Version 1 (September 15, 2025)	Original submittal
Version 2 (November 7, 2025)	Updated to address HUDs review prior to submittal





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# Executive Summary

## Overview

The U.S. Department of Housing and Urban Development (HUD) announced that the *City of Houston (the City)* will receive \$314,645,000 in funding to support long-term recovery efforts following qualifying major disasters that occurred in 2023 or 2024, through the *Office of the Assistant Secretary for Community Planning and Development, HUD*. Community Development Block Grant-Disaster Recovery (CDBG-DR) funding is designed to address remaining needs after all other assistance has been exhausted. This plan details how funds will be allocated to address various unmet needs in *the City*.

To meet disaster recovery needs, the statutes making CDBG-DR funds available have imposed additional requirements and authorized HUD to modify the rules that apply to the annual CDBG program to enhance flexibility and allow for quicker recovery. HUD has allocated \$314,645,000 in CDBG-DR funds to the *City* in response to the 2024 windstorm Derecho and Hurricane Beryl (2024 Storm) (FEMA DR-4781 & FEMA DR-4798) through the publication of the Federal Register, FR-6512-N-01, on Thursday, January 16, 2025. This allocation was made available through the Disaster Relief Supplemental Appropriations Act, 2025 (Pub. L. 118-158) approved December 21, 2024.

Table 1: CDBG-DR Allocation Overview

Allocation Type	Amount
Unmet Need	\$273,604,000
Mitigation	\$41,041,000
<b>Total Allocation</b>	<b>\$314,645,000</b>

Table 1 Source: Federal Register (FR-6512-N-01)

On January 8, 2025, HUD published the Community Development Block Grant Disaster Recovery Universal Notice: Waivers and Alternative Requirements (the Universal Notice), which outlines the rules and requirements governing the \$12 Billion of CDBG-DR funding appropriated by Public Law 118-158. On March 19, 2025, HUD issued Memorandum 25-02 updating the guidance provided by the Universal Notice. On March 31, 2025, HUD issued Memorandum 25-03 providing additional revisions made to the Universal Notice to comply with Executive Orders. The Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl (the Plan) has been developed as prescribed by HUD in accordance with the guidance provided by the Universal Notice and subsequent Memorandums.

The Plan contains the following sections:

- Executive Summary
- Unmet Needs Assessment
- Mitigation Needs Assessment
- Connection of Proposed Programs and Projects to Unmet Needs and Mitigation Needs
- Allocation and Award Caps/Funding Criteria
- General Information
- Appendix

## Proposed Use of Funds

This section provides an overview of the City's proposed use of CDBG-DR funding to address recovery and resilience needs associated with the 2024 Derecho and Hurricane Beryl. The City informed and provided the public opportunity for engagement through the following:

- Website Posting of Draft Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl
- Public Notice Publication
- Budget and Fiscal Affairs Meeting Presentation
- Virtual Public Meetings
- Budget and Fiscal Affairs Meeting Update Presentation

Based on feedback received during the public engagement process, the City has revised the Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl to include \$109,183,850.00 for housing programs. The revised budget, which incorporated \$50 million for Single Family and \$59,183,850.00 for Multifamily housing programs, was approved by the Houston City Council on August 13, 2025. Following City Council approval, the updated budget was posted on the City’s disaster recovery website. Within the eligible cost categories shown in Table 2 below, the City will utilize the CDBG-DR allocation to fund the following:

- Administration
- Planning
- DR24 Multifamily Housing Program
- DR24 Single Family Home Repair Program
- Emergency Response/Public Safety Program
- Homeless Services Program
- Debris Repository Acquisition/Development Project
- Vegetation Management Program

More details can be found in the Allocation and Award Caps/Funding Criteria Section (beginning on page 41).

The City of Houston will use 100% of the CDBG-DR allocation, shown in Table 2, in the HUD-identified MID area (Houston, TX).

Table 2: CDBG-DR Program Allocations

Eligible Cost Category	CDBG-DR Allocation Amount	% of CDBG-DR Total Grant Award	Amount of CDBG-DR Allocation for LMI Benefit
Administration	\$15,732,250.00	5.00%	N/A
Planning	\$200,000.00	0.06%	N/A
Housing	\$109,183,850.00	34.69%	100.00%
Infrastructure	\$101,291,150.00	32.19%	40.00%
Economic Revitalization	\$0.00	0.00%	0.00%
Public Services	\$47,196,750.00	15.00%	86.40%
Mitigation	\$41,041,000.00	13.04%	50.00%
<b>Total</b>	<b>\$314,645,000.00</b>	<b>100%</b>	<b>70.22%</b>

Table 2 Source: HUD’s Unmet Need Justification Memo (See Appendix 10)

## Disaster Overview/Impacts

In the spring and summer of 2024, Houston faced two catastrophic events: the Derecho and Hurricane Beryl. At a national scale, “the total damage and economic loss from Beryl is \$28 billion to \$32 billion nationwide, including damage to homes, infrastructure, job and wage losses, and government cleanup expenses.”<sup>1</sup>

<sup>1</sup> Patel, Shafaq, “Hurricane Beryl’s estimated damage is in the billions.” AXIOS Houston, 7/18/2024. <https://www.axios.com/local/houston/2024/07/18/beryls-estimated-damage-in-the-billions>





## Derecho

A powerful derecho windstorm swept through Houston, causing widespread destruction and leaving a significant portion of the city without power. The storm, characterized by sustained straight-line winds of up to 100 mph, brought with it intense thunderstorms, heavy rain, and damaging wind gusts that caused havoc across the region. The fast-moving storm resulted in significant damage to homes, buildings, trees, and widespread infrastructure disruptions. The Derecho was considered the worst-damaging wind event to affect Houston in nearly 25 years. The strong winds in Downtown Houston blew out the windows of many high-rise buildings in the area, littering the streets below with broken glass. A brick building occupied by a bar near the intersection of Congress Street and Travis Street suffered the collapse of a wall.

The Derecho affected most of Houston's population, with many facing severe impacts to their homes and businesses. The storm downed power lines across the City, leaving over a million customers without electricity at the height of the event. The strong winds caused extensive damage to the city's power grid, delaying restoration efforts. More than 24 hours later, almost 555,000 customers remained without power, and by Wednesday of the following week (seven days later), when repairs were initially expected to be finished, nearly 60,000 homes, businesses, and schools in the worst-hit areas of the City were still without power. Eight people were confirmed to have died in Greater Houston because of the storm.

In addition to power outages, the storm caused substantial property damage. Large trees were uprooted, crashing into homes and blocking major roadways. Many neighborhoods reported extensive roof damage, broken windows, and flooding due to heavy rain accompanying the winds. The storm also damaged several public buildings and schools, prompting temporary closures.

Emergency services were quickly deployed, focusing on clearing blocked roads, responding to calls for assistance, and helping residents affected by the storm. Shelters were set up to house those displaced, and efforts to repair homes and clear debris began almost immediately after the storm had passed.



Figure 1: Derecho Radar

Source: <https://wlos.com/news/nation-world/explainer-derecho-hits-houston-with-large-swath-of-severe-weather>

## Hurricane Beryl

Hurricane Beryl was a deadly and destructive tropical cyclone that impacted parts of the Gulf Coast of the United States. It made landfall in Houston on July 8, 2024, and struck the City as a powerful Category 1 storm, bringing with it sustained winds of 95 mph, heavy rains, and dangerous storm surges. Rainfall of 16.88 in (429 mm) was measured at a point 2.7 miles NNE of Hillshire Village, while parts of the Greater Houston area received 13.55 in (344 mm) of rain. The hurricane caused widespread damage and significant disruption across the City, impacting infrastructure, homes, businesses, and essential services. As Beryl made landfall, areas across Houston experienced extensive flooding and property damage, with some neighborhoods submerged due to heavy rainfall.

Hurricane Beryl was also significant for causing over 2.7 million households and businesses near the Gulf Coast, primarily in the Houston metropolitan area, to suffer from prolonged power outages during high temperatures and high humidity. The combination of downed power lines, fallen trees, and damaged electrical infrastructure left large parts of the City in the dark. Efforts to restore power were delayed due to severe flooding and extensive debris, with some areas remaining without power for up to seventeen days after the storm. The post-storm power outages played a contributing factor in at least ten deaths related to excess heat or nonfunctional medical equipment. Tragically, 42 fatalities were reported as a result.

In terms of infrastructure, the City also saw major roads rendered impassable and significant damage to homes and public buildings. The overall cost of the destruction is estimated to be between \$2.5 billion to \$4.5 billion in property damage, infrastructure repairs, and economic losses.

Texas declared a severe weather disaster declaration for 121 of its 254 counties. Houston's NRG Stadium suffered from roof damage, with strong winds causing a hole to form between a groove in the retractable roof. Severe weather forced George Bush Intercontinental Airport to delay 117 flights and cancel another 312 flights, while William P. Hobby Airport delayed 56 flights and canceled eight. At least one break room and one elevator were damaged during the storm at George Bush Intercontinental Airport.

Hurricane Beryl left Houston with long-lasting challenges as the City worked to rebuild. Despite the damage and disruption, Houston's community has shown resilience as it faces the recovery process and works to return the city to normalcy.

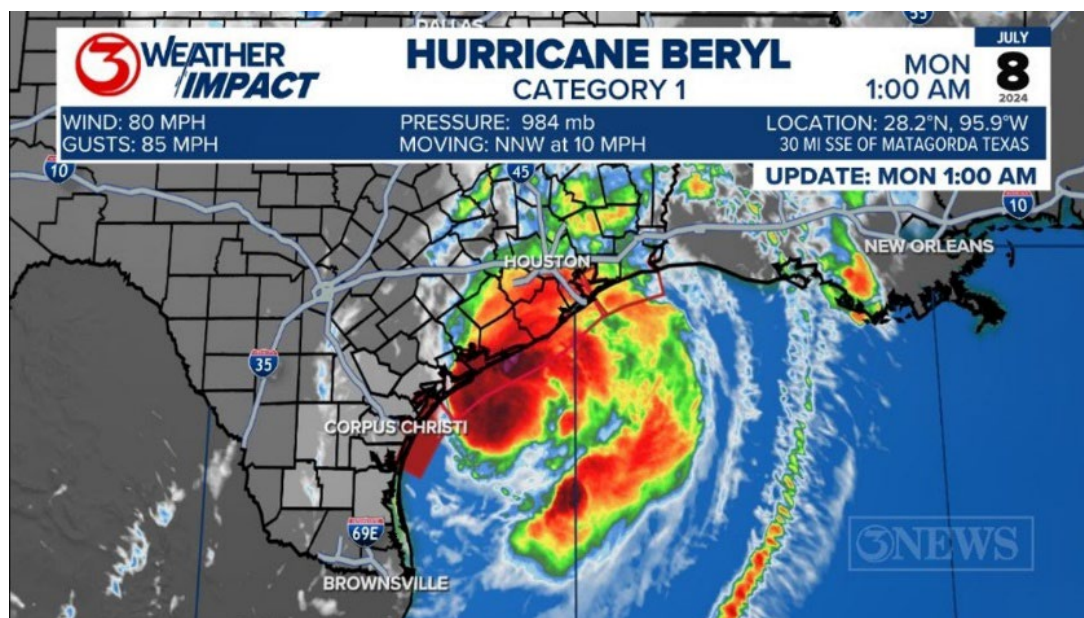


Figure 2: Hurricane Beryl Radar

Source: <https://www.kiiitv.com/article/weather/hurricane/beryl-expected-to-make-landfall-near-matagorda-bay/503-2edce95e-c63c-470c-88b2-1e770b604287>



### *Housing Impact*



Figure 3: Housing Disaster Damage – Trees Uprooted

Source: <https://www.fox26houston.com/news/trees-topple-onto-homes-and-vehicles-in-cypress-during-powerful-storm-system>

### *Infrastructure Impact*



Figure 4: Infrastructure Damage – Destroyed Power Towers

Source: <https://abc13.com/post/houston-severe-weather-storms-damage-after-in-my-area/14828941/>





Figure 5: Infrastructure Damage – Downed Powerlines

Source: <https://www.khou.com/article/weather/hurricane/beryl/beryl-utility-poles/285-9adcc3ab-069c-46ad-9a04-0909da151866>

### *Economic Impact*



Figure 6: Economic Impact – Businesses Destroyed

Source: <https://www.inc.com/araceli-crescencio/derecho-devastation-underscores-need-disaster-preparation.html>

Table 3: Disaster Overview

Disaster Summary	
Qualifying Disaster	DR-4781-TX, DR-4798-TX
Grantee-Identified MID Areas	Houston, TX (Citywide)
HUD-Identified MID Areas	Houston, TX (Same as HUD-Identified MID Area)

Table 3 Source: Federal Register (FR-6512-N-01)

The following Federal Emergency Management Agency (FEMA) maps illustrate the federally declared disaster areas and the type of FEMA funding approved for each impacted county from the 2024 Derecho and Hurricane Beryl. The entire City of Houston is within counties that FEMA designated for FEMA Individual Assistance (FEMA IA). FEMA IA designation allows the individuals and households in these counties to apply for financial and direct services after a federally declared disaster.

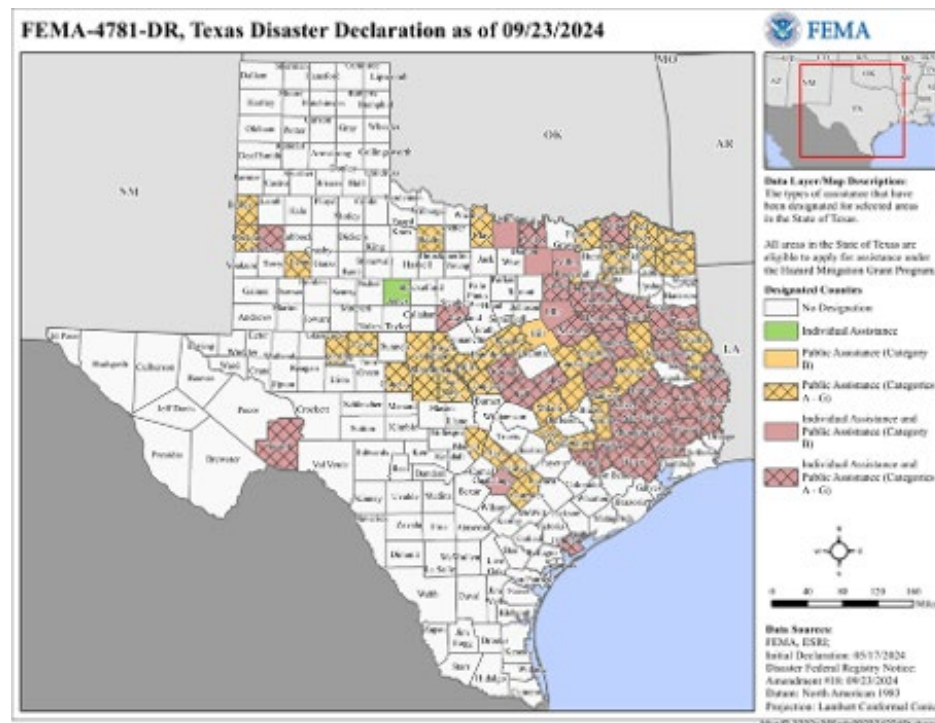


Figure 7: FEMA Map of DR-4781-TX Disaster Declaration Areas

# FEMA-4798-DR, Texas Disaster Declaration as of 09/16/2024

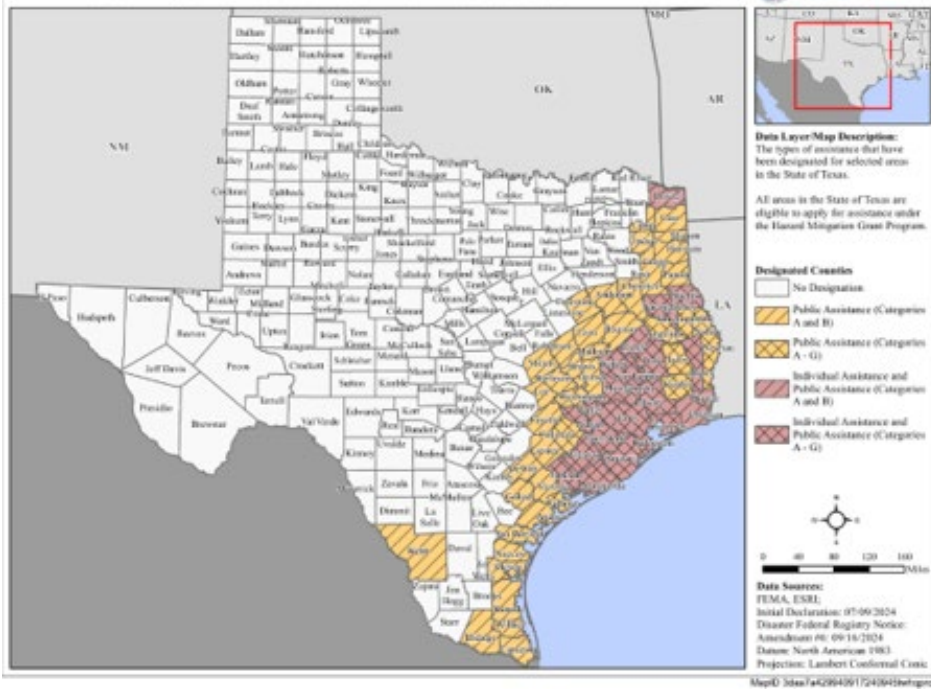


Figure 8: FEMA Map of DR-4798-TX Disaster Declaration Areas



## Most Impacted and Distressed Areas

### *HUD identified MID Areas*

HUD has designated Houston, TX as a “Most Impacted and Distressed” area (MID area). The City will spend 100 percent of the CDBG-DR funds on the HUD-designated MID area.

### *Grantee-identified MID Areas*

N/A

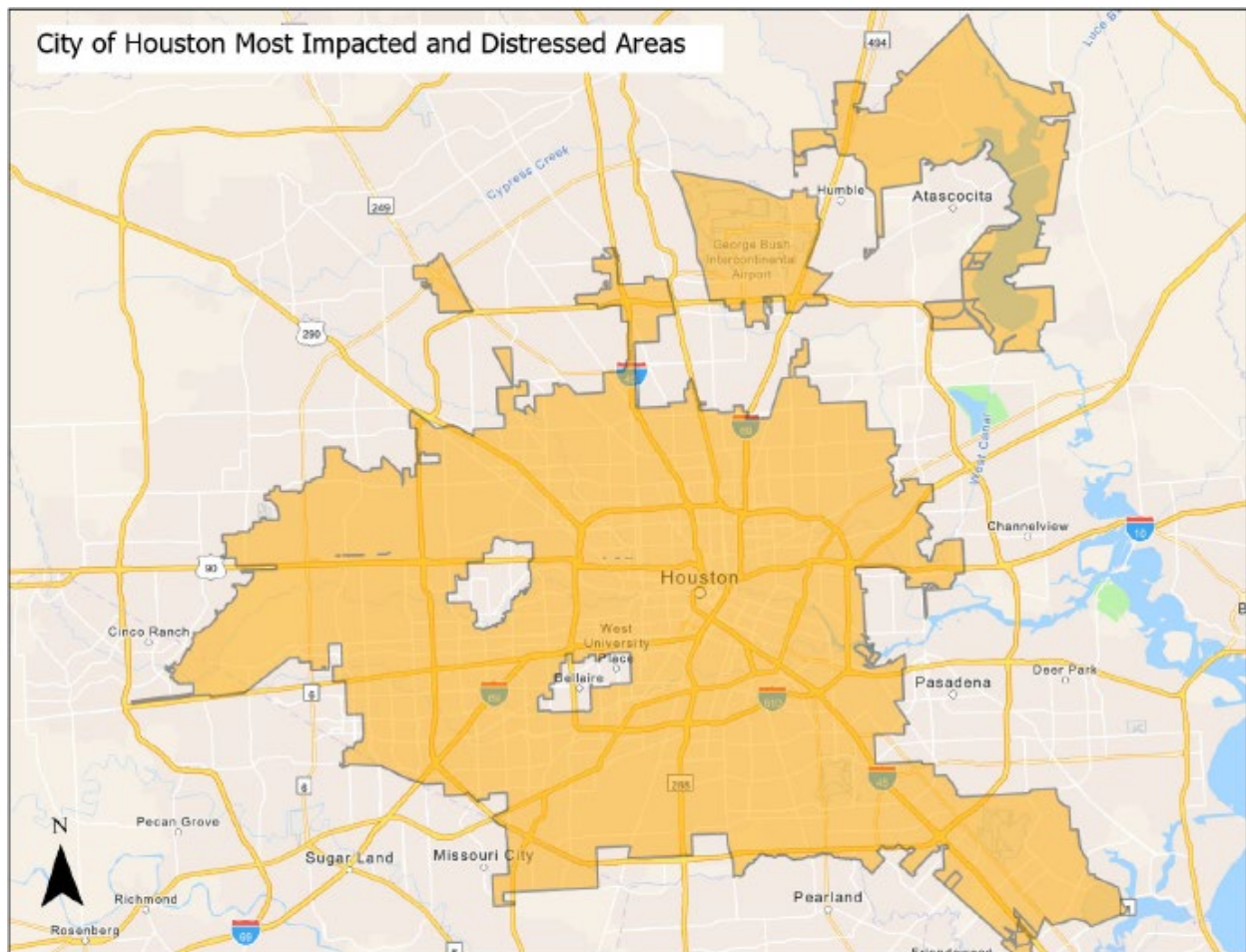


Figure 9: City of Houston Most Impacted and Distressed Areas

## Unmet Needs Assessment

Given the disruption and damage caused by the 2024 Derecho and Hurricane Beryl, and the compounding impacts from previous disasters, unmet needs for housing, infrastructure, economic revitalization, public services, and mitigation in the City of Houston remain significant. For a description of the effects of the 2024 Derecho and Hurricane Beryl in the MID area, please see the “Disaster Overview/Impacts” section from pages 10-14

The unmet needs assessment found that there are significant gaps/needs in every Eligible CDBG-DR Cost category:

- **Housing:** The largest unmet need, with over \$229 million in estimated post-disaster housing repair, housing reconstruction, and lost personal property, according to HUD. Overcrowding and housing cost burden, for both renters and homeowners, especially for LMI individuals and families, remain a key challenge. Disasters worsen financial strain and threaten family stability, while renters receive disproportionately less FEMA assistance and fewer approvals (more details available below).
- **Infrastructure:** According to FEMA, approximately \$135 million in public infrastructure damages, with nearly \$7.65 million in unmet needs, especially in the areas of emergency power resiliency and debris management.
- **Economic Development:** An unmet need of over \$186 million has been calculated from available SBA data. Power outages caused significant disruptions in various industries, but small businesses were particularly impacted from multiple days without power.
- **Public Services:** Many public services were disrupted all over Houston during these disasters due to power outages and heavy debris covering public streets that disrupted police and fire services. The City’s homeless population, who are especially vulnerable in times of disaster. Based upon the Mayor’s Plan to End Street Homelessness, Houston’s funding gap for housing unsheltered homeless individuals who are living on the street is approximately \$70 million per year.
- **Mitigation:** While the Hazard Mitigation Plan details the risks, priorities, and likelihood of various disaster types, it does not quantify an amount of funding that would be needed to fully mitigate such disasters.

Given the disruption and damage caused by the 2024 Derecho and Hurricane Beryl and the compounding impacts from previous disasters, the City is committed to supporting a disaster recovery process that leverages a variety of strategies and resources. While the City acknowledges unmet needs in all eligible CDBG-DR categories, the City will prioritize housing, infrastructure, public services, and mitigation, in accordance with the allocations shown in Table 4 below.

Table 4: Unmet Needs and Proposed Allocations\*

Category	Unmet Need	Percent of Total Unmet Need	Program Allocation Amount	Percent of Program Allocation Amount
Housing	\$229,415,935.00**	46.50%	\$109,183,850.00	36.55%
Infrastructure	\$7,649,487.74	1.55%	\$101,291,150.00	33.91%
Economic Revitalization	\$186,350,706.00**	37.77%	\$0.00	0.00%
Public Services	\$70,000,000.00	14.19%	\$47,196,750.00	15.80%
Mitigation	Unavailable	0.00%	\$41,041,000.00	13.74%
<b>Total</b>	<b>\$493,416,128.74</b>	<b>100.00%</b>	<b>\$298,712,750.00</b>	<b>100.0%</b>

Table 4 Source: HUD’s Unmet Need Justification Memo

\*Table excludes \$15,932,250.00 (5.1%) distributed among Planning and Administration, not part of Unmet Needs

\*\*This information is based on a point in time, and the number may increase or decrease based on the timing of the determination of verified loss vs when the claim is paid out

The needs assessment includes specific details about unmet needs within the City of Houston for housing, infrastructure, and economic revitalization, as prescribed by HUD. The assessment takes into consideration pre-disaster needs, other assistance made available, as well as unmet recovery and resilience needs resulting from the 2024 Derecho and Hurricane Beryl.



According to HUD's Allocation of CDBG-DR funds for 2023/2024 Disasters Brief, included in the Appendix, which the City received on 4/14/2025, the unmet needs across the state of Texas for the 2024 Derecho and Hurricane Beryl are estimated at approximately \$825 million, with the majority of the need in the component "Housing Serious Unmet Needs". The City of Houston accounts for approximately 34% of HUD-calculated unmet need for the entire State of Texas. The City's unmet need plus mitigation set-aside totaled over \$318 million. This amount was reduced by a 1.2488% pro-rata reduction, with the City receiving a final allocation amount of just over \$314.6 million.

Table 5 shows HUD's calculation of unmet need for Texas, and Table 6 shows HUD's calculation of unmet need for the City of Houston.

Table 5: Components of Unmet Need for the State of Texas by Disaster

Disaster Number	Disaster Description	Homes with Serious Unmet Needs	Housing Serious Unmet Needs	Business Serious Unmet Needs	Infrastructure Unmet Needs	Total HUD Formula Unmet Needs
4781	Flood	5,350	\$333,277,069.00	\$33,327,707.00	\$38,586,676.00	\$405,191,452.00
4798	Hurricane	5,452	\$350,394,711.00	\$35,039,471.00	\$35,039,471.00	\$420,473,653.00

Table 5 Source: HUD's Allocation of CDBG-DR funds for 2023/2024 Disasters Brief

Table 6: Components of Unmet Housing Need for Houston, TX

Grantee	Disaster Number	Homes with Serious Unmet Housing Needs	Percentage of State	Housing Unmet Need	Business / Infrastructure Unmet Need*	Mitigation (15% of Total Unmet Need)	Disaster Total (Unmet Need + Mitigation)
Houston, TX	4781; 4798	3,965	34%	\$229,415,935	\$47,648,065.00	\$41,560,000.00	\$318,624,000.00

Table 6 Source: HUD's Allocation of CDBG-DR funds for 2023/2024 Disasters Brief

\*HUD did not break down this amount between Business and Infrastructure

Table 7: Allocation Table

Grantee	Disaster Number	Housing	Business Serious Unmet Needs /	Total Unmet Need	Mitigation (15% of Total Unmet Need)	Total Allocation
Houston, TX	4781; 4798	\$226,550,989.00	\$47,053,036.00	\$273,604,025.00	\$41,041,000.00	\$314,645,025.00

Table 7 Source: HUD's Allocation of CDBG-DR funds for 2023/2024 Disasters Brief

## Evaluate the Impacts of the Three Core Aspects of Recovery

### Housing

#### Pre-Disaster Housing Market Conditions

Between 2010 and 2023, the number of occupied housing units in Houston's three-county region increased by 35%, more than two times the national growth rate of 15%. The substantial increase in Houston area rentals (41%) is the primary driver of the overall increase in occupied housing, though the number of housing units occupied by homeowners increased by 32% during this period.

According to the “Houston’s new homes: Smaller, more expensive and farther away” report by the Kinder Institute (<https://kinder.rice.edu/urbanedge/houstons-new-homes-smaller-more-expensive>), new home sales have substantially increased in all three of the biggest counties in the Houston metro area: Harris, Fort Bend, and Montgomery. Comparing the single years of 2011 and 2023, the number of new homes sold increased by almost half in Fort Bend (from 2,474 to 3,685), more than doubled in Harris (from 4,720 to 9,733), and increased almost sixfold in Montgomery (1,046 to 6,076).

Although growth has been observed for market-rate homes, the availability of affordable housing units has not kept pace with the needs of low-income Houstonians. The City consistently sees high percentages of households who are severely cost burdened, meaning households pay more than 50% of their monthly income for housing costs. Overcrowding is also a problem.

The most recent Comprehensive Housing Affordability Strategy (CHAS) data from 2017 to 2021 provided by HUD shows that in all income categories for Houston households, 52.3% of renter households had at least one housing problem. The data also showed that approximately 58% of renters are paying more than 30% of their gross income towards rent, indicating that their ability to effectively address their housing needs may be severely impeded by lack of financial resources. Additionally, approximately 12% (41,355) of renter households earning below 80% area median family income have overcrowding issues. The persistence of these two housing problems faced by renters indicates that the available housing stock is not meeting the needs of residents. In Houston, renters represent 58% of the occupied housing.

The CHAS data shows that for owner-occupied households, 24.1% had at least one housing problem and this number increases for households at or below to 80% AMI to 50.3%. For households experiencing housing problems, repetitive flooding in the last 10 years, and rising insurance costs, sufficient financial resources to address housing concerns may be an even greater challenge. For many who are elderly and on a fixed income, the ability to address housing concerns is even further out of reach. Houston’s aging housing stock is also a contributing factor, with median age of 45 years.

Table 8: Housing Problems by Number of Households

	Renter			Owner		
	0-80% AMI	Over 80 % AMI	Total	0-80% AMI	Over 80 % AMI	Total
Housing Problems	NUMBER OF HOUSEHOLDS					
Substandard Housing - Lacking complete plumbing or kitchen facilities	6,155	510	<b>6,665</b>	1,130	235	<b>1,365</b>
Severely Overcrowded - With >1.51 people per room (and complete kitchen and plumbing)	12,470	1,785	<b>14,255</b>	1,015	345	<b>1,360</b>
Overcrowded - With 1.01-1.5 people per room (and none of the above problems)	24,330	2,770	<b>27,100</b>	4,860	1,405	<b>6,265</b>
Housing cost burden greater than 50% of income (and none of the above problems)	104,270	775	<b>105,045</b>	30,220	1,495	<b>31,715</b>
Housing cost burden greater than 30% of income (and none of the above problems)	85,570	10,140	<b>95,710</b>	26,040	4,675	<b>30,715</b>
Zero/negative Income (and none of the above problems)	62,000	35,350	<b>97,350</b>	58,550	26,610	<b>85,160</b>

Table 8 Source: 2017-2021 CHAS, Table 3



Table 8, above, illustrates renter and owner housing problems. The lack of available, accessible, and quality affordable housing in Houston only amplifies the need for housing recovery, restoration, and resilience.

### *Emergency Shelters, Interim, and Permanent Housing*

The annual Point-in-Time Homeless Count & Survey (PIT Count) is a requirement of the U.S. Department of Housing and Urban Development (HUD) for the local Continuum of Care (CoC) known as The Way Home. The PIT Count illustrates trends over time (increases or decreases) in homelessness and provides insights into the effectiveness of a community's housing programs and homeless services. The Coalition for the Homeless of Houston/Harris County serves as the Lead Agency to The Way Home and coordinates the PIT Count as part of those responsibilities. The Way Home encompasses Houston, Pasadena, Harris, Fort Bend, and Montgomery Counties in Texas.

A pre-disaster PIT Count (January 2024) of sheltered (i.e., those in emergency shelters, transitional housing, or safe haven) and unsheltered persons experiencing homelessness in Harris County, Fort Bend County, and Montgomery County areas was held on the night of January 22, 2024, with the unsheltered portion of the count conducted over three days from January 23-25, 2024.

*Table 9: Homeless Needs Table – 2024 PIT Count*

Population	Estimate the # of persons experiencing homelessness on a given night*		Total
	Sheltered	Unsheltered	
Persons in Households with Adult(s) and Child(ren)	738	0	738
Persons in Households with Only Children	9	0	9
Persons in Households with Only Adults	1,426	1,107	2,533
Chronically Homeless Individuals	176	318	494
Chronically Homeless Families	19	0	19
Veterans	163	50	213
Unaccompanied Youth (24 and under)	142	33	175
Persons with HIV	60	17	77
*2024 PIT, as reported to HUD HDX. Also, the chronically homeless status is self-reported.			

Table 9 Source: Coalition for the Homeless, Houston/Harris County

At the time of the 2024 PIT count, prior to both the 2024 Derecho and Hurricane Beryl, there was a total of 3,280 individuals experiencing homelessness.

The breakdown of unsheltered vs. sheltered homeless individuals by county is as follows:

- Harris County – 1,046 unsheltered and 1,893 sheltered
- Fort Bend County – 11 unsheltered and 41 sheltered
- Montgomery County – 50 unsheltered and 239 sheltered
- Total Count: 3,280 – 1,107 unsheltered and 2,173 sheltered

The majority, 66% (2,173 people) of the homeless population was sheltered in our CoC which encompasses Harris County (includes the City of Houston and Pasadena), Fort Bend, and Montgomery County.

All homeless households with children were sheltered, 26% of the sheltered population experiencing homelessness were under the age of 18, and 8% were between 18 and 24 years old. Three-quarters (76%) of Veterans were in a sheltered situation.

Among the unsheltered population, 41% had been homeless for three years or longer, like the percentage found in 2022 (38%). The 2024 PIT Count findings of 12% newly homeless (0-3 months) were also like the 2023 findings of 14%. The chronically homeless comprised almost one-fourth of the total population, an increase over 2022's findings (17%), with a higher percentage among the unsheltered. An interview with those who are unsheltered revealed that one of the main reasons for homelessness was due to a natural disaster, most commonly Hurricane Harvey, even though this occurred more than five years ago. The Way Home and the CFTH are working to find and help those individuals, as they are a priority population for housing.

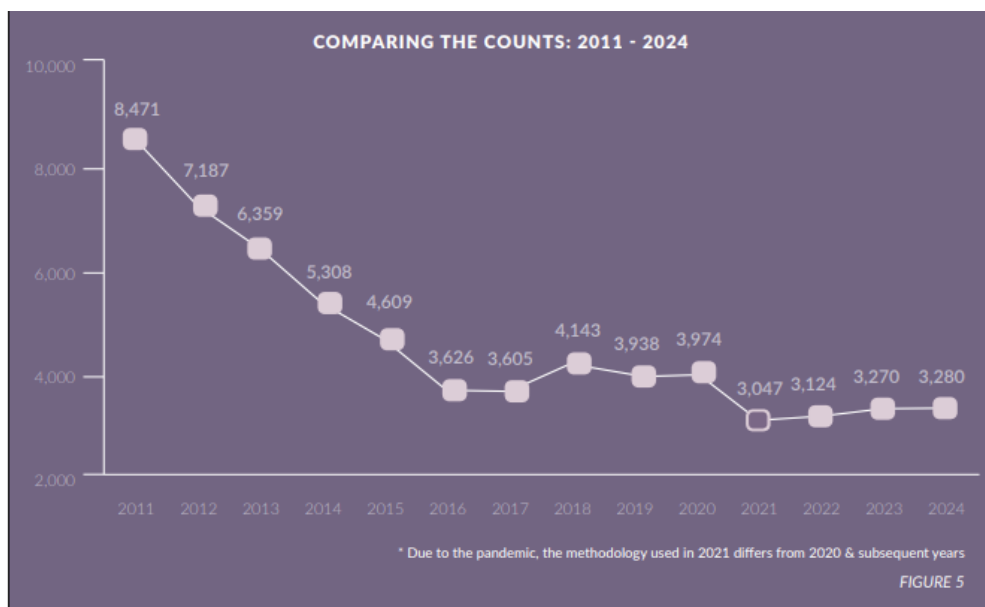


Figure 10: Comparing the Counts: 2011-2024

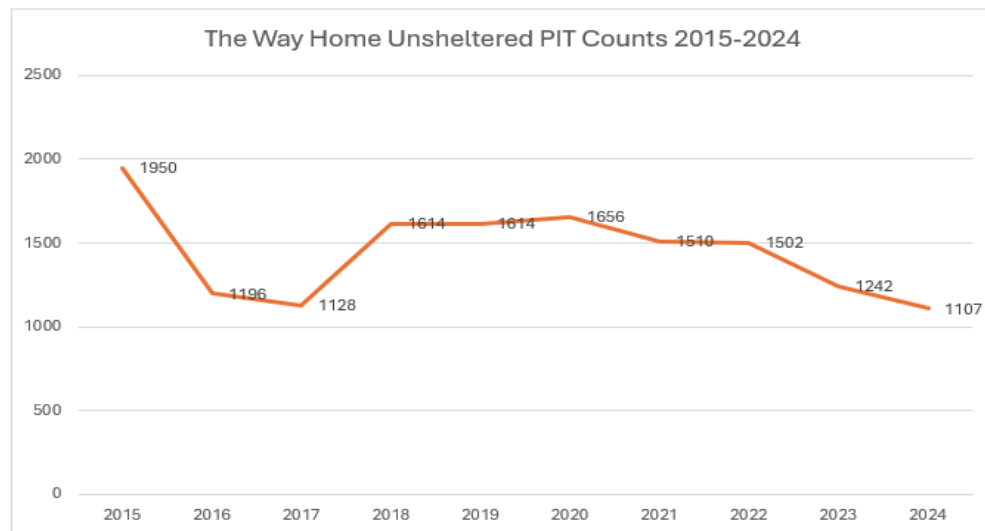


Figure 11: The Way Home Unsheltered PIT Counts 2015-2024

The City, partnering with Harris County and other The Way Home partners, has housed over 32,000 people and significantly reduced homelessness since 2011. The City is dedicated and committed to leveraging available resources, including federal dollars, in providing public services, shelters, and rehousing of homeless individuals and families. As COVID and federal funding are set to expire, additional funding and resources are needed to house more homeless persons.

Although permanent supportive housing has been a successful solution to homelessness for the most vulnerable, continuous investments and upgrades must be made at public facilities and service providers so that they are able to deploy personnel and resources to bring vulnerable individuals into a safe environment and provide needed help and services.

As the service level needs of people experiencing homelessness vary based on their circumstances, it remains crucial that all options and assistance are open and available, even during and after a natural disaster, for those people needing longer-term rental assistance and services support to achieve stability. An effective homeless response system can identify and quickly connect people who are experiencing or are at risk of experiencing homelessness to housing assistance and other services, as it works because it aligns a community, its programs, and services around one common goal: to make homelessness rare, brief, and nonrecurring.

### *Rental and Owner-Occupied Single Family and Multifamily Housing*

Cities rely on the FEMA Individual Assistance (IA) Program as a primary indicator when establishing unmet housing recovery needs for disaster recovery funding. The FEMA data provides useful and important information about applicants who ask for assistance from FEMA. However, some households do not register with FEMA, or landlords do not file claims, which can deflate the impact reflected in the data and the true impact of the disaster. Despite these limitations, it remains the best indicator for identifying individual and household disaster unmet needs related to housing recovery.

The table below shows the distribution of FEMA IA Applicants (owner and renter) by Housing Type. The vast majority of applications came from single-family houses and duplexes, followed by apartments, then townhomes. However, when it came to renters vs owners, single family homeowners and apartment/multifamily renters had the greatest number of claims.

*Table 10: FEMA IA Applicants by Household Type*

Residence Type	Total Applicants	% of Total	Owner-Occupied	Owner-Occupied %	Renter Occupied	Renter Occupied %
House/Duplex	342,938	54.14%	229,621	84.92%	113,201	30.70%
Apartment	211,269	33.36%	60	0.02%	211,151	57.27%
Mobile Home	11,425	1.80%	7,127	2.64%	4,289	1.16%
Townhouse	24,326	3.84%	13,623	5.04%	17,258	4.68%
Travel Trailer	1,459	0.23%	256	0.09%	596	0.16%
Condo	9,532	1.50%	4,784	1.77%	4,746	1.29%
Other	32,435	5.12%	14,927	5.52%	17,467	4.74%
<b>Total</b>	<b>633,384</b>	<b>100.00%</b>	<b>270,398</b>	<b>100.00%</b>	<b>368,708</b>	<b>100.00%</b>

Table 10 Source: FEMA IA

Per the Federal Register, the following represents the calculation methodology of unmet needs.

To calculate the level of damage for owner-occupied households, HUD categorized the FEMA inspected owner units into one of five categories:

- Minor-Low: Less than \$3,000 of FEMA inspected real property damage.
- Minor-High: \$3,000 to \$7,999 of FEMA inspected real property damage.



- Major-Low: \$8,000 to \$14,999 of FEMA inspected real property damage and/or more than one foot of flooding on the first floor.
- Major-High: \$15,000 to \$28,800 of FEMA inspected real property damage and/or 4 to 5.9 feet of flooding on the first floor.
- Severe: Greater than \$28,800 FEMA inspected real property damage or determined destroyed and/or six or more feet of flooding on the first floor.

Rental household damage is calculated based on personal property damage, because FEMA does not inspect rental units for real property damage. To calculate the level of damage for rental households, HUD categorized the FEMA inspected owner units into one of five categories:

- Minor-Low: Less than \$1,000 of FEMA inspected personal property damage.
- Minor-High: \$1,000 to \$1,999 of FEMA inspected personal property damage.
- Major-Low: \$2,000 to \$3,499 of FEMA inspected personal property damage or one to 3.9 feet of flooding on the first floor or determination of “Moderate” damage by the FEMA inspector.
- Major-High: \$3,500 to \$7,499 of FEMA inspected personal property damage and/or four to 5.9 feet of flooding on the first floor or determination of “Major” damage by the FEMA inspector.
- Severe: Greater than \$7,500 of FEMA inspected personal property damage and/or determined destroyed and/or six or more feet of flooding on the first floor or determination of “Destroyed” by the FEMA inspector.

The calculation of unmet needs only includes application types that are in the Major-Low, Major-High, or Severe category. The table below shows the distribution of owners and renters who were placed in the 3 categories. Across all damage categories, homeowners had greater impacts from the 2024 Disasters than renters in each damage category.

Out of 4,687 total applications, a significant majority (82.6%) fell in the major-low category. About 3 times more owners received/qualified for FEMA assistance compared to renters. Also, the renter household unmet need calculation excludes those with incomes above 50% AML, who may also have had losses; hence, the number of renters who may need assistance may be greater than what is shown in the table.

Table 11: FEMA Damage Categories

Damage Category	Count	Total Unmet Need
Major-Low	3,872	\$155,106,072
Major-High	689	\$34,494,080
Severe	126	\$6,569,514
<b>Total</b>	<b>4,687</b>	<b>\$196,169,666</b>

Table 11 Source: FEMA IA

Finally, HUD applies a disaster-specific multiplier based on the type of incident that each FEMA IA applicant falls into. DR-4781 (Derecho) was designated as a “Flood,” and DR-4798 (Beryl) was designated as a “Hurricane”.

Table 12: FEMA IA Unmet Need Multiplier by Damage Category

Disaster	Major-Low	Major-High	Severe
FEMA-DR-4781-TX	\$47,074	\$57,856	\$64,513
FEMA-DR-4798-TX	\$36,800	\$45,952	\$45,952

Table 12 Source: Federal Register (FR-6512-N-01)

Table 13: Category of Unmet Need by Owner-Occupied and Renter

Residency Type	Major-Low	Major-High	Severe	Total
Owner-Occupied	3,010	391	92	3,493
Rental*	865	298	34	1,194
<b>Total</b>	<b>3,872</b>	<b>689</b>	<b>126</b>	<b>4,687</b>

Table 13 Source: FEMA IA

\*Based on HUD unmet need calculation methodology, landlords are assumed to have adequate insurance coverage unless the unit is occupied by a renter with income less than the greater of the federal poverty level or 50% of the AMI. Hence, the table only includes renters who are below 50% AMI.

The FEMA results show that there is an unmet need of \$196,169,666, which is different from the amount provided by HUD and mentioned in the executive summary. However, as noted above, the actual amount of unmet need is likely higher because renters above 50% AMI are excluded, FEMA has not fully gone through all the applications, individuals did not put in a claim request (or did not know how to), and/or errors were made in the application, resulting in a denial/delay. The City will continue to evaluate updated data from and will update this section, as appropriate, based on the pending results of this analysis for the final Plan.

### Single Family Home Repair

In the aftermath of Hurricane Harvey (2017), the Federal Emergency Management Agency (FEMA) reported more than 161,000 homes damaged in the Houston Metropolitan Statistical Area<sup>2</sup>. The recent events in 2024 had similar impacts, with homes becoming uninhabitable (or beyond repair), with HUD estimating that the unmet need for housing, including home repairs, would amount to \$229,415,935 following the two storms.

Nationally, as home repair costs have increased due to labor and material cost increases, combined with aging housing stock, housing repair costs have remained significantly higher than pre-pandemic levels. Harvard University's Joint Center for Housing Studies (JCHS)<sup>3</sup> estimates that annual expenditures for improvements and maintenance to owner-occupied homes are expected to grow modestly through 2026. The Leading Indicator of Remodeling Activity (LIRA) provides a short-term outlook on national home improvement and repair spending to owner-occupied homes. The indicator, measured as an annual rate-of-change of its components, is designed to project the annual rate of change in spending for the current quarter and subsequent four quarters, and is intended to help identify future turning points in the business cycle of the home improvement and repair industry. In Q2 2024, when the Derecho and Beryl hit, nationally, the total estimated cost in repairs for that period was \$501B. However, since Q3 of 2024, the estimated cost has steadily increased to \$513B in Q1 of 2025.

At the local level, according to a Kinder Institute for Urban Research report<sup>4</sup> In 2024, 60% of residents in the Houston area required some type of home repair work. But maintaining a home and making repairs is costly, and public and nonprofit organizations are often strained to meet the needs of those who can't afford to have the work done on their own.

Looking more specifically at housing repair needs by type, over half (57%) of residents said they had at least one mechanical repair need, and 28% said they had at least one structural repair need. One in five said they had at least one of each type of repair.

<sup>2</sup> <https://trerc.tamu.edu/article/imperfect-storm/>

<sup>3</sup> <https://www.jchs.harvard.edu/research-areas/remodeling/lira>

<sup>4</sup> <https://rice.box.com/s/no5qdhzhx067ptmckpdk8hf0ege9h28d>



While fewer residents reported any safety and structural repair needs, those repair needs were also reported to vary both significantly and substantively by neighborhood area, and the prevalence of housing repair needs differed depending on the neighborhood area where residents lived.

Home repair is a citywide need after a disaster. Publicly funded programs are critical in assisting low-income homeowners, but local government entities often simply do not have enough funding to meet the need, unless extra appropriations, such as disaster recovery funding, are made. In response, as described in previous sections, HUD has calculated nearly \$230M in unmet needs for housing to help assist with home repairs throughout the City.

### *Multifamily Home Repair*

Since its inception, federally assisted multifamily programs like the Low-Income Housing Tax Credit (LIHTC) program have served and supported low-income households for affordable rental housing. However, in recent years, developers interested in creating new affordable housing with LIHTC or renovating existing affordable housing are facing a series of challenges, as are owner-operators of affordable housing. According to the “Fannie Mae July 2024 LIHTC Properties Facing Challenging Times” report, the current challenges faced by the affordable housing sector include an elevated interest rate environment, increased development costs, and rising operating expenses

Although affordable housing properties tend to benefit from lower real estate taxes more than market-rate properties, LIHTC properties incur larger administrative expenses relative to market-rate properties, due to a variety of compliance requirements. In addition to operating costs, high construction costs have remained a challenge for LIHTC developers. Since the start of the COVID pandemic, building material prices have collectively increased by 39%. For example, while the cost of lumber has come down from pandemic highs, it remains 22% higher than in the spring of 2020. Lastly, as of 2024, many developers are still facing shortages in financing and struggling to close the financing gap per project.

The same trend applied to Houston before the 2024 Derecho and Hurricane Beryl as well, and the occurrence of those two events further exacerbated the need for affordable rental units.

According to the Kinder Institute’s 2024 State of Housing in Harris County and Houston<sup>5</sup> report, the total number of rental units needed to close the gap between supply and demand for the lowest income tiers is about 113,000. In other words, closing the gap within the city of Houston would require spending \$25 billion to \$28 billion to build additional low-income rental housing. The city acknowledges this need and is committed to making continuous investments to develop and preserve affordable multifamily rental housing as part of its recovery efforts.

### *Insurance*

Another important aspect of recovery is homeowners’ insurance. The 2024 Texas Comptroller of Public Accounts’ report, “*The Housing Affordability Challenge*”, highlighted an increased cost of insurance, including rates and deductibles, throughout Texas. As a result, in states like California, Florida, and Louisiana, the high costs of natural disasters have caused insurance companies to limit coverage options for property owners. Similarly, in Texas, reports show some are choosing to reconsider doing business in the state, claiming storms in Texas accounted for nearly 40 percent of the company’s losses in the second quarter of fiscal year 2024. Even the Texas Windstorm Insurance Association (TWIA), the state’s insurer of last resort for property owners along the coast, recently sought a 10 percent premium increase for commercial and residential properties.

As a result of home prices and homeowners’ insurance premiums reaching new highs, some homeowners are unable to maintain insurance. As more areas are designated as natural disaster-prone and too costly to insure, insurance

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<sup>5</sup> <https://kinder.rice.edu/urbanedge/cost-to-close-houstons-low-income-housing-gap>





companies are hiking rates to unaffordable levels or dropping customers altogether. This particularly affects LMI households.

Similar trends are seen for multifamily developments as well. According to the Novogradac 2023 Low-Income Housing Tax Credit Income and Operating Expenses Report<sup>6</sup> insurance payments increased between 9.6% and 33.5% annually over the four years from 2018 through 2021, with a steep 33.5% increase in 2021.

Regions that have experienced the most significant rises in insurance costs include the Southeast, South Central, and Midwest. On a more specific state level, Florida, California, and Texas appear to be the most heavily impacted. Especially as more frequent and severe weather events, such as hurricanes, floods, and wildfires, occur, it significantly raises the number of claims. In the aftermath, insurers are likely to increase premiums to account for the heightened risk of property damage. As multifamily assets serve larger numbers of residents, there's an increased risk of liability claims, whether from accidents, injuries, or legal actions. Insurers are adjusting rates accordingly to cover these potential expenses. Lastly, as many affordable housing properties are older with aging infrastructure and systems that increase the risk of incidents, resulting in higher premiums for older properties.

Overall, as home repair costs and insurance costs rise, it makes it more difficult, especially for LMI households, to physically and financially recover from the effects of natural disasters, increasing reliance on long-term recovery funding to fill the gap.

#### *Public Housing (Including HUD-assisted Housing) and Other Affordable Housing*

The Houston Housing Authority (HHA) provides affordable housing and services to more than 60,000 low-income individuals throughout the City of Houston, serving families, elderly persons, and persons with disabilities. HHA currently operates 21 developments, which include Public Housing, mixed-income (LIHTC), RAD, and Section-8 PBV developments.

According to HHA, capital needs for the public housing portfolio were estimated at over \$250 million or \$147,000 per unit in 2024. Based on the existing capital funds allocated to HHA of \$8 million in 2024, it would take 31 years to address the anticipated capital needs of the public housing properties. Although HHA and the City have worked together to increase the availability of public and affordable housing, it comes with many challenges. Continued disasters only amplify the needed repairs, reconstruction, and capital expenditures needed in our communities.

Both the 2024 Derecho and Hurricane Beryl caused damage to the City's Public Housing developments, as summarized below.

*Table 14: HHA Damaged Units - Derecho*

County / Municipality	Total # PHAs Developments	Total PHA Units	Total PHA Developments Damaged	Total PHA Development Power Loss	# of Units Damaged	Remaining Unmet Need
HHA Units (includes PH/LIHTC/RAD)	21	3,900	10	5	3	\$26,055

Table 14 Source: Houston Housing Authority

According to HHA, during the 2024 Derecho, seven HHA communities/developments sustained damage, which included downed trees, water leaks, loss of power, loss of water, and roof damage. Five developments experienced power loss during and after the storm. Three units experienced broken doors, and two windows were shattered

<sup>6</sup> <https://www.novoco.com/periodicals/articles/lihtc-property-insurance-rates-increasingand-location-plays-a-major-role>

because of the strong wind. HHA estimates that costs/damages are \$26,055, with repairs/removals still needed for some developments

*Table 15: HHA Damaged Units – Hurricane Beryl*

County / Municipality	Total # PHAs Developments	Total PHA Units	Total PHA Developments Damaged	Total PHA Development Power Loss	# of Units Damaged	Remaining Unmet Need
HHA Units (includes PH/LIHTC/RAD)	21	3,900	18	5	72	\$2,504,554

Table 15 Source: Houston Housing Authority

On the other hand, Hurricane Beryl had a greater impact, causing over 72 units across 18 of the 21 HHA communities to sustain damage, which included window damage, roof damage, siding/fencing/structure damage, property damage (such as cars and other vehicles), and power/water loss. HHA estimates damages to be over \$2.5 million.

HHA also administers the Housing Choice Voucher (HCV) - Section 8 program. However, voucher holders live across the city. Therefore, it is difficult to determine the number of HCV holders affected by either/both events unless individuals and homeowners self-report to HHA that their unit/home has been damaged. Additionally, FEMA data does not classify whether the individual(s) making a claim for personal property loss are voucher holders. So, it is possible that many voucher holders were also affected by both events.

Although no permanent relocation was needed from either event, some residents had to seek temporary shelter or another place as water/power loss occurred during the summer, which resulted in health and safety hazards/risks for many HHA program participants. The City will continue working with HHA and other affordable housing providers to address unmet needs that have been exacerbated by compounding disasters.

## Infrastructure

The City of Houston is a sprawling city, and therefore, public infrastructure and improvements are often in need of enhancement. At the same time, Houston's infrastructure is aging and may require replacement.

Both the 2024 Derecho and Hurricane Beryl exposed vulnerabilities in Houston's infrastructure, particularly regarding power outages and flooding, prompting calls for improvements and increased resilience.

The City of Houston's Capital Improvement Plan (CIP) addresses the infrastructure needs. The CIP primarily focuses on the need to invest in infrastructure to meet the City's short and long-term needs for streets, storm drainage, drinking water, and wastewater systems.

Unlike previous disasters, the 2024 events occurred within two months of one another. In both events, power outages led to infrastructure system failures, such as with the City's drinking water/wastewater systems. It also reduced the availability of cooling centers and access to City services. The City's preparation and post-disaster assistance provided to residents relies heavily on electricity, which may be subject to outages during a disaster. The loss of power can potentially leave residents stranded or in unsafe conditions in their homes, but it can also impact emergency responders' and the City's ability to provide critical public safety services and other general services that are necessary before, during, and after a disaster. During both 2024 events, the critical infrastructure across the city experienced challenges in power generation reliability.

Cities rely on the FEMA Public Assistance (PA) Program as a primary indicator when establishing infrastructure unmet recovery needs for disaster recovery funding. The FEMA PA data provides useful and important information about applicants who ask for this assistance from FEMA. To calculate 2024 unmet needs for infrastructure projects, HUD received FEMA cost estimates on November 20, 2024, of the expected local cost share to repair the permanent public



infrastructure (Categories C to G) to their pre-storm condition. Because many of the larger disasters of 2023 and 2024 occurred recently and infrastructure need data remain incomplete for many disasters, no disaster in 2023 or 2024 receives for infrastructure unmet need of less than 10 percent of their unmet housing need. This is reflected in the amount shown in Tables 6 and 7, as HUD did not break down this amount between Business and Infrastructure in the HUD's Allocation of CDBG-DR funds for 2023/2024 Disasters brief.

Table 16 shows the estimated FEMA PA Cost by each category made available to the City of Houston through the program, and Table 17 shows Total Cost vs Cost Share Total.

*Table 16: Total Cost and Need by PA Category*

PA Category	Estimated PA Cost	Local Cost Share*	Total Need
A – Debris	\$105,248,472.00	\$26,312,118.00**	\$78,936,354.00
B – Emergency Measures***	-	-	-
C – Roads and Bridges	-	-	-
D – Water Control Facilities	-	-	-
E – Building and Equipment	\$21,687,486.68	\$5,421,486.72	\$16,265,999.96
F – Utilities	\$2,145,080.60	\$536,269.50	\$1,608,811.10
G - Other	\$6,765,384.25	\$1,691,346.06	\$5,074,038.19
<b>Total</b>	<b>\$135,846,423.53</b>	<b>\$33,961,220.28</b>	<b>\$101,885,203.25</b>

Table 16 Source: City of Houston

\*Typically, FEMA covers 75%, with the remaining 25% being the responsibility of local governments or other entities involved for Category A.

\*\* Local cost share for Category A - Debris will be submitted for coverage by the State of Texas.

\*\*\* HUD unmet need calculation excludes FEMA PA Category B.

*Table 17: FEMA PA Total Cost vs Cost Share Total*

Disaster Number	FEMA PA Total Cost	Cost Share Total
4781	\$4,259,637.21	\$1,064,909.30
4798	\$26,338,313.76	\$6,584,578.44
<b>Total</b>	<b>\$30,597,950.97</b>	<b>\$7,649,487.74</b>

Table 17 Source: FEMA PA

After both events, the City of Houston assessed damage to City-owned buildings and facilities. The estimated damage was \$135 million, and the City will seek state funds to repair and address damage related to Category A (\$26,312,118.00), leaving a remaining unmet need of \$7,649,487.74 from the 2024 Derecho and Hurricane Beryl.

## Economic Revitalization

### Overview

During the last five years, the Houston Metropolitan Statistical Area (MSA) enjoyed continuous economic growth. The Houston MSA was recently ranked as the seventh-largest economy in the nation.<sup>7</sup> Growth has been especially strong since the COVID-19 pandemic began to subside in 2021. In the two years from 2021 to 2023, Houston's GDP grew by 25.1 percent, which was faster than the U.S. overall, where GDP grew by 16.0 percent during the same period. In fact, among the 20 most populous U.S. metro areas, Houston has had the fastest-growing economy since 2021, as measured by GDP.

<sup>7</sup> *Houston Economic Highlights 2024*, Greater Houston Partnership (June 2024).



Historically, much of Houston's economy has been based around energy businesses, and this continues today. Five industries- manufacturing, professional/business services, real estate, government, and healthcare/ education- have been the leading drivers of this growth. Together, they made up more than 50 percent of Houston's GDP in 2023. However, in recent years, digital technology and innovation have also continued to grow, with over 60 organizations supporting tech start-ups in Houston. This innovation has also led to many small businesses to flourish in the City.

### Small Business Administration Loans

Table 18: Economic Revitalization Unmet Need

Application Status	Count	Median	Amount
SBA declined applicants with verified losses < \$12,000	1,008	\$0.00	\$0.00
SBA declined applicants with verified losses between \$12,000 and \$29,999	199	\$21,392.00	\$4,257,008.00
Subtotal (not included in unmet need)	1207		\$4,257,008.00
SBA declined applicants with verified losses between \$30,000 and \$64,999	261	\$45,000.00	\$11,745,000.00
SBA declined applicants with verified losses between \$65,000 and \$149,999	255	\$95,040.00	\$24,235,200.00
SBA declined applicants with verified losses > \$150,000	286	\$525,771.20	\$150,370,506.00
<b>Unmet Need</b>	<b>802</b>		<b>\$186,350,706.00</b>

Table 18 Source: SBA Data

HUD provides a methodology for calculating the unmet need for economic revitalization by using the following categories:

- Category 1: real estate + content loss = below \$12,000
- Category 2: real estate + content loss = \$12,000–\$29,999
- Category 3: real estate + content loss = \$30,000–\$64,999
- Category 4: real estate + content loss = \$65,000–\$149,999
- Category 5: real estate + content loss = \$150,000 and above

Then, for properties with real estate and content loss of \$30,000 or more, HUD calculates the estimated amount of unmet needs for small businesses by multiplying the median damage estimates for each of the categories above by the number of small businesses denied an SBA loan in that category. Using the methodology described, the City determined the estimated unmet need for economic revitalization to be \$186,350,706.00.

### Unemployment

As described in the previous section, both events significantly impacted the Houston economy. Across the United States, the Derecho caused an estimated \$9-11 billion in total economic loss and damage, and Hurricane Beryl caused an estimated \$28-32 billion in total economic loss and damage, including significant business losses in Houston. The storm caused wind damage and power outages, leading to temporary and permanent shutdowns of many businesses, resulting in job and income losses.

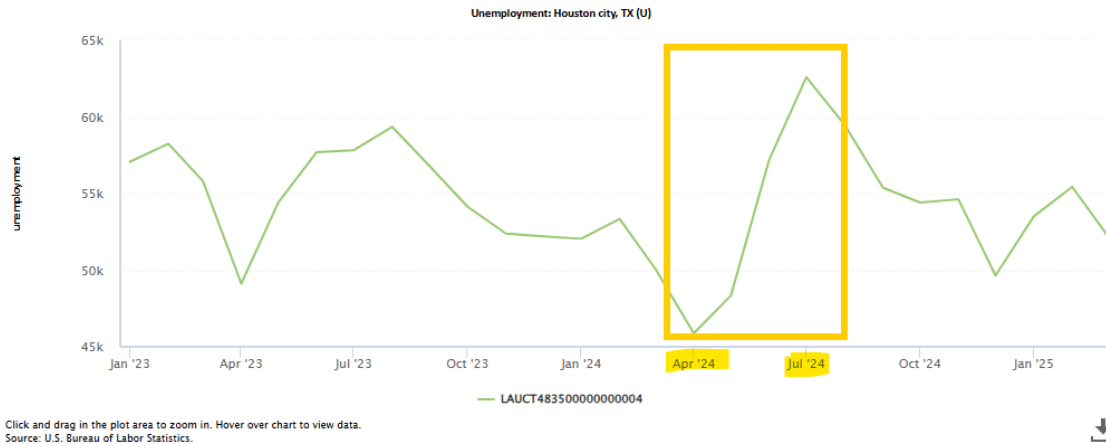


Figure 12: Unemployment: Houston City, TX

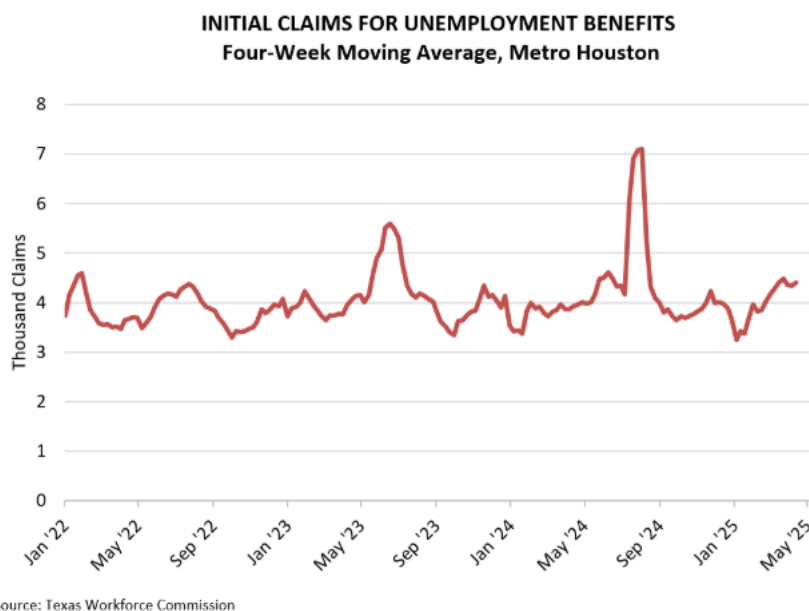


Figure 13: Initial Claims for Unemployment Benefits (4WK AVG) Metro Houston

Figures 12 and 13 show the impact of both events. As the graph shows, the number of unemployed person(s) significantly jumps from May to July 2024, which coincides with the occurrence of the Derecho and Hurricane Beryl. Initial claims for unemployment benefits also jumped significantly in July. Unemployment not only affects people who have lost jobs, but businesses as well, especially small businesses that require employees. Although many people were able to find jobs after the storms, unemployment remains higher than it was pre-disaster (April of 2024).

On top of unemployment, the storms had a significant impact on many people and businesses, as food, products, and other materials sold at many stores were destroyed. Downtown Houston's infrastructure suffered significantly, with multiple high-rise buildings sustaining extensive damage from the derecho's straight-line winds, which also contributed to the supply chain and transportation delays. Lastly, there was a spike in burglary reports in Houston following Hurricane Beryl, with businesses being targeted during and after the storm, adding more to the unaccounted indirect damage many businesses suffered.

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# Mitigation Needs Assessment

As required by HUD, the City of Houston developed a mitigation needs assessment based in part on the *City of Houston Hazard Mitigation Plan* (<https://www.houstontx.gov/2023-2028-Hazard-Mitigation-plan.pdf>) included in the Appendix. To develop the mitigation needs assessment, the City reviewed: the FEMA Local Mitigation Plan Handbook, Department of Homeland Security (DHS) Office of Infrastructure Protection, FEMA Lifelines Implementation Toolkit (2023), resources about wildfires from the U.S. Forest Service, the National Interagency Coordination Center (NICC), the CDBG-MIT Action Plan, and HUD's CPD mapping tool. This assessment addresses current and future risks, including hazards, vulnerabilities, and impacts of disasters, and identifies appropriate mitigation actions to reduce the highest risks that Houston faces. This mitigation needs assessment informs the use of the 15% CDBG-DR mitigation set-aside and helps to build resilience and mitigation measures into recovery programs and projects. Upon a review of the full range of natural hazards suggested under the FEMA planning guidance, the City of Houston identified 12 hazard types, shown in Table 19 (Hazard Descriptions) below. These 11 natural hazards and 1 quasi-technological hazard (dam failure) have created or have the potential to create significant losses to justify inclusion in the *City of Houston Hazard Mitigation Plan*. As conditions change, additional needs are identified, or additional resources become available, the City may amend its Hazard Mitigation Plan.

Table 19: Hazard Descriptions

HAZARD	DESCRIPTION
ATMOSPHERIC	
Extreme Heat	Extreme heat is the condition whereby temperatures hover ten degrees or more above the average high temperature in a region for an extended period of time.
Hail	Hailstorms are a potentially damaging outgrowth of severe thunderstorms. Early in the developmental stages of a hailstorm, ice crystals form within a low-pressure front due to the rapid rising of warm air into the upper atmosphere and subsequent cooling of the air mass.
Hurricane / Tropical Storm	A hurricane is an intense tropical weather system of strong thunderstorms with a well-defined surface circulation and maximum sustained winds of 74 mph or higher.
Lightning	Lightning is a sudden electrostatic discharge that occurs during an electrical storm. This discharge occurs between electrically charged regions of a cloud, between two clouds, or between a cloud and the ground.
Thunderstorm Wind	A thunderstorm occurs when an observer hears thunder. Radar observers use the intensity of the radar echo to distinguish between rain showers and thunderstorms. Lightning detection networks routinely track cloud-to-ground flashes, and therefore thunderstorms.
Tornado	A tornado is a violently rotating column of air that has contact with the ground and is often visible as a funnel cloud. Its vortex rotates cyclonically with wind speeds ranging from as low as 40 mph to as high as 300 mph. The destruction caused by tornadoes ranges from light to catastrophic, depending on the location, intensity, size, and duration of the storm.
Winter Storm	Severe winter storms may include snow, sleet, freezing rain, or a mix of these wintry forms of precipitation. Blizzards, the most dangerous of all winter storms, combine low temperatures, heavy snowfall, and winds of at least 35 miles per hour, reducing visibility to only a few yards. Ice storms occur when moisture falls and freezes immediately upon impact on trees, power lines, communication towers, structures, roads, and other hard surfaces. Winter storms and ice storms can down trees, cause widespread power outages, damage property, and cause fatalities and injuries to human life.
HYDROLOGIC	
Drought	A prolonged period of less than normal precipitation such that the lack of water causes a serious hydrologic imbalance. Common effects of drought include crop failure, water supply shortages, and fish and wildlife mortality.

HAZARD	DESCRIPTION
Flood	The accumulation of water within a body of water, which results in the overflow of excess water onto adjacent lands, usually floodplains. The floodplain is the land adjoining the channel of a river, stream, ocean, lake, or other watercourse or water body that is susceptible to flooding. Most floods fall into the following three categories: riverine flooding, coastal flooding, and shallow flooding.
OTHER	
Expansive Soils	Expansive soils are soils and soft rock that tend to swell or shrink due to changes in moisture content. Changes in soil volume present a hazard primarily to structures built on top of expansive soils.
Wildfire	A wildfire is an uncontrolled fire burning in an area of vegetative fuels such as grasslands, brush, or woodlands. Heavier fuels with high continuity, steep slopes, high temperatures, low humidity, low rainfall, and high winds all work to increase the risk for people and property located within wildfire hazard areas or along the urban/wildland interface. Wildfires are part of the natural management of forest ecosystems, but most are caused by human factors.
TECHNOLOGICAL	
Dam Failure	Dam failure is the collapse, breach, or other failure of a dam structure resulting in downstream flooding. In the event of a failure, the energy of the water stored behind even a small dam is capable of causing loss of life and severe property damage if development exists downstream of the dam.

Table 19 Source: City of Houston Hazard Mitigation Plan Update 2023 - Section 4: Risk Overview

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## Connection of Proposed Programs and Projects to Unmet Needs and Mitigation Needs

Houston is no stranger to disasters. It is not a question of “if” but rather a question of “when” the next disaster will impact the City. Houston’s geography and proximity to the Gulf of Mexico, increase the City’s vulnerability. Since 2008, there have been 10 presidentially declared disasters. There have also been other localized events that did not rise to the level of a presidentially declared disaster but impacted many residents and businesses in the City.

The City of Houston acknowledges HUD’s requirement for a proportionate allocation of funding across various CDBG DR eligible cost categories, including housing and economic revitalization; however, the City has learned through years of responses to disasters if power disruption, debris removal, and availability of public safety vehicles and equipment is not prioritized, then it is difficult if not impossible to address long term disaster recovery to include housing and economic development. For this reason, the City has made an appropriate allocation of funding to infrastructure and housing to fund power generation, debris removal, and public safety vehicles and equipment.

Our plan is to rebuild housing for our residents, but after a major storm the most immediate emergency to residents and businesses of Houston is historically the lack of power at essential city service locations, including fire stations, water and wastewater facilities, and cooling centers at multiservice centers. The City has learned that the city cannot address damages to and shortages of housing unless the emergency needs are met first. The existing homes and businesses first require power, clean water, functioning wastewater facilities, and debris cleared in order to allow emergency services to reach impacted residents. Only after those services are provided can the allocation of housing dollars be used to build and repair homes.

The City has developed and funded a comprehensive strategy to house its unhoused population called “Mayor’s Plan to End Street Homelessness” which will include funding that addresses the majority of the remaining \$91M of unmet housing needs required by HUD’s CDBG-DR regulations. The Mayor’s Plan includes the non-federal expenditure of \$16M for acquisition of a triage and transitional housing shelter for homeless individuals and the expenditure of up to \$4M of annual, non-federal expenditures to operate the shelter. In addition, approximately \$39M of non-federal, local funds will be used to support the housing, diversion, and services portion of the Mayor’s Plan. Thus, the City will be spending approximately \$43M annually using local, non-federal funds, in addition to the one-time expenditure to acquire the shelter, to support housing for Houston’s most vulnerable residents.

The CDBG-DR Program Allocations below reflect the City’s strategy to ameliorate deficiencies in its capacity to meet the needs of Houston residents and businesses before, during, and after disasters, while also addressing single family and multifamily housing needs, and the needs of the City’s homeless population. At least 70 percent of all program funds will benefit LMI persons or households.

Programs have been designed to address direct and indirect impacts from the 2024 Derecho and Hurricane Beryl, as well as to mitigate the impacts of future disasters.



The City will use 100% of the CDBG-DR allocation, shown in Table 20 below, in the HUD-identified MID area (Houston, TX).

Table 20: CDBG-DR Program Allocations

Eligible Cost Category	CDBG-DR Allocation Amount	% of CDBG-DR Total Grant Award	Amount of CDBG-DR Allocation for LMI Benefit
Administration	\$15,732,250.00	5.00%	N/A
Planning	\$200,000.00	0.06%	N/A
Housing	\$109,183,850.00	34.69%	100.00%
Infrastructure	\$101,291,150.00	32.19%	40.00%
Economic Revitalization	\$0.00	0.00%	0.00%
Public Services	\$47,196,750.00	15.00%	86.40%
Mitigation	\$41,041,000.00	13.04%	50.00%
<b>Total</b>	<b>\$314,645,000.00</b>	<b>100%</b>	<b>70.22%</b>

Table 20 Source: City of Houston HCD

Table 21 shows a comparison of the proportion of unmet need and the corresponding program allocation percentage.

Table 21: Unmet Need and Program Allocation Percentage

Eligible Cost Category	Unmet Need	% of Total Unmet Need	Program Allocation Amount	Percent of Program Allocation Amount
Housing	\$229,415,935.00	46.50%	\$109,183,850.00	36.55%
Infrastructure	\$7,649,487.74	1.55%	\$101,291,150.00	33.91%
Economic Revitalization	\$186,350,706.00	37.77%	\$0.00	0.00%
Public Services	\$70,000,000.00	14.19%	\$47,196,750.00	15.80%
Mitigation	Unavailable	0.00%	\$41,041,000.00	13.74%
<b>Total</b>	<b>\$493,416,128.74</b>	<b>100%</b>	<b>\$298,712,750.00</b>	<b>100.00%</b>

## Housing

This program addresses unmet housing needs by repairing disaster-related damage and reducing future risks to both multifamily and single-family homes. The City has historically prioritized a housing-centered recovery approach, dedicating more than 80% of its Community Development Block Grant–Disaster Recovery (CDBG-DR) funding—nearly \$775 million—to housing-related programs following the disasters of 2008, 2015, 2016, 2017, and 2021.

While the City continues to invest a significant portion of disaster recovery funding from the 2024 events in housing (36.5%), it is also committing approximately \$43 million annually in local, non-federal resources to initiatives that provide shelter and support for individuals currently living on the streets, in alignment with the Mayor’s Plan to End Street Homelessness and includes both infrastructure and mitigation eligible activities that directly benefits both single and multiple family housing.



Investments in power generation infrastructure will play a crucial role in reducing damage to the City's housing stock by ensuring the continued operation of essential public services—such as potable water and wastewater systems—during and immediately after major storms. In addition, planned vegetation maintenance and debris removal programs will help keep neighborhoods accessible for emergency response vehicles and reduce the risk of flooding and storm damage caused by fallen trees or obstructed drainage systems.

## Infrastructure

### Power Generation Resilience Program

This program meets unmet needs related to emergency power generation, addressing indirect impacts from the disasters, increasing resilience, reducing risk, and lessening the impact of future disasters. Loss of power during and following these events has been a significant barrier to initiating an effective response and recovery strategy that this program will help to mitigate. Ensuring the continuity of critical public safety functions/services continues to be a challenge in the immediacy and aftermath of these events when widespread power outages occur.

With the 2024 Derecho, more than 1 million customers lost power in the greater Houston area, and with Hurricane Beryl, this number rose to more than 2.7 million customers (many without power for 10 days or more. These power outages impacted critical City public facilities and residential customers alike.

During Hurricane Beryl, a significant number of heat-related illnesses were reported. Of those who died during Hurricane Beryl, a significant portion of these deaths were attributed to heat-related causes associated with the loss of power and lack of air conditioning in homes. Not only does this accounting of residents in distress highlight the need for emergency power generation for critical fire and police services, but it also highlights the need for accessible public facilities throughout the City where residents can seek temporary respite and access resources.

The City of Houston owns and operates the largest municipal water utility system in the country. It serves over 5.6 million people, stretching over 7 counties, with 7200 miles of drinking water pipes and 6,100 miles of wastewater pipes.

- With the lack of power supporting the City's water utility system, the City experienced trouble keeping wastewater moving through the system. All 44 of the City's wastewater operation locations were impacted during these disasters. Due to the lack of power, these operations were forced to relocate and adjust backup power generators throughout the system to power the 44 wastewater lift stations and treatment plants. Despite these efforts, 55 public sanitary sewer overflows occurred due to loss of power during Hurricane Beryl, and another 16 were reported due to the 2024 Derecho
- With the lack of power supporting the City's water utility system, the City experienced trouble keeping water moving through the system to maintain adequate line pressure, which is regulated by the Texas Commission on Environmental Quality. Drinking water operations faced significant vulnerability and risk associated with outdated diesel generators. This shuffling of generators from one repump station to the next (7 total), was done to avoid a boil water notice for 5.6 million people already experiencing a lack of power during the summer months. There was a consistent state of fuel insecurity as many were competing for the same fuel supply. Logistics of getting fuel to the drinking water re-pump stations were also made more challenging due to storm damage and debris. Additionally, these systems were only designed to meet a minimum back-up power generation requirement of 72 hours, not the 10+ days of power loss during Hurricane Beryl. Houston's repump stations not only support residents, but also critical businesses such as the Texas Medical Center (the world's largest) and the Houston Ship Channel (with 44% of the US petrochemical refining capacity).

The COH's 12 Multi-Service Centers serve many needs during a disaster, such as cooling/warming centers and distribution points for supplies. During the 2024 Derecho and Hurricane Beryl, none of the City's Multi-Service Centers had backup power to be able to function properly in those roles. With no power at these facilities, their usefulness was greatly diminished. Similarly, Libraries, which can also serve these functions, lack backup power to do so.



The City of Houston currently has 90 fire stations and 5 police stations that do not have backup power generation. These facilities house our public safety officials and provide critical services to our communities during a disaster. Fire and Police stations left without power during both the 2024 Derecho and Hurricane Beryl put our public safety officials and the City's residents at an elevated risk by not having an appropriate emergency response capacity. The Power Generation Resilience Program is intended to address emergencies/back-up power generation needs at the City facilities.

## Public Services

### Homeless Services Program

This program meets unmet needs related to homelessness, addressing indirect impacts from the disasters, increasing resilience, reducing risk, and lessening the impact of future disasters. The City is expanding its strategy beyond permanent housing, e.g., to include shelter and "specialty beds," to be able to offer different levels of care as a steppingstone for those with acute needs. Nightly, 3,280 individuals face homelessness, with 1,100 unsheltered. Houston strives to help homeless neighbors with immediate access to supportive services, ensuring there is no more waiting on the streets. Expanding outreach, shelter, and streamlined housing access for individuals and front-line teams. Moving all remaining individuals experiencing unsheltered/street homelessness into housing with supportive services. And finally, to establish hubs across the region to offer immediate support and services, facilitating a seamless transition from the streets to stable, permanent housing. This public services program will address these needs.

The 2025 PIT Count found a total of 3,325 people experiencing homelessness on the night of Jan. 27, 2025, an increase of 45 people from the 2024 count, reflecting a relative stability in the region's overall homeless population, but a notable shift in the distribution between sheltered and unsheltered individuals. The 2025 PIT Count identified 1,282 people as being unsheltered, representing a 15.8% increase from 2024. However, there was a decrease of 6% from 2024 for those staying in a shelter (2,043). The rise in unsheltered homelessness is due in part to reduced shelter capacity in 2024; shelters impacted by events had reduced beds available due to both the 2024 Derecho and Hurricane Beryl. Additionally, among those who are homeless, 19.6% cited "financial" (e.g., lack of income) as the main reason, and 14% due to job loss, which could be attributed to the two events in the summer of 2024.

Within the same population, more than half (56%) reported a mental health condition, and most of those (74%) said it significantly limited their ability to work or live independently. Nearly half (46%) reported a substance use disorder, with 60% of that group noting it also impaired their ability to maintain employment or housing stability. While only 3% (n = 37) reported their homelessness was the result of a natural disaster, Coordinated Entry enrollments in 2025 reflect a significant increase (12%) in storm-related causes.

As of today, more than 8,600 people are living in a housing program of The Way Home. Without sufficient capacity and permanent housing flow, street homelessness grows, and the need for integrated behavioral health and housing interventions to support this population is in dire need, especially for those who are or at risk of becoming homeless.

Although it is hard to quantify the actual damage due to the 2024 Derecho and Hurricane Beryl related to public services, disasters severely affect survivors who are experiencing homelessness or are at risk of experiencing homelessness because of impacts to housing, shelters, and homeless services. These impacts to homeless service providers and the people they serve include: 1) Disrupting lives and support networks of individuals and families experiencing homelessness resulting in increased need for assistance and increased work for homeless providers, 2) Damaging or rendering unusable homeless shelters or other facilities for programs that serve individuals and families

experiencing homelessness, and 3) Significantly increasing the number of people experiencing homelessness or at risk of homelessness because homes become damaged or unlivable.

### Emergency Response/Public Safety Program

This program meets unmet needs related to emergency response, addressing indirect impacts from the disasters, increasing resilience, reducing risk, and lessening the impact of future disasters. During Hurricane Beryl, the city and county set up a triage facility for those leaving hospitals that didn't yet have power in their homes. Having ambulances at the ready, especially in times of disaster, is critical to supporting our residents. The lack of power during and after a disaster puts a strain on the emergency response and public safety network. While most hospital systems are connected to an emergency power grid, the patients that they are providing care to during or after a disaster do not have emergency power at home. Due to these circumstances, patients who needed to be in a stable environment were not released from hospitals because of the lack of power in their homes. This situation caused a large buildup of Houston Fire Department ambulances waiting to deliver patients to emergency rooms and hospitals across the city, putting a strain on the ability of the department to respond to new emergencies where life-saving care was needed. Increasing capacity in the Houston Fire Department's ambulance fleet will allow them to provide critical emergency response during or after a disaster.

During a disaster, public safety needs to respond to an emergency in any situation. Many disasters in Houston, including Beryl, have brought about flash or continuous flooding that impacts public safety's ability to respond to emergency situations. Additional high-water vehicles or other lifted 4-wheel drive options are needed to help traverse challenging conditions during a disaster.

The lack of power during and after a disaster can have negative effects on the communications infrastructure used to support the City of Houston's emergency response network. With extended periods of time without power during both the 2024 Derecho and Beryl, the City of Houston's emergency communications network experienced issues related to connectivity and service. Portable communications solutions are needed during and after a disaster.

## Mitigation

### Debris Repository Acquisition and Development Project

This project meets the definition of mitigation, addressing indirect impacts from the disasters by increasing resilience, reducing risk, and lessening the impact of future disasters. High wind events like the 2024 Derecho and Beryl often have tremendous impacts on Houston's vegetation and tree canopy. Debris from uprooted trees, broken tree limbs, and other vegetation that is damaged by high winds often impacts not only residential and commercial property, but public infrastructure like roads and traffic signals. During these two Presidentially Declared Disasters, over 4.5 million cubic yards of storm debris were collected. Debris depository sites are set up throughout the City to collect and sort the debris for appropriate disposal methods. Often those sites are selected on a temporary and needs basis, limiting opportunities to select the most appropriate site for a debris depository. This project is intended to address the need for permanent debris repositories to support vegetation management and debris removal operations.

### Vegetation Management/Debris Removal Program

This program meets unmet needs related to debris management and removal, addressing indirect impacts from the disasters by increasing resilience, reducing risk/damage, and lessening the impact of future disasters. To aid in reducing damage from the impacts of high wind events on critical infrastructure and property and reduce the financial burden on both constituents and the government when dealing with disasters. Preventative and mitigative vegetation/tree-cutting and debris removal operations will provide for reduced levels of storm-generated debris that can lead to hazards, damage, and flooding along main streets and thoroughfares. Overgrown vegetation can encroach on right-of-way areas such as roads, highways, and bicycle pathways. This overgrowth can have dangerous



consequences pre- and post-disaster, such as traffic accidents, fires, and power outages. This program will address both mitigative and post-disaster needs.

## Connection of Programs to Hazard Mitigation Plan Risks

The City continues to be vulnerable to hazards such as flooding, hurricanes, and prolonged periods of extreme heat, along with other less frequent hazards identified in the City's Hazard Mitigation Plan. The table below shows how the planned programs address high vulnerability/significant risk to the lifelines shown, associated with the hazards listed above.

Table 22: Programs Address High Vulnerability/Significant Risk

Program Type	Safety and Security	Food, Hydration, and Shelter	Health and Medical	Energy (Power & Fuel)	Communications	Transportation	Hazardous Material	Water System
Single Family Housing Program	✓	✓	✓					
Multifamily Housing Program	✓	✓	✓					
Power Generation Resilience	✓	✓	✓	✓	✓	✓		✓
Emergency Response/Public Safety	✓		✓		✓	✓		
Homeless Services Program	✓	✓	✓					
Debris Repository Acquisition/Development						✓	✓	
Vegetation Management/Debris Removal						✓	✓	

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## Allocation and Award Caps/Funding Criteria

This section describes use of CDBG-DR allocation by eligible cost category, as shown in Table 23 below. This information is further broken out by activity/program.

Pre-award activity delivery costs for staff time in developing program policies, guidelines, and SOPs; developing NOFAs/RFPs and initiating related processes; developing and initiating marketing and outreach campaigns; and performing environmental reviews associated with the implementation of specific eligible CDBG-DR activities may also be included.

Table 23: CDBR-DR Program Allocations

Eligible Cost Category	CDBG-DR Allocation Amount	% of CDBG-DR Total Grant Award	Amount of CDBG-DR Allocation for LMI Benefit
Administration	\$15,732,250.00	5.00%	N/A
Planning	\$200,000.00	0.06%	N/A
Housing	\$109,153,850.00	34.69%	100.00%
Infrastructure	\$101,291,150.00	32.19%	40.00%
Economic Revitalization	\$0.00	0.00%	0.00%
Public Services	\$47,196,750.00	15.00%	86.40%
Mitigation	\$41,041,000.00	13.04%	50.00%
<b>Total</b>	<b>\$314,645,000.00</b>	<b>100%</b>	<b>70.22%</b>

Table 23 Source: City of Houston HCD

## Administration

Administration may include the costs for staff time and overhead related to the general management, oversight, coordination, and implementation of the CDBG-DR grant, as well as the costs for administrative services performed under third-party contracts or agreements, such as general legal services, accounting services, and audit services.

Table 24: Grantee Administration Activity Overview

Eligible Cost Category	CDBG-DR Allocation Amount	% of CDBG-DR Grant Award
Administration	\$15,732,250.00	5.00%
<b>Total</b>	<b>\$15,732,250.00</b>	<b>5.00%</b>

Table 24 Source: City of Houston HCD

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## Planning

Planning may include eligible costs for staff time associated with assessing impacts from these disasters, conducting needs assessments, fulfilling citizen engagement requirements, and developing the Action Plan for Disaster Recovery and related documents.

Table 25: Grantee Planning Activity Overview

Eligible Cost Category	CDBG-DR Allocation Amount	% of Total CDBG-DR Grant Award
Planning	\$200,000.00	0.06%
Total	<b>\$200,000.00</b>	<b>0.06%</b>

Table 25 Source: City of Houston HCD

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## Housing

### Housing Programs Overview

The housing affordability crisis in Houston was amplified due to the two storm events in 2024 (Derecho and Beryl) as both single-family homes and multifamily rental properties suffered severe damage. Tens of thousands of single-family homes and multifamily units across the Houston area sustained damage from the 2024 Derecho and Hurricane Beryl. Many homes in Houston remain damaged or uninhabitable, even a year after the 2024 events. Home repair is a citywide need after a disaster, and publicly funded programs are critical in assisting low-income homeowners. At the local level, in 2024, an estimated 60% of residents in the Houston area required some type of home repair work. As maintaining a home and making repairs are costly, publicly funded programs are critical in assisting low-income homeowners to meet the needs of those who can't afford to have the work done on their own.

The shortage of affordable rental homes available to meet the needs of low-income renters in Houston was also exacerbated by these disasters as developments lost power, water, and sustained physical damage (like broken windows, roofs, etc.) As a result, rental properties that sustained damage forced landlords to displace or evict tenants or increase rents after repairs, exacerbating housing insecurity. Efforts to restore rental housing must prioritize low-income and vulnerable renters who are at the highest risk of displacement.

The City will operate two housing programs, shown below in Table 26, to assist both renters and homeowners to address unmet needs, mitigate against future disasters by upgrading or retrofitting both single-family homes and multifamily developments, and help stabilize Houstonians post-disaster.

Table 26: Grantee Housing Programs Overview

Housing Programs	CDBG-DR Allocation Amount	% of CDBG-DR Allocation for LMI Benefit	% of CDBG-DR Allocation for Urgent Need
DR24 Multifamily Housing Program	\$59,183,850.00	100.00%	0.00%
DR24 Single Family Home Repair Program	\$50,000,000.00	100.00%	0.00%
<b>Total</b>	<b>\$109,183,850.00</b>	<b>100.00%</b>	<b>0.00%</b>

Table 26 Source: City of Houston HCD

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### *Housing Program 1: DR24 Multifamily Housing Program*

Program Title: DR24 Multifamily Housing Program

**Amount of CDBG-DR Funds Allocated to this Program:** \$59,183,850

**Eligible Activity(ies):** Rental Housing Activities §570.201(a), 570.202

**National Objective:** Benefit to Low- and Moderate-Income Persons (LMH)

**Lead Agency and Distribution Model:** This program will be administered by the City of Houston, Housing and Community Development Department, as the lead agency. Developer(s) will be selected through a competitive Notice of Funding Availability (NOFA) process(es) and funding will be awarded to selected developer(s) according to the outcome of this process and the needs of the program. The selected developer(s) will rehabilitate multifamily rental housing developments that were directly and/or indirectly damaged by either the 2024 Derecho and/or Hurricane Beryl, including making improvements that strengthen homes and mitigate future flooding and severe weather, using materials and construction standards to increase durability and safety while also addressing the unmet affordable housing needs.

**Program Description:**

The DR24 Multifamily Housing Program may address both direct and indirect impacts of these disasters on Houston's affordable rental housing stock. The shortage of affordable rental homes available to meet the needs of renters in Houston was exacerbated by these disasters. Development of new multifamily rental homes; renovation and preservation of existing affordable rental housing; acquisition and/or rehabilitation of storm-damaged multifamily rental housing; and strategic land acquisition for multifamily development aimed at meeting the needs of Houston renters. This program may also provide housing designed to meet the needs of special populations.

Program costs may include acquisition, construction, renovation, rehabilitation, and related expenses, and activity delivery.

**Eligible Geographic Areas:** The City of Houston (HUD Identified MID area).

**Other Eligibility Criteria:**

Eligible Applicants: Acting individually or as participants in an LP or LLC:

- For-profit developers/borrowers
- Public housing authorities and housing finance agencies– HCHA, HHA, and
- Not-for-profit developers/borrowers
- Units of general local government

Eligible Property Types: Multifamily rental housing of eight (8) or more rental units under common ownership.

Selection Criteria/Award Methodology: Projects will be selected through an application or NOFA process. The application or NOFA will clearly establish the process and acceptance period, threshold criteria (including applicable building codes), selection criteria, and the award process. Selected projects must be completed within 24 months from the date of closing the city loan, unless otherwise extended by the City.



The selection criteria include:

Evaluation Criteria	Max Points
Organization Experience	25 points
Site Location	25 points
Project Information	25 points
Financial Analysis	25 points
<b>Total</b>	<b>100 points</b>

**Eligibility Criteria:**

- Project must meet CDBG-DR eligibility requirements
- Development must be located within the Houston city limits
- At a minimum, 51 percent of the units rehabilitated or developed will be reserved under a lien period for LMI households earning 80 percent or less of the AMI at affordable rents. For rehabilitation, the lien period will be a minimum of 15 years, and for reconstruction or new construction, the lien period will be a minimum of 20 years.
- Affordability periods will be established for each project, and affordable rents will be determined according to 24 CFR § 42 (g)(2)(a), and other applicable Land Use Restriction Agreement (LURA) restrictions.
- Any substantial rehabilitation, as defined by 24 CFR 5.100, or new construction of a building with more than four rental units will include installation of broadband infrastructure, as required.
- Projects must ensure construction costs are reasonable and consistent with market costs at the time and place of construction.
- Property owners receiving disaster assistance that triggers the flood insurance purchase requirement have a statutory responsibility to notify any transferee of the requirement to obtain and maintain flood insurance in writing and to maintain such written notification in the documents evidencing the transfer of the property, and the transferring owner may be liable if he or she fails to do so.
- Section 582 of the National Flood Insurance Reform Act of 1994, as amended, (42 U.S.C. 5154a) prohibits flood disaster assistance in certain circumstances. In general, it provides that no Federal disaster relief assistance in a flood disaster area may be used to make a payment (including any loan assistance payment) to a person for “repair, replacement, or restoration” for damage to any personal, residential, or commercial property if that person at any time has received Federal flood disaster assistance that was conditioned on the person first having obtained flood insurance under applicable Federal law and the person has subsequently failed to obtain and maintain flood insurance as required under applicable Federal law on such property. No disaster assistance may be provided for the repair, replacement, or restoration of a property to a person who has failed to meet this requirement.

**Ineligible Activities:**

- Properties located in the floodway

**Maximum Amount of Assistance:**

Maximum Award: \$6,500,000

**Mitigation Measures:**

The City encourages the incorporation of mitigation measures and resiliency measures, such as:

- Podium style architecture
- Power outage resiliency plan – generators
- Building Codes such as Chapter 19
- Resiliency building standards – Green Building Standards

**Reducing Impediments for Assistance to Encourage Participation of Disaster Impacted Persons:**

To promote this program and available housing assistance to vulnerable populations, the City will provide outreach through advertising on social media or other media outlets, creating information materials, giving presentations, providing information at community events, and partnering with and providing information to other organizations that serve vulnerable populations.

In addition, the public will have the opportunity to provide input (public comment) when the “program guidelines” is developed and taken to City Council for approval. Please refer to the Citizen Participation Plan in the appendix section for additional information on how the City will garner public input.

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## Housing Program 2: DR24 Single Family Home Repair Program

**Program Title:** DR24 Single Family Home Repair Program

**Amount of CDBG-DR Funds Allocated to this Program:** \$50,000,000

**Eligible Activity(ies):** Homeowner Rehabilitation §570.202

**National Objective:** Benefit to Low- and Moderate-Income Persons (LMH)

**Lead Agency and Distribution Model:** This program will be directly administered by the City of Houston, Housing and Community Development Department, as the lead agency, in coordination with other City departments. Contractor(s) will be selected through a request for proposal (RFP) process, and funding will be awarded to selected contractor(s) according to the outcome of this process and the needs of the program. The selected contractor will serve Houstonians who were directly and/or indirectly damaged by either the 2024 Derecho and/or Hurricane Beryl and need assistance in repairing their home, including making improvements that strengthen homes and mitigate against future flooding and severe weather.

Evaluation Criteria are:

Evaluation Criteria	Max Points
Qualifications	25 points
Experience	30 points
Rehabilitation Services (Rehab only)	10 points
House Plans and Design (Reconstruction only)	10 points
Capacity to Perform	20 points
Price Proposal	15 points
<b>Total</b>	<b>100 points</b>
Third-Party Warranty	Pass/Fail

**Program Description:** The DR24 Single Family Home Repair Program will rehabilitate or reconstruct homes for low- or moderate-income homeowners impacted by the 2024 Derecho and Hurricane Beryl. Cost may include rehabilitation and related expenses and activity delivery.

**Eligible Geographic Areas:** The City of Houston (HUD Identified MID area).

**Other Eligibility Criteria:**

Eligible Applicants:

- HCD will provide funding to homeowners affected by the 2024 Houston Derecho or Hurricane Beryl
- Applicants, Co-Applicants, and all Household Members over the age of 18 must provide proof of identity for the household to be eligible for assistance
- Provide proof of Legal Status
- If any Household Members 18 years of age or older who are mandated by a court of law to provide child support payments must:
  - Be current on child support payments; or
  - Be on a court-approved child support payment plan in good standing.
- Applicant and any Co-Applicant(s) cannot have any liens against their home other than a mortgage at the time of award.

- If an Applicant receiving assistance in the form of repairs becomes deceased after the repairs have begun or during the Compliance Period, and there is a Co-Applicant, then the Co-Applicant will continue the original terms of the Project Documents. If there is no Co-Applicant, then the surviving heirs can opt for one of the following options:
  - Loan Payoff: Surviving heirs can pay off the remaining loan amount according to the terms established in the Deed of Trust and Promissory Note, and the City will initiate a Release of Lien.
  - Loan Modification: HCDD will allow surviving heirs to assume the original terms of the loan and reside in the home as their Primary Residence for the remainder of the Compliance Period.

#### Property Eligibility:

To be considered eligible for Rehabilitation or Reconstruction, the Property must meet the following requirements:

- Not located in a floodway;
- Property must be located within the incorporated areas of the City of Houston;
- The Property sustained damage from the 2024 Derecho or Hurricane Beryl;
- A Property that is substantially damaged/substantially improved in the 100- or 500-year flood plain must be elevated in accordance with City of Houston Ordinance Chapter 19, with the cost of repairs not exceeding the maximum program cap;
- Applicant must be current on mortgage payments or be on a payment plan in good standing;
- Property taxes must be current or on an approved payment plan that is in good standing or have an exemption under current laws;
- No liens, other than a first lien mortgage, may be recorded against a Property at the time the award is distributed;
- The Property must be the Applicant's Primary Residence;
- Must be owner-occupied with no tenants/occupants renting their home; and
- Must be a traditional detached, stick-built, single-family dwelling.
- Applicant and any Co-Applicant, if applicable, must be current on all utility bills or on a payment plan that is in good standing

#### Duplication of Benefits

- Each Applicant must attest to any assistance already received towards eligible repairs
- SBA disaster loans will be counted as a Duplication of Benefits, provided the assistance was used toward a loss suffered as a result of the 2024 Derecho or Hurricane Beryl

#### Unmet Need

- Only Applicants with an unmet need related to the 2024 Derecho or Hurricane Beryl disasters may be eligible for assistance

#### Maximum Amount of Assistance Per Beneficiary:

Rehabilitation: \$100,000 per household

Reconstruction: \$300,000 per household

Exceptions: This program will provide exceptions to the maximum award amounts as needed, to comply with federal accessibility standards or to reasonably accommodate a person with disabilities. Please see the "General Information" section for additional information on the city's process making exceptions.

**Maximum Income of Beneficiary:** Household income cannot exceed 80% of the Area Median Income (AMI).

### **Mitigation Measures:**

While this program will not utilize Mitigation Set-Aside funding, projects will be executed to optimize resilience, and the following mitigation measures have been incorporated into the program design:

The City strives to incorporate mitigation measures and resiliency measures, such as:

- Providing more durable, wind-resistant, and resilient building products in our Minimum Construction Standards for Rehabilitation and Reconstruction
- Meeting Energy Star Certification and being alternative-power ready
- Fortifying roofing standards, hurricane tie-down straps throughout the housing structure, designing with raised elevation of reconstructed homes in the flood plains, and using updated building code standards

To manage the floodplain and properties located in the floodplain, the following measures will be taken:

- Reconstructed or substantially rehabilitated residential buildings within the 100-year Floodplain will be elevated to the HSFHA standard of 500-year Floodplain elevation plus two feet, or at least three feet above the highest adjacent grade where the depth is not specified
- Reconstructed or substantially rehabilitated residential buildings within the 500-year Floodplain may be elevated to the HSFHA standard of 500-year Floodplain elevation plus two feet, or at least three feet above the highest adjacent grade, where the depth is not specified
- for all home repair activities, the most restrictive Floodplain mitigation standard will be applied, whether federal (i.e., HUD), state (i.e., General Land Office or TDHCA), or local (i.e., City of Houston Code of Ordinances, Chapter 19)

### **Reducing Impediments for Assistance to Encourage Participation of Disaster Impacted Persons:**

Simplified application processes to remove unnecessary burdens such as excessive documentation requirements, complex eligibility criteria, and digital access barriers.

Intake for the program will be accessible to individuals with disabilities, and communication assistance will be provided upon request.

The City offers a language access line to facilitate communications with those who have limited English proficiency.

The City will seek to streamline the application process to improve delivery as needed. Staff will receive training on program requirements and customer relations to enhance the efficiency and effectiveness of program delivery.

HCD will identify potential residents affected by the 2024 Derecho or Hurricane Beryl by

1. Hosting numerous workshops in the community that will
  - a. Identify the timeframe of each disaster and
  - b. Discuss the types of repairs needed.
2. Set up meetings with other City departments to inform employees
3. Partner with other organizations to reach all platforms

During the community events, we will have staff available to serve as intake counselors to

1. Explain what type of documentation is needed
2. Assist residents in completing those documents
3. Collect the documents onsite



HCD will also hand-deliver applications to elderly and disabled residents as well as pick up the completed application package upon request, to ensure everyone has the opportunity to benefit from the program.

In addition, the public will have the opportunity to provide input (public comment) when the “program guidelines” is developed and taken to City Council for approval. Please refer to the Citizen Participation Plan in the appendix section for additional information on how the City will garner public input.

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## Infrastructure

### Infrastructure Programs Overview

Both the 2024 Derecho and Hurricane Beryl exposed vulnerabilities in Houston's infrastructure, especially power outages and flooding, prompting calls for improvements and increased resilience. Unlike previous disasters, the 2024 events occurred within two months of one another. In both events, power outages led to infrastructure system failures, such as with the City's drinking water/wastewater systems. It also reduced the availability of cooling centers and access to City services. A loss of power can leave residents stranded or in unsafe conditions in their homes, but it can also impact emergency responders' and the City's ability to provide critical public safety services and other general services that are necessary before, during, and after a disaster. During both 2024 events, the critical infrastructure across the city experienced challenges in power generator reliability.

The City will operate a Power Generation Resilience Program to ensure the continuity of critical public safety functions/services, increase resilience, reduce risk, and lessen the impact of future disasters when widespread power outages occur.

*Table 27: Grantee Infrastructure Program Overview*

Infrastructure Programs	CDBG-DR Allocation Amount	Estimated % of CDBG-DR Allocation for LMI Benefit	Estimated % of CDBG-DR Allocation for Urgent Need
Power Generation Resilience Program	\$101,291,150.00	40.00%	60.00%
<b>Total</b>	<b>\$101,291,150.00</b>	<b>40.00%</b>	<b>60.00%</b>

Table 27 Source: City of Houston HCD

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### *Infrastructure Program 1: Power Generation Resilience Program*

**Program Title:** Power Generation Resilience Program

**Amount of CDBG-DR Funds Allocated to this Program:** \$101,291,150.00

**Eligible Activity(ies):** Public Facilities and Improvements §570.201(c)

**National Objective:** Benefit to Low- and Moderate-Income Persons (LMA)

**Lead Agency and Distribution Model:** This program will be directly administered by the City of Houston, Housing and Community Development Department, as the lead agency, in coordination with other City departments. Contractor(s) will be selected through a request for proposal (RFP) process(es) and funding will be awarded to selected contractor(s) according to the outcome of this process and the needs of the program.

The Selection Criteria includes:

Evaluation Criteria	Max Points
Responsiveness	Pass/Fail
Responsible	Pass/Fail
Financial Stability	Pass/Fail
Technical Competence	80 points
Cost Proposal	20 points
<b>Total</b>	<b>100 points</b>

**Program Description:** This program will fund improvements to a variety of public facilities by adding resilience measures that mitigate the impacts of protracted power outages during extreme weather events, including presidentially declared disasters, and enable effective disaster response and recovery efforts. Such measures may include the installation of permanently affixed full-site standby/emergency power generation and distribution options at these facilities to allow them to continue to deliver critical public safety services and/or to be a resource to the surrounding community in the event of future disasters.

This program will strengthen and improve public facilities to:

- Protect critical infrastructure such as drinking water and wastewater operations
- Ensure capacity to deliver critical public safety services such as those provided by fire or police stations
- Ensure the availability of public facilities such as community/multiservice centers and/or libraries to serve as cooling/heating centers, shelters, and/or distribution points during or immediately following a disaster
- Other City-owned public facilities

Costs under this program may include engineering/design services; purchase and installation of natural gas generators; related modifications to facility infrastructure, including resilient platform construction, establishing power connection/switching mechanisms, and other site-specific modifications; ongoing operation/maintenance considerations; payment of local cost share, activity delivery; and administration.

**Eligible Geographic Areas:** The City of Houston (HUD Identified MID area).

**Other Eligibility Criteria:** Essential City-owned and operated public facilities without permanent emergency back-up power generation will be prioritized.

**Maximum Award Amount:** \$20,000,000

**Mitigation Measures:** N/A

**Reducing Impediments for Assistance to Encourage Participation of Disaster Impacted Persons:**

The public will have the opportunity to provide input (public comment) when the “program guidelines” is developed and taken to City Council for approval. Please refer to the Citizen Participation Plan in the appendix section for additional information on how the City will garner public input.

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## Economic Revitalization

No Economic Revitalization programs are budgeted from CDBG-DR24 funds.

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## Public Services

The City will operate 2 Public Services programs. The homeless services program will address the unmet needs related to homelessness, addressing indirect impacts from disasters, increasing resilience, reducing risk, and lessening the impact of future disasters. Both the 2024 Derecho and Hurricane Beryl, severely affected survivors who were experiencing homelessness or are at risk of experiencing homelessness because of impacts to housing, shelters, and homeless services.

The Emergency Response/Public Safety Program will address needs related to emergency response, indirect impacts from the disasters, increasing resilience, reducing risk, and lessening the impact of future disasters. During Hurricane Beryl, the city and county set up a triage facility for those leaving hospitals that didn't yet have power in their homes. Having ambulances at the ready, especially in times of disaster, is critical to supporting our residents. During a disaster, public safety needs to respond to an emergency in any situation. Many disasters in Houston, including Beryl, have brought about flash or continuous flooding that impacts the public safety's ability to respond to emergencies. Additional high-water vehicles or other lifted 4-wheel drive options are needed to help traverse challenging conditions during a disaster. The lack of power during and after a disaster can have negative effects on the communications infrastructure used to support both the 2024 Derecho and Beryl, the City of Houston's emergency communications network experienced issues related to connectivity and service.

### Public Services Programs Overview

Table 28: Grantee Public Services Programs Overview

Public Services Programs*	CDBG-DR Allocation Amount	Estimated % of CDBG-DR Allocation for LMI Benefit	Estimated % of CDBG-DR Allocation for Urgent Need
Emergency Response/Public Safety Program	\$6,156,150.00	50.00%	50.00%
Homeless Services Program	\$41,040,600.00	100.00%	0.00%
<b>Total</b>	<b>\$47,195,750.00</b>	<b>86.40%</b>	<b>13.60%</b>

Table 28 Sources: City of Houston HCD

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*Public Services Program 1: Emergency Response/Public Safety Program*

**Program Title:** Emergency Response/Public Safety Program

**Amount of CDBG-DR Funds Allocated to this Program:** \$6,156,150

**Eligible Activity(ies):** Public Services §570.201(e)

**National Objective:** Benefit to Low- and Moderate-Income Persons (LMA)

**Lead Agency and Distribution Model:** This program will be administered by the City of Houston, Housing and Community Development Department, as the lead agency, in coordination with other City departments. Vendor(s) will be selected for this program through a competitive solicitation process, and funding will be awarded to selected vendor(s) according to the outcome of this process and the needs of the program, if required.

While there are no specific grading criteria as the award will go to the lowest bidder, an award will be made only to a Bidder that is responsive and responsible, as defined below:

**Responsive:** A Vendor that responds to all material requirements of any solicitation will be deemed responsive.

**Responsible:** A business entity or individual who has the integrity and reliability as well as the financial and technical capacity to meet the requirements of the solicitation and subsequent award will be deemed responsible. Additionally, the following minimum requirements are included:

- The supplier will warrant all installations of new equipment purchased for at least the terms of warranty on the equipment itself.
- Equipment repairs will be inspected at the time the equipment is delivered for workmanship, appearance, proper functioning of all equipment and systems, and conformance to all other requirements of this specification.
- Each vehicle must go through a documented final quality assurance/ safety inspection, and all discrepancies will be corrected/repared prior to delivery to the City
- The supplier will maintain appropriate staff with proper training
- The supplier will be capable of installing and/or removing equipment from major vehicle brands
- The supplier will provide installation, removal, and repair services at the rate awarded for any emergency, warning, safety, and equipment, new or used, without regard as to where and from whom the equipment was originally purchased.

**Program Description:** This public service program will support the purchase of equipment (such as emergency communications systems, mobile cell sites, public safety, and other related specialized equipment) and vehicles (such as ambulances and high-water or other lifted vehicles, etc.) necessary for effective emergency response and the maintenance of public safety during and following disasters, housed in the fire stations. Crucial to this strategy is ensuring the availability of portable communications solutions to maintain connectivity, coordination, and continuity of services in disaster response efforts.

Costs under this program will include the purchase of emergency response equipment and public safety vehicles, portable communication equipment and related services, and activity delivery.

**Eligible Geographic Areas:** The City of Houston (HUD Identified MID area).

**Other Eligibility Criteria:** Equipment purchased will only support City-owned and operated public facilities performing emergency response and public safety public service activities.

**Maximum Award Amount:** \$5,000,000

**Maximum Income of Beneficiary:** N/A

**Mitigation Measures:** N/A



### **Reducing Impediments for Assistance to Encourage Participation of Disaster Impacted Persons:**

The public will have the opportunity to provide input (public comment) when the “program guideline” is developed and taken to City Council for approval. Please refer to the Citizen Participation Plan in the appendix section for additional information on how the City will garner public input.

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## Public Services Program 2: Homeless Services Program

**Program Title:** Homeless Services Program

**Amount of CDBG-DR Funds Allocated to this Program:** \$41,040,600

**Eligible Activity(ies):** Public Services §570.201(e)

**National Objective:** Benefit to Low- and Moderate-Income Persons (LMC)

**Lead Agency and Distribution Model:** This program will be administered by the City of Houston, Housing and Community Development Department, as the lead agency, in coordination with other City departments. Funding will be awarded to selected sub-recipient(s) through a solicitation process, or a sub-recipient may be designated directly, as allowable. Selections will be made according to the solicitation process outcome or the needs of the program.

**Program Description:** The services provided will be those needed to prevent or address homelessness. This may include financial support to nonprofits that provide essential services such as shelter operations, case management, and other services to meet the needs of homeless individuals in obtaining stable housing. Costs may include public services, including but not limited to those described above, and activity delivery.

**Eligible Geographic Areas:** The City of Houston (HUD-identified MID area).

### Other Eligibility Criteria:

Awards to sub-recipients will be made through a solicitation process using the following criteria:

Evaluation Criteria	Max Points
Organizational Management	15 points
Targeted Services	20 points
Cost Reasonableness	10 points
Budget Effectiveness	10 points
Data Driven Evaluation	10 points
Experience and Past Performance	15 points
Leveraging Contribution	10 points
Agency Collaboration	10 points
<b>Total</b>	<b>100 points</b>

**Maximum Award Amount:** \$30,000,000

**Maximum Income of Beneficiary:** N/A

**Mitigation Measures:** N/A

### Reducing Impediments for Assistance to Encourage Participation of Disaster Impacted Persons:

The Way Home, which is the City's homeless response system, addresses impediments to housing assistance by offering homeless individuals assistance with obtaining essential documents like birth certificates and acceptable forms of identification. The system offers transportation assistance in the form of bus cards for Metro and access to Healthcare for the Homeless' Project Access bus route that stops at housing and assistance providers on a daily route. Case managers and/or housing navigators assist clients in locating acceptable housing units and negotiating with landlords to place clients into a housing unit. Case managers also help individuals address other needs that may be an impediment to stable housing. These can include referrals and assistance accessing mental health services, medical services, food assistance, job/skills training, supplemental income, move-in kits, and financial empowerment training.

In addition, the public will have the opportunity to provide input (public comment) when the “program guideline” is developed and taken to City Council for approval. Please refer to the Citizen Participation Plan in the appendix section for additional information on how the City will garner public input.

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## CDBG-DR Mitigation Set-Aside

For purposes of grants subject to the Universal Notice, mitigation activities are defined as those activities that increase resilience to disasters and reduce or eliminate the long-term risk of loss of life, injury, damage to and loss of property, and suffering and hardship, by lessening the impact of future disasters.

During the two Presidentially Declared Disasters, over 4.5 million cubic yards of storm debris were collected. Debris depository sites are set up throughout the City to collect and sort the debris for appropriate disposal methods. Often those sites are selected on a temporary and needs basis, limiting opportunities to select the most appropriate site for a debris depository.

In addition, preventative and mitigative vegetation/tree-cutting and debris removal operations are needed for reduced levels of storm-generated debris that can lead to hazards, damage, and flooding along main streets and thoroughfares.

The Public Facilities and Interim Assistance programs identified in this section meet the definition of mitigation activities shown above by helping to prepare Houston communities for future disasters through mitigative vegetation management/tree cutting to prevent damage caused during disasters and creating permanent locations for use as debris repositories, as they will hasten the recovery process. These programs will increase resilience to future disasters.

## CDBG-DR Mitigation Set-Aside Programs Overview

Table 29: Grantee CDBG-DR Mitigation Set-Aside Programs Overview

Mitigation Programs	CDBG-DR Allocation Amount	Estimated % of CDBG-DR Allocation for LMI Benefit	Estimated % of CDBG-DR Allocation for Urgent Need
Debris Repository Acquisition / Development Project	\$32,791,000.00	50.00%	50.00%
Vegetation Management / Debris Removal Program*	\$8,250,000.00	50.00%	50.00%
<b>Total</b>	<b>\$41,041,000.00</b>	<b>50.00%</b>	<b>50.00%</b>

Table 29 Source: City of Houston HCD

Mitigation Set-Aside = \$41,041,000.00

Mitigation Set-Aside Program 1: Debris Repository Acquisition/Development Project

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### *Mitigation Set-Aside Program 1: Debris Repository Acquisition/Development Program*

**Program Title:** Debris Repository Acquisition/Development Project

**Amount of CDBG-DR Funds Allocated to this Project:** \$32,791,000

**Eligible Activity(ies):** Public Facilities and Improvements §570.201(c)

**National Objective:** Benefit to Low- and Moderate-Income Persons (LMA)

**Lead Agency and Distribution Model:** This project will be administered by the City of Houston, Housing and Community Development Department, as the lead agency, in coordination with other City departments. If needed, land selection and contractors or vendors may be selected pursuant to 2 CFR 200 procurement requirements.

Land selection includes the following factors toward the optimum location(s).

- Temporary holding sites for vegetative debris might follow the path of storm destruction.
- Temporary holding sites for building material debris might follow the path of flood destruction.
- Temporary holding sites for both vegetative debris and building material debris might follow the path of storm destruction and flood destruction.
  - Best case, temporary holding sites would be in various locations, to serve all quadrants of the city because “close proximity” to the destructive event would reduce cost by reducing round trip time for collection, drop-off, reduce wear and tear on trucks, etc.

There will also be a TCEQ inspection process that will occur ahead of land selection.

**Program Description:** This project will develop up to two large-scale regional debris repositories that would facilitate self-help and department-assisted debris collection and disposal operations post-disaster collected from disaster-impacted homes, businesses and city-owned spaces. Before and during the aftermath of a disaster, it is critical for the City to isolate hazardous materials from the environment and human contact safely. As a result, the regional debris repositories will protect public health and the local ecosystem, especially in LMI neighborhoods, which may sometimes face disproportionate risks from hazardous materials after a disaster due to historical factors like under-resourced infrastructure and being located in high-risk areas. These repositories will also serve the City’s proposed *Vegetation Management/Debris Removal Program*.

Costs for the Public Facilities and Improvements project would include land acquisition and related costs, site preparation, related construction or modifications, security measures, and activity delivery.

**Eligible Geographic Areas:** The City of Houston (HUD Identified MID area).

**Other Eligibility Criteria:**

- Location
- Cost reasonableness analysis/price

**Maximum Acquisition Amount:** \$28,000,000

Actual acquisition and related costs are dependent on the timing of purchase and market conditions and will include a cost-reasonable analysis, as required.

**Mitigation Measures:** This project will count towards the City’s CDBG-DR Mitigation Set-Aside. This project meets the definition of mitigation, addressing indirect impacts from the disasters by increasing resilience, reducing risk, and lessening the impact of future disasters.

**Reducing Impediments for Assistance to Encourage Participation of Disaster Impacted Persons:**



The public will have the opportunity to provide input (public comment) when the “program guideline” is developed and taken to City Council for approval. Please refer to the Citizen Participation Plan in the appendix section for additional information on how the City will garner public input.

*Mitigation Set-Aside Program 2: Vegetation Management/Debris Removal Program*

**Program Title:** Vegetation Management/Debris Removal Program

**Amount of CDBG-DR Funds Allocated to this Program:** \$8,250,000

**Eligible Activity(ies):** Interim Assistance §570.201(f)

**National Objective:** Benefit to Low- and Moderate-Income Persons (LMA)

**Lead Agency and Distribution Model:** This interim assistance program will be administered by the City of Houston, Housing and Community Development Department, as the lead agency, in coordination with other City departments. Subrecipient/vendor(s), if required, will be selected for this program through a competitive solicitation process, and funding will be awarded to selected subrecipient/vendor(s) according to the outcome of this process and the needs of the program.

Evaluation Criteria	Max Points
Responsiveness	Pass/Fail
Responsible	Pass/Fail
Financial Stability	Pass/Fail
Technical Competence	80 points
Cost Proposal	20 points
<b>Total</b>	<b>100 points</b>

**Program Description:** This program will include vegetation management throughout the MID area, incorporating preventative/mitigative vegetation management; tree trimming practices; and special garbage, trash, and debris removal in low- to moderate-income areas of the City and protect homeowners and city owned spaces from future disasters. The program will be designed to alleviate neighborhood deterioration, ensure clear stormwater pathways, and prevent damage and post-disaster debris. The planned *Debris Repository Acquisition/Development Project* will assist in the management and disposal of vegetation and debris collected.

Costs for this vegetation management/debris collection program may include the purchase and maintenance of equipment necessary for vegetation management and debris collection, as well as the delivery of these activities.

**Eligible Geographic Areas:** The City of Houston (HUD-identified MID area).

**Other Eligibility Criteria:** N/A

**Maximum Award Amount:** \$3,000,000 - if subrecipient/vendor(s) are utilized.

**Mitigation Measures:** This program will count towards the City’s CDBG-DR Mitigation Set-Aside.

**Reducing Impediments for Assistance to Encourage Participation of Disaster Impacted Persons:**

The public will have the opportunity to provide input (public comment) when the “program guideline” is developed and taken to City Council for approval. Please refer to the Citizen Participation Plan in the appendix section for additional information on how the City will garner public input.

# General Information and Grants Administration

## Lead Agency and Responsible Entity

The City of Houston Housing and Community Development (HCD) is the lead agency responsible for administering the CDBG-DR24 funds. HCD will also be the Responsible Entity for Environmental Reviews. Additionally, a copy of the signed Certifications Waiver and Alternative Requirement for Action Plan Submission (Waivers) can be found in Appendix 2 of this document.

## Environmental Review (ERRs)

For all activities/programs, the City of Houston, Housing and Community Development Department is the responsible entity assuming the authority for the decision-making and completion of the environmental review per 24 CFR 58.4. Prior to initiating rehabilitation, reconstruction, or new construction projects, each property will undergo a review to assess potential environmental impacts and to ensure compliance with federal and state laws, including, but not limited to 24 CFR Parts 50, 58, and 570.

## Exceptions to Award Caps

HCD may make exceptions to award caps when necessary to comply with federal accessibility standards or accommodate persons with disabilities. In such cases, requests for increases to award caps will be subject to an evaluation based on (a) documented need and (b) cost reasonableness.

The Single-Family Program may make exceptions to award caps when necessary. This program will utilize composite pricing as the standard approach. Exceptions to composite pricing may be allowed with the Director's approval, provided the additional costs are reasonable and do not exceed \$50,000. Such exceptions may include, but are not limited to, unforeseen municipal requirements, deed restrictions, or reasonable accommodations for persons with disabilities. Any additional costs exceeding \$50,000 must be presented to City Council for approval.

## Ensuring Accessibility for Persons with Disabilities

The City is committed to ensuring that displaced persons with disabilities receive equal access to relocation assistance and that new housing, infrastructure, and public facilities meet or exceed accessibility requirements. This may include:

- Providing reasonable accommodation and modifications for displaced individuals with disabilities to ensure access to new housing and essential services.
- Ensuring that all relocation assistance materials, notifications, and counseling services are available in accessible formats, including large print, braille, and digital text compatible with screen readers, as appropriate.

## Ensuring Access to Disaster Recovery Resources & Reducing Impediments

The City is committed to ensuring access to disaster recovery resources and reducing impediments that individuals face or may face in accessing assistance. To achieve this, the City will:

- Provide targeted outreach and assistance to LMI populations.

- Simplify application processes to remove unnecessary burdens such as excessive documentation requirements, complex eligibility criteria, and digital access barriers, where practical.

## Displacement of Persons or Entities

To minimize the displacement of persons and other entities that may be affected by the activities outlined in this action plan, the City of Houston will coordinate with all agencies and entities necessary to ensure that all programs are administered in accordance with the amended RARAP, Uniform Relocation Assistance and Real Property Acquisition Policies Act (URA) of 1970, as amended (49 CFR Part 24,) and Section 104(d) of the Housing and Community Development Act of 1974, as amended, and the implementing regulations at 24 CFR Part 570.496(a) to minimize displacement. Should any proposed projects or activities cause the displacement of people, the following policy has been adopted to ensure the requirements of the Uniform Relocation Assistance and Real Property Acquisition Act of 1970 (URA), as amended, are met.

The City of Houston does not plan to administer activities that will cause a direct or indirect displacement of persons or entities. Should any proposed projects or activities cause the displacement of persons or entities, the City of Houston plans to amend the current Residential Anti-displacement and Relocation Assistance Plan (RARAP) to reduce any hardship of a displaced person or entity and increase oversight to ensure the requirements of Uniform Relocation Assistance and Real Property Acquisition Act of 1970 (URA), as amended, are met. The amended RARAP will set the minimum standard for, but not limited to, planning efforts, Relocation Plan, relocation schedule, accommodations for displaced persons with disabilities, relocation budget, and project the number of staff needed to carry out URA requirements. If relocation is applicable, a program or project must demonstrate it has met the latest RARAP requirements before and activity can be approved and implemented. Relocation activities will be planned for and budgeted within the applicable CDBG-DR program. CDBG-DR funds may not be used to support any federal, state, or local projects that seek to use the power of an eminent domain unless eminent domain is employed only for public use (e.g., mass transit, railroad, airport, seaport, highway, and utility projects). None of the currently planned projects under this Action Plan anticipate the use of eminent domain.

## Citizen Participation

The City ensured that disaster-impacted residents had opportunities to engage and participate through various methods throughout the drafting of this plan. The participation of citizens, stakeholders, and communities was essential to inform the priorities and needs of residents affected by the disasters. The City, as outlined in the Citizen Participation Plan (Appendix), conducted public hearings, deployed surveys to residents and stakeholder agencies, and consulted with various partners to complete this plan in compliance with HUD's Revised Universal Notice requirements.

## Consultation on Developing the Action Plan

During the development of the Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl, the City consulted with relevant government and local agencies and other stakeholders listed in the table below to ensure consistency with applicable regional development plans and identify opportunities for leveraging funding.

Table 30: Partner Consultation

Partners Consulted	Describe Consultation
Federal Partners (FEMA, SBA)	FEMA and SBA were consulted and provided data to support impact and needs analysis in the Plan. FEMA was also consulted regarding recovery resources, including FEMA Public Assistance (PA), to ensure alignment and leveraging of FEMA PA funding with CDBG-DR funding. FEMA and SBA contacts were invited to complete the Agency disaster recovery survey.

Partners Consulted	Describe Consultation
Local/State Government	The state government was consulted regarding coverage of local cost share for FEMA PA Category A, to ensure appropriate leveraging of available recovery resources. The City also engages in regular consultation with state and county partners.
Indian Tribes	Not Applicable
Nongovernmental organizations	The City engages with a variety of NGOs, who were invited to participate in both the Resident/Agency disaster recovery surveys as well as a variety of public engagement opportunities, including the three virtual public hearings for this Plan.
Private sector	The City has engaged with private sector partners to inform recovery and resilience discussions/planning efforts. Many private sector parties are included on our mailing list and were invited to complete the Resident/Agency disaster recovery survey.
State and local emergency management agencies that have primary responsibility for the administration of FEMA funds	The City, through the Urban Area Security Initiative (UASI) Urban Area Working Group (UAWG), the Regional Collaboration Committee, Health and Medical Committee, and Community Preparedness Committee engages with partners across the Houston-Galveston region, to analyze threats and hazards, identify gaps in capability, and invest time and resources in solutions to ensure our communities are ready for our worst days. Also, the Harris County Long-Term Recovery Committee (HCLTRC) engages over 120 organizations and departments (Harris County Recovers) to share information and resources and to collaborate on long-term resilience and recovery solutions. The HCLTRC meets for steady-state objectives quarterly, and after emergencies, the group meets more frequently to problem-solve and collaborate on recovery-specific challenges.
Agencies that manage the local Continuum of Care	City meets regularly with the lead agency, the Coalition for the Homeless of Houston/Harris County (CFTH), for the local CoC (The Way Home) to discuss a variety of issues surrounding homelessness, including the needs of the homeless during times of emergency/disaster. CFTH was also invited to participate in the Agency disaster recovery survey.
Public Housing Agencies	HHA – monthly meetings to discuss ongoing public housing, housing voucher programs, and collaborate to implement the Choice Neighborhoods Initiative, Project-Based Vouchers and participate in the Agency disaster recovery survey to determine the impacts of the 2 disasters.
HUD-approved housing counseling agencies	The City partners with many Housing Counseling Agencies through its homebuyer assistance programs. These agencies were invited to participate in the Agency disaster recovery survey.
State Housing Finance Agencies	TDHCA – the City holds ongoing conversations with TDHCA to discuss various affordable housing issues and challenges around tax credits and state housing guidelines, as well as issues surrounding disaster and long-term recovery.
Other Stakeholders	The City is in collaboration with the Texas Housing Group (THG), made up of the 6 largest Texas cities, and participates in monthly meetings to discuss various housing issues/needs in the state of Texas.

Table 30 Source: City of Houston HCD

## Public Comments

The Draft Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl were posted on the City’s disaster recovery website on May 23, 2025. Public notices were published in the Houston Chronicle on May 23, 2025, June 13, 2025, and July 1, 2025, that included the draft Plan budget and how to access and comment on the draft Plan, as well as the dates and times of the virtual public hearings. Additionally, a public notice was published in La Voz on June 4, 2025. The 30-day public comment period began on May 23, 2025, and ended on June 22, 2025. A summary of written

public comments and comments received during the public hearings, as well as responses, is included in the Appendix.

## Public Hearings

The City conducted three virtual public hearings in accordance with requirements in HUD's Revised Universal Notice (I.C.2.b).

These meetings included:

- Presentation on Action Plan for Disaster Recovery
- Formal public comment
- Question and answer session

The table below provides details regarding the public hearings held.

Table 31: CDBG-DR24 Public Hearing Information

Public Hearing Date	Public Hearing Times	Public Hearing Format	Number of Attendees
Tuesday, June 10, 2025	11:00 AM – 1:00 PM	Virtual Public Hearing	222
Thursday, June 12, 2025	3:00 PM – 5:00 PM	Virtual Public Hearing	103
Tuesday, June 17, 2025	5:30 PM – 7:30 PM	Virtual Public Hearing	47

Table 31 Source: City of Houston HCD

## Access to Public Hearings

Public hearings were advertised through a variety of mediums – social media, email, newspaper (public notice), and the City's disaster recovery website. Information included how people with disabilities could request accommodation. To ensure effective communication during the public hearings, Communication Access Real-Time Translation (CART) services were provided, and meetings were held in both English and Spanish. During the public hearings, participants were able to provide oral comments. In addition, a separate question and answer session was conducted, where participants were able to ask questions and grantee representatives responded to the participants and all attendees.

## Consideration of Public Comments

The public comment period for the Draft Action Plan for Disaster Recovery - 2024 Derecho and Hurricane Beryl was from May 23, 2025, through June 22, 2025. A summary of written public comments received during the public comment period and comments received during the 3 virtual public hearings, and responses is included in the Appendix.

It should be noted that, based on feedback received during the public engagement process, the City has revised the Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl to include \$100 million for housing programs. The revised budget, which incorporated \$50 million each for Single Family and Multifamily housing programs, was approved by the Houston City Council on July 13, 2025. Following City Council approval, the updated budget was posted on the City's disaster recovery website.

## Citizen Complaints

### Complaints

The Housing and Community Development Department (HCDD) administers the complaints process associated with HUD disaster recovery allocations on behalf of the City of Houston. To promote transparency and partnership with communities where the HCDD operates, the HCDD responds to all complaints in a timely and equitable manner consistent with HUD requirements. A complaint is communication from a member of the public to a City official or

employee that includes concern or grievance regarding the operations of the City or any party acting on behalf of the City.

### **Complaints**

#### **Fraud, Waste, and Abuse**

The City maintains a dedicated website (<https://houstontx.gov/hcdrecovery/fraud.html>) that provides information about identifying and reporting fraud, waste, and abuse. Complaints regarding fraud, waste, or abuse can be reported through the following methods to ensure accessibility and convenience.

#### **HUD OIG Fraud Hotline**

1-800-347-3735

[hotline@hudoig.gov](mailto:hotline@hudoig.gov)

#### **City of Houston**

##### **Office of the Inspector General Fraud Hotline**

832-393-3542

[Secure Online Portal](#)

#### **City of Houston**

##### **Housing and Community Development Department**

832-394-6200 ext. 1

[housingfraud@houstontx.gov](mailto:housingfraud@houstontx.gov)

### **Other Complaints**

Other complaints can be filed at any time, verbally or in writing. Complaints may be filed in person, by mail, by email, or through HCDD's dedicated hotline for complaints:

#### **City of Houston**

##### **Housing & Community Development Department.**

ATTN: Complaints

2100 Travis Street, 9<sup>th</sup> Floor

Houston, TX 77002

Hotline: 832-394-6200 ext. 1

Email: [hcdcomplaintsappeal@houstontx.gov](mailto:hcdcomplaintsappeal@houstontx.gov)

Business Hours: Monday – Friday, 8:00 AM – 5:00 PM

All complaints related to this Action Plan (or its amendments), any Quarterly Progress Report (QPR), or the City's activities or programs funded with CDBG-DR24, will receive careful consideration and will be responded to in writing within 15 business days, as practicable. Complaints alleging a violation of fair housing laws will be directed to HUD for immediate review. For more information, please refer to the City of Houston, Housing and Community Development Department website at [www.houstontx.gov/housing/complaints.html](http://www.houstontx.gov/housing/complaints.html) or [www.houstontx.gov/hcdrecovery/complaints/](http://www.houstontx.gov/hcdrecovery/complaints/).

## **Modifications to the Action Plan**

### **Substantial Amendment**

A substantial amendment will be required when any of the following occurs:

- A change in program benefit or eligibility criteria
- An activity is being added or deleted
- The overall benefit requirement is being reduced





- A reallocation with an increase or decrease greater than 25 percent
- A required update to the original Action Plan, where the initial submission was incomplete

Substantial amendments are subject to a citizen participation process and require formal action by the City Council and submission to HUD. The City announces substantial amendments to the public through a public notice published in one or more newspapers of general circulation for 30 days, to provide an opportunity for public review and comment regarding proposed substantial amendments. Notices will be available in English and may also be available in Spanish and other languages, as feasible. The City will consider all written and/or oral comments or views concerning proposed substantial amendments that are received during the comment period in accordance with 24 CFR 91.105(c)(3). A summary of these comments and views, including comments or views not accepted, and the reason why, shall be submitted with each substantial amendment. When the City of Houston pursues the substantial amendment process, the amendment will be posted here at <https://houston.tx.gov/hcdrecovery/dr24/> for a 30-day public comment period.

In conjunction with a substantial amendment, the City will evaluate the need to update the impact and unmet needs assessment section of the Plan, as required by HUD. This would also be required if additional disaster funding were to become available.

## Non-Substantial Amendment

A non-substantial amendment is an amendment to the plan that includes technical corrections, clarifications, and budget increases or decreases by less than twenty-five percent (25%). These require the signature of the City's HCD Director or designated representative, but do not require a public comment period or City Council approval. The City will notify HUD at least five (5) business days before the amendment becomes effective. All amendments will be numbered sequentially and posted to the website as one final, consolidated plan.

## Performance Reports

In onboarding new HUD Disaster Recovery Grant Reporting (DRGR) reporting requirements for this grant, the City will assess all budgeted programs/projects proposed for implementation in determining appropriate performance measures and/or beneficiary demographics that will be required for quarterly reporting. This information is used to inform the design of data collection templates that will be incorporated into program/project management procedures, as well as contracts/agreements with sub-awardees, and will provide the framework for a coordinated monthly data collection process. Records of sub-awardee monitoring visits, audits, and technical assistance visits performed during the performance period will also be collected and reviewed to further inform performance reporting content. Integral to the report development process is a multi-step data validation/review process in conjunction with periodic reconciliation actions, as needed, to ensure the accuracy and completeness of each Quarterly Progress Report (QPR) prior to its timely submission in DRGR.

In accordance with HUD requirements, the City will submit each QPR through the DRGR system no later than thirty (30) days following the end of each fiscal quarter commencing with the first full quarter after execution of the grant agreement. QPRs will be posted to the City's disaster recovery website ([houston.tx.gov/hcdrecovery](https://houston.tx.gov/hcdrecovery)) within three (3) calendar days following HUD approval. Quarterly performance reporting will continue throughout the lifecycle of the grant until all funds have been expended, related accomplishments have been reported and required closeout materials have been submitted. Thereafter, the City will report on any program income received following the closeout of the grant, annually in DRGR.

# Appendix

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## Appendix 1: Certification



## **CERTIFICATIONS**

**In accordance with the applicable statutes and the regulations governing the consolidated plan regulations, the jurisdiction certifies the items included in Appendix B of the Universal Notice and the certifications listed at 24 CFR 91.225(a)(1),(a)(3), and (a)(7); and 24 CFR 91.225(b)(5),(b)(6), (b)(7), and (b)(8):**

**a. Compliance with Anti-discrimination Laws** - The grantee certifies that the grant will be conducted and administered in conformity with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d), the Fair Housing Act (42 U.S.C. 3601-3619), and implementing regulations.

**b. Affirmatively Further Fair Housing** - The grantee certifies it will affirmatively further fair housing.

**c. Uniform Relocation Act and Residential Anti-displacement and Relocation Plan** - The grantee certifies that it: (1) will comply with the acquisition and relocation requirements of the Uniform Act, and implementing regulations at 49 CFR part 24, as such requirements may be modified by waivers or alternative requirements; 160 (2) has in effect and is following a RARAP in connection with any activity assisted with CDBG-DR grant funds that fulfills the requirements of Section 104(d), 24 CFR part 42, and 24 CFR part 570, as amended by waivers and alternative requirements.

**d. Anti-Lobbying** - The grantee certifies its compliance with the restrictions on lobbying required by 24 CFR part 87, together with disclosure forms, if required by part 87.

**e. Authority of Grantee** - The grantee certifies that the Action Plan for disaster recovery is authorized under state and local law (as applicable) and that the grantee, and any entity or entities designated by the grantee, and any contractor, subrecipient, or designated public agency carrying out an activity with CDBG-DR funds, possess(es) the legal authority to carry out the program for which it is seeking funding, in accordance with applicable HUD regulations as modified by waivers and alternative requirements.

**f. Consistency with the Action Plan** - The grantee certifies that activities to be undertaken with CDBG-DR funds are consistent with its action plan.

**g. Section 3** - The grantee certifies that it will comply with section 3 of the Housing and Urban Development Act of 1968 (12 U.S.C. 1701u) and implementing regulations at 24 CFR part 75.

**h. Citizen Participation** - The grantee certifies that it is following a detailed citizen participation plan that satisfies the requirements of 24 CFR 91.115 or 91.105 (except as provided for in waivers and alternative requirements). Also, each local government receiving assistance from a state grantee must follow a detailed citizen participation plan that satisfies the requirements of 24 CFR 570.486 (except as provided for in waivers and alternative requirements).

**i. Use of Funds** - The grantee certifies that it is complying with each of the following criteria:

(1) Purpose of the funding. Funds will be used solely for necessary expenses related to disaster relief, long-term recovery, restoration of infrastructure and housing, economic revitalization, and mitigation in the most impacted and distressed areas for which the President declared a major disaster pursuant to the Stafford Act (42 U.S.C. 5121 et seq.).

(2) Maximum Feasibility Priority. With respect to activities expected to be assisted with CDBG-DR funds, the Action Plan has been developed so as to give the maximum feasible priority to activities that will benefit low- and moderate-income families.

(3) Overall benefit. The aggregate use of CDBG-DR funds shall principally benefit low- and moderate-income families in a manner that ensures that at least 70 percent (or another percentage permitted by HUD in a waiver) of the grant amount is expended for activities that benefit such persons.

(4) Special Assessment. The grantee will not attempt to recover any capital costs of public improvements assisted with CDBG-DR grant funds, by assessing any amount against properties owned and occupied by persons of low- and moderate-income, including any fee charged or assessment made as a condition of obtaining access to such public improvements, unless: (a) disaster recovery grant funds are used to pay the proportion of such fee or assessment that relates to the capital costs of such public improvements that are financed from revenue sources other than under this title; or (b) for purposes of assessing any amount against properties owned and occupied by persons of moderate income, the grantee certifies to the Secretary that it lacks sufficient CDBG funds (in any form) to comply with the requirements of clause (a).

**j. Excessive Force** - The grantee certifies that it has adopted and is enforcing the following policies, and, in addition, state grantees must certify that they will require local governments that receive their grant funds to certify that they have adopted and are enforcing:

(1) A policy prohibiting the use of excessive force by law enforcement agencies within its jurisdiction against any individuals engaged in nonviolent civil rights demonstrations; and

(2) A policy of enforcing applicable state and local laws against physically barring entrance to or exit from a facility or location that is the subject of such nonviolent civil rights demonstrations within its jurisdiction.

**k. Grant Timeliness** - The grantee certifies that it (and any subrecipient or administering entity) currently has or will develop and maintain the capacity to carry out disaster recovery activities in a timely manner and that the grantee has reviewed the requirements applicable to the use of grant funds.

**l. Compliance with Lead-Based Paint Procedures** - The grantee certifies that its activities concerning lead-based paint will comply with the requirements of 24 CFR part 35, subparts A, B, J, K, and R.

**m. Environmental Requirements** - The grantee certifies that it will comply with environmental requirements at 24 CFR part 55 (as applicable) and 24 CFR part 58.

**n. Compliance with Laws** - The grantee certifies that it will comply with the provisions of title I of the HCDA and with other applicable laws.

**o. Order of Assistance** - The grantee certifies that it will comply with the statutory order of assistance listed in Appendix C paragraph 9 and will verify if FEMA or USACE funds are available for an activity, or the costs are reimbursable by FEMA or USACE before awarding CDBG-DR assistance for the costs of carrying out the same activity.

Signed by:



8/15/2025

Signature Of Authorized Official

DocuSigned by:  
*Cynthia Wilson*  
E372623F937B434...

Date

Mayor

Title



## Appendix 2: Standard Form & HUD Form 424

**Application for Federal Assistance SF-424****\* 1. Type of Submission:**

- ☐ Preapplication  
☒ Application  
☐ Changed/Corrected Application

**\* 2. Type of Application:**

- ☒ New  
☐ Continuation  
☐ Revision

\* If Revision, select appropriate letter(s):

\* Other (Specify):

\* 3. Date Received:

4. Applicant Identifier:

5a. Federal Entity Identifier:

5b. Federal Award Identifier:

**State Use Only:**

6. Date Received by State:

7. State Application Identifier:

**8. APPLICANT INFORMATION:**

\* a. Legal Name:

City of Houston

\* b. Employer/Taxpayer Identification Number (EIN/TIN):

74-6001164

\* c. UEI:

J4MAQ69KQKF5

**d. Address:**

\* Street1:

900 Bagby Street

Street2:

\* City:

Houston

County/Parish:

\* State:

TX: Texas

Province:

\* Country:

USA: UNITED STATES

\* Zip / Postal Code:

77002

**e. Organizational Unit:**

Department Name:

Housing and Community Development

Division Name:

**f. Name and contact information of person to be contacted on matters involving this application:**

Prefix:

\* First Name:

Michael

Middle Name:

C.

\* Last Name:

Nichols

Suffix:

Title:

Organizational Affiliation:

\* Telephone Number:

832-394-6134

Fax Number:

\* Email:

Michael.Nichols@houstontx.gov

Application for Federal Assistance SF-424

\* 9. Type of Applicant 1: Select Applicant Type:

C: City or Township Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

\* Other (specify):

\* 10. Name of Federal Agency:

U.S. Deptment of Housing and Urban Development

11. Catalog of Federal Domestic Assistance Number:

14.218, 14.228

CFDA Title:

Community Development Block Grant

\* 12. Funding Opportunity Number:

FR-6512-N-01

\* Title:

Allocations for Community Development Block Grant Disaster Recovery and Implementation of the CDBG-DR Consolidated Waivers and Alternative Requirements Notice (UNAAN)

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

\* 15. Descriptive Title of Applicant's Project:

Community Development Block Grant Disaster Recovery 2024 (CDBG-DR24)

Attach supporting documents as specified in agency instructions.

**Application for Federal Assistance SF-424****16. Congressional Districts Of:**

\* a. Applicant TX-2,7,8,9,18,22,29,36,38

\* b. Program/Project TX-2,7,8,9,18,22,29,36,38

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment

Delete Attachment

View Attachment

**17. Proposed Project:**

\* a. Start Date: 10/1/2025

\* b. End Date: 9/30/2031

**18. Estimated Funding (\$):**

\* a. Federal \$314,645,000.00

\* b. Applicant 0.00

\* c. State 0.00

\* d. Local 0.00

\* e. Other 0.00

\* f. Program Income 0.00

\* g. TOTAL \$314,645,000.00

**\* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.☒ c. Program is not covered by E.O. 12372.**\* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**☐ Yes ☒ No

If "Yes", provide explanation and attach

Add Attachment

Delete Attachment

View Attachment

**21. \*By signing this application, I certify (1) to the statements contained in the list of certifications\*\* and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances\*\* and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 18, Section 1001)**

☒ \*\* I AGREE

\*\* The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

**Authorized Representative:**Prefix:  \* First Name: JohnMiddle Name: 

\* Last Name: Whitmire

Suffix: 

\* Title: Mayor

\* Telephone Number: 832-393-1011 Fax Number: 

\* Email: John.Whitmire@houston.tx.gov

\* Signature of Authorized Representative:  \* Date Signed: 8/15/2025

Signed by:

DocuSigned by:

Cynthia Wilson  
E372023F937B434

**Applicant and Recipient  
Assurances and Certifications****U.S. Department of Housing  
and Urban Development**OMB Number: 2501-0044  
Expiration Date: 2/28/2027**Instructions for the HUD 424-B Assurances and Certifications**

As part of your application for HUD funding, you, as the official authorized to sign on behalf of your organization or as an individual, must provide the following assurances and certifications. The Responsible Civil Rights Official has specified this form for use for purposes of general compliance with 24 CFR §§ 1.5, 3.115, 8.50, and 146.25, as applicable. The Responsible Civil Rights Official may require specific civil rights assurances to be furnished consistent with those authorities and will specify the form on which such assurances must be made. A failure to furnish or comply with the civil rights assurances contained in this form may result in the procedures to effect compliance at 24 CFR §§ 1.8, 3.115, 8.57, or 146.39.

By submitting this form, you are stating that all assertions made in this form are true, accurate, and correct.

As the duly representative of the applicant, I certify that the applicant: [Insert below the Name and title of the Authorized Representative, name of Organization and the date of signature]:

\*Authorized Representative Name:

John Whitmire

\*Title: Mayor

\*Applicant/Recipient Organization:

City of Houston

1. Has the legal authority to apply for Federal assistance, has the institutional, managerial and financial capability (including funds to pay the non-Federal share of program costs) to plan, manage and complete the program as described in the application and the governing body has duly authorized the submission of the application, including these assurances and certifications, and authorized me as the official representative of the application to act in connection with the application and to provide any additional information as may be required.

2. Will administer the grant in compliance with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000(d)) and implementing regulations (24 CFR part 1), which provide that no person in the United States shall, on the grounds of race, color or national origin, be excluded from participation in, be denied the benefits of, or otherwise be subject to discrimination under any program or activity that receives Federal financial assistance OR if the applicant is a Federally recognized Indian tribe or its tribally designated housing entity, is subject to the Indian Civil Rights Act (25 U.S.C. 1301-1303).

3. Will administer the grant in compliance with Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. 794), as amended, and implementing regulations at 24 CFR part 8, the American Disabilities Act (42 U.S.C. §§ 12101 et seq.), and implementing regulations at 28 CFR part 35 or 36, as applicable, and the Age Discrimination Act of 1975 (42 U.S.C. 6101-07) as amended, and implementing regulations at 24 CFR part 146 which together provide that no person in the United States shall, on the grounds of disability or age, be excluded from participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity that receives Federal financial assistance; except if the grant program authorizes or limits participation to designated populations, then the applicant will comply with the nondiscrimination requirements within the designated population.

4. Will comply with the Fair Housing Act (42 U.S.C. 3601-19), as amended, and the implementing regulations at 24 CFR part 100, which prohibit discrimination in housing on the basis of race, color, religion, sex, disability, familial status, or national origin and will affirmatively further fair housing; except an applicant which is an Indian tribe or its instrumentality which is excluded by statute from coverage does not make this certification; and further except if the grant program authorizes or limits participation to designated populations, then the applicant

will comply with the nondiscrimination requirements within the designated population.

5. Will comply with all applicable Federal nondiscrimination requirements, including those listed at 24 CFR §§ 5.105(a) and 5.106 as applicable.

6. Will not use Federal funding to promote diversity, equity, and inclusion (DEI) mandates, policies, programs, or activities that violate any applicable Federal anti-discrimination laws.

7. Will comply with the acquisition and relocation requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 U.S.C. 4601) and implementing regulations at 49 CFR part 24 and, as applicable, Section 104(d) of the Housing and Community Development Act of 1974 (42 U.S.C. 5304(d)) and implementing regulations at 24 CFR part 42, subpart A.

8. Will comply with the environmental requirements of the National Environmental Policy Act (42 U.S.C. 4321 et seq.) and related Federal authorities prior to the commitment or expenditure of funds for property.

9. That no Federal appropriated funds have been paid, or will be paid, by or on behalf of the applicant, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress, in connection with the awarding of this Federal grant or its extension, renewal, amendment or modification. If funds other than Federal appropriated funds have or will be paid for influencing or attempting to influence the persons listed above, I shall complete and submit Standard Form-LLL, Disclosure Form to Report Lobbying. I certify that I shall require all subawards at all tiers (including sub-grants and contracts) to similarly certify and disclose accordingly. Federally recognized Indian Tribes and tribally designated housing entities (TDHEs) established by Federally-recognized Indian tribes as a result of the exercise of the tribe's sovereign power are excluded from coverage by the Byrd Amendment, but State-recognized Indian tribes and TDHEs established under State law are not excluded from the statute's coverage.

**I/We, the undersigned, certify under penalty of perjury that the information provided above is true, accurate, and correct. WARNING: Anyone who knowingly submits a false claim or makes a false statement is subject to criminal and/or civil penalties, including confinement for up to 5 years, fines, and civil and administrative penalties. (18 U.S.C. §§287, 1001, 1010, 1012, 1014; 31 U.S.C. §3729, 3802; 24 CFR §28.10(b)(1)(iii)).**

\* Signature:

Signed by:  
DocuSigned by:  
John Whitmire  
6372623F937B434

\* Date: (mm/dd/yyyy): 8/15/2025

---

**Public Reporting Burden Statement:** The public reporting burden for this collection of information is estimated to average 0.5 hours per response, including the time for reviewing instructions, searching existing data sources, gathering, and maintaining the data needed, and completing and reviewing the collection of information. Comments regarding the accuracy of this burden estimate and any suggestions for reducing this burden can be sent to: U.S. Department of Housing and Urban Development, Office of the Chief Data Officer, R, 451 7<sup>th</sup> St SW, Room 4176, Washington, DC 20410-5000. **Do not send completed HUD 424-B forms to this address.** This agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the collection displays a valid OMB control number. The Department of Housing and Urban Development is authorized to collect this information under the authority cited in the Notice of Funding Opportunity for this grant program. The information collected provides assurances and certifications for legal requirements related to the administration of this grant program. HUD will use this information to ensure compliance of its grantees. This information is required to obtain the benefit sought in the grant program. This information will not be held confidential and may be made available to the public in accordance with the Freedom of Information Act (5 U.S.C. §552).

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[View Burden Statement](#)

## ASSURANCES - CONSTRUCTION PROGRAMS

OMB Number: 4040-0009  
Expiration Date: 06/30/2028

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0042), Washington, DC 20503.

**PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.**

**NOTE:** Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the Awarding Agency. Further, certain Federal assistance awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.


As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, the right to examine all records, books, papers, or documents related to the assistance; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will not dispose of, modify the use of, or change the terms of the real property title or other interest in the site and facilities without permission and instructions from the awarding agency. Will record the Federal interest in the title of real property in accordance with awarding agency directives and will include a covenant in the title of real property acquired in whole or in part with Federal assistance funds to assure nondiscrimination during the useful life of the project.
4. Will comply with the requirements of the assistance awarding agency with regard to the drafting, review and approval of construction plans and specifications.
5. Will provide and maintain competent and adequate engineering supervision at the construction site to ensure that the complete work conforms with the approved plans and specifications and will furnish progressive reports and such other information as may be required by the assistance awarding agency or State.
6. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
7. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
8. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards of merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
9. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
10. Will comply with all Federal statutes relating to non-discrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681 1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

11. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal and federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
12. Will comply with the provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.
13. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333) regarding labor standards for federally-assisted construction subagreements.
14. Will comply with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
15. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of

Federal actions to State (Clean Air) implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).

16. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
17. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).
18. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
19. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.
20. Will comply with the requirements of Section 106(g) of the Trafficking Victims Protection Act (TVPA) of 2000, as amended (22 U.S.C. 7104) which prohibits grant award recipients or a sub-recipient from (1) Engaging in severe forms of trafficking in persons during the period of time that the award is in effect (2) Procuring a commercial sex act during the period of time that the award is in effect or (3) Using forced labor in the performance of the award or subawards under the award.

<p><b>SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL</b></p> <p>Signed by: </p>	<p><b>TITLE</b></p> <p>Mayor</p>
<p><b>APPLICANT ORGANIZATION</b></p> <p>City of Houston</p> <p><small>DocuSigned by: Steven David C3855B03AE1F45D...</small></p>	<p><b>DATE SUBMITTED</b></p> <p>10/23/2025</p>

## Appendix 3: Standard Form LLL

**DISCLOSURE OF LOBBYING ACTIVITIES**

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

OMB Number: 4040-0013

Expiration Date: 06/30/2028

<b>1. * Type of Federal Action:</b> <input type="checkbox"/> a. contract <input checked="" type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance	<b>2. * Status of Federal Action:</b> <input type="checkbox"/> a. bid/offer/application <input checked="" type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	<b>3. * Report Type:</b> <input checked="" type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change
<b>4. Name and Address of Reporting Entity:</b> <input checked="" type="checkbox"/> Prime <input type="checkbox"/> SubAwardee * Name <span style="border: 1px solid red; background-color: yellow;">City of Houston</span> * Street 1 <span style="border: 1px solid red; background-color: yellow;">2100 Travis Street</span> Street 2 <span style="border: 1px solid black;">9th Floor</span> * City <span style="border: 1px solid red; background-color: yellow;">Houston</span> State <span style="border: 1px solid black;">TX: Texas</span> Zip <span style="border: 1px solid black;">77002</span> Congressional District, if known: <span style="border: 1px solid black;">TX-18</span>		
<b>5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:</b>		
<b>6. * Federal Department/Agency:</b> <span style="border: 1px solid red; background-color: yellow;">US Dept of Housing and Urban Development</span>		<b>7. * Federal Program Name/Description:</b> <span style="border: 1px solid black;">Community Development Block Grants</span> Assistance Listing Number, if applicable: <span style="border: 1px solid black;">14.218; 14.228</span>
<b>8. Federal Action Number, if known:</b> <span style="border: 1px solid black;">FR-6512-N-01</span>		<b>9. Award Amount, if known:</b> \$ <span style="border: 1px solid black;">314,645,000.00</span>
<b>10. a. Name and Address of Lobbying Registrant:</b> Prefix <span style="border: 1px solid black;"></span> * First Name <span style="border: 1px solid red; background-color: yellow;">Susan</span> Middle Name <span style="border: 1px solid black;"></span> * Last Name <span style="border: 1px solid red; background-color: yellow;">Lent</span> Suffix <span style="border: 1px solid black;"></span> * Street 1 <span style="border: 1px solid black;">Robert S. Strauss Tower</span> Street 2 <span style="border: 1px solid black;">2001 K Street, NW</span> * City <span style="border: 1px solid black;">Washington</span> State <span style="border: 1px solid black;">DC: District of Columbia</span> Zip <span style="border: 1px solid black;">20006</span>		
<b>b. Individual Performing Services</b> (including address if different from No. 10a) Prefix <span style="border: 1px solid black;"></span> * First Name <span style="border: 1px solid red; background-color: yellow;">Susan</span> Middle Name <span style="border: 1px solid black;"></span> * Last Name <span style="border: 1px solid red; background-color: yellow;">Lent</span> Suffix <span style="border: 1px solid black;"></span> * Street 1 <span style="border: 1px solid black;">Robert S. Strauss Tower</span> Street 2 <span style="border: 1px solid black;">2001 K Street, NW</span> * City <span style="border: 1px solid black;">Washington</span> State <span style="border: 1px solid black;">DC: District of Columbia</span> Zip <span style="border: 1px solid black;">20006</span>		
<b>11.</b> Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.  * Signature: <span style="border: 1px solid black; padding: 2px;">Signed by:</span> * Name: Prefix <span style="border: 1px solid black;"></span> * First Name <span style="border: 1px solid red; background-color: yellow;">John</span> Middle Name <span style="border: 1px solid black;"></span> * Last Name <span style="border: 1px solid red; background-color: yellow;">Whitmire</span> Suffix <span style="border: 1px solid black;"></span> Title: <span style="border: 1px solid black;">Mayor</span> Telephone No.: <span style="border: 1px solid black;">832-393-1011</span> Date: <span style="border: 1px solid black;">8/18/2025</span>		
<b>Federal Use Only:</b>		Authorized for Local Reproduction Standard Form - LLL (Rev. 7-97)

## Appendix 4: Ordinance

City of Houston, Texas, Ordinance No. 2025-663

**AN ORDINANCE APPROVING AND AUTHORIZING THE SUBMISSION OF THE ACTION PLAN FOR DISASTER RECOVERY - 2024 DERECHO AND HURRICANE BERYL TO THE UNITED STATES DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT, INCLUDING A COMMUNITY DEVELOPMENT BLOCK GRANT - DISASTER RECOVERY 2024 APPLICATION AND BUDGET FOR THE COMMUNITY DEVELOPMENT BLOCK GRANT - DISASTER RECOVERY 2024 GRANT IN THE AMOUNT OF \$314,645,000.00; TO ACCEPT FUNDS FROM THE AFOREMENTIONED GRANT, IF AWARDED; CONTAINING FINDINGS AND OTHER PROVISIONS RELATING TO THE FOREGOING SUBJECT; AND DECLARING AN EMERGENCY..**

**WHEREAS**, the City of Houston’s Housing and Community Development Department (“HCD”) requests approval and authorization from the City Council of the City of Houston (“City Council”) to submit the Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl (“Plan”) to the United States Department of Housing and Urban Development (“HUD”), which includes an application and budget for Community Development Block Grant – Disaster Recovery 2024 (“CDBG-DR24”); and

**WHEREAS**, HCD also requests City Council approval to accept the aforementioned federal grant, if awarded; and

**WHEREAS**, funding priorities under the Plan will help to deploy long-term recovery from the 2024 Derecho and Hurricane Beryl and to implement mitigation activities that reduce risks of future disaster events; and

**WHEREAS**, the goals of the Plan are to mitigate the impacts of future disasters by: (1) developing and preserving affordable housing, (2) strengthening and improving critical City infrastructure, (3) increasing the City's capacity to deliver critical emergency response and public safety services, and (4) ensuring the availability of public facilities to (i) serve as cooling/heating centers and information and/or resource distribution points and (ii) provide essential services to prevent or address homeless.

**WHEREAS**, the City’s Application estimates a total of \$314,645,000.00 in CDBG-DR24 funding to be received and expended as follows:



Activity Name	Amount	%
Planning	\$200,000.00	0.06%
Administration	\$15,732,250.00	5.00%
Multifamily Housing Program	\$50,000,000.00	15.89%
Single Family Housing Program	\$50,000,000.00	15.89%
Power Generation Resilience Program	\$101,291,150.00	32.19%
Emergency Response/Public Safety Program	\$15,340,000.00	4.88%
Homeless Services Program	\$41,040,600.00	13.04%
Debris Repository Acquisition/Development Project	\$32,791,000.00	10.42%
Vegetation Management/Debris Removal Program	\$8,250,000.00	2.62%
Total	\$314,645,000.00	100.00%

**WHEREAS**, the format and information presented in the Plan are based on federal guidance and requirements; and

**WHEREAS**, HCD solicited public input in the development of the Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl through surveys, interviews, and presentations. HCD also developed and distributed written information on these federal grant funds, sponsoring three public hearings on June 10, 2025, June 12, 2025, and June 17, 2025; and

**WHEREAS**, as stipulated by federal regulations, 90 Federal Register 4759 and 90 Federal Register 1754, public notice of the proposed Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl was published on May 23, 2025 with a 30-day public comment period ending on June 22, 2025; **NOW THEREFORE**,

\* \* \* \*

**BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF HOUSTON, TEXAS:**

**Section 1.** That the City Council hereby approves and authorizes the City of Houston ("City") to submit the Plan to the HUD, including the grant application and budget (the "Application"): Community Development Block Grant – Disaster Recovery 2024 in the amount of \$314,645,000.00; all in substantially the form attached hereto under **Exhibit "A"** and incorporated herein by this reference.

**Section 2.** That the Mayor is hereby designated as the official to accept the funds requested in the Application, or a different amount awarded by HUD, for the purposes of the subject grant assistance programs, and the City Council hereby authorizes acceptance of such funds, if awarded.

**Section 3.** That the Mayor (or in the absence of the Mayor, the Mayor Pro-Tem, or their respective designee or successor) is hereby authorized to execute the Plan and Application and all related documents on behalf of the City and to take all actions necessary to effectuate the City's intent and objectives in approving such Plan, Application and related documents, or other undertakings in the event of changed circumstances. The City Secretary (or in the absence of the City Secretary, any Assistant City Secretary) is hereby authorized to attest to all such signatures and to affix the seal of the City to all such instruments. The City Attorney is hereby authorized to take all action necessary to enforce legal obligations under said contracts, agreements or other undertakings, without further authorization from City Council.

**Section 4.** That HCD has considered comments and views of citizens received in writing, or orally at the public hearings, in response to the Plan and may make changes to the Plan prior to submission of same to HUD, as necessary. Public notice of the proposed Plan was given by publication in the Houston Chronicle in English on May 23, 2025 and in La Voz in Spanish on June 6, 2025 with the 30-day public comment period expiring on June 22, 2025.

**Section 5.** That the City Council takes cognizance of the fact that in order to facilitate operations of the various City housing and community development programs, projects and activities, and to make adjustments occasioned by events transpiring during the year, some transfers will be necessary to and from some of the accounts contained within the grant application's budget as originally adopted. Accordingly, if the Mayor, through the Director of HCD or their designee or successor ("Director"), from time to time shall upon the review of the grant determine, consistent with the mandates of CDBG-DR24:

- (1) that there are unexpended funds in one or more CDBG-DR24 programs, projects or activities, which could be transferred to another program project, or activity without creating deficits in the requirements for any program, project or activity;
- (2) that all proposed transfers comply in all respects with all applicable federal laws and regulations;
- (3) that when a formal amendment is required, this document and its attachment will serve as a transmittal to HUD in compliance with 24 C.F.R. § 91.505(c), when applicable;
- (4) that a formal amendment may not be required by the HUD nor the City Council for such administrative and other minor changes to the budget; and

then, for all such administrative and other minor transfers, the Director may issue a request for the proposed transfer to the Director of the Finance Department. Upon receipt of such request, the Director of the Finance Department is hereby authorized to make transfers to and from said budget account or accounts in accordance with the request and to certify to the City Controller the amounts transferred and the accounts affected. Upon receipt of such certification, the City Controller shall treat such funds as if they had been so budgeted in the first instance.

**Section 6.** That the City Council authorizes the Director to make final adjustments to the Plan prior to its full execution, as may be required by HUD, without the necessity of returning to City Council for final approval.

**Section 7.** That there exists a public emergency requiring that this Ordinance be passed finally on the date of its introduction as requested in writing by the Mayor; therefore, this Ordinance shall be passed finally on such date and shall take effect immediately upon its passage and approval by the Mayor; however, in the event that the Mayor fails to sign this Ordinance within five days after its passage and adoption, it shall take effect in accordance with Article VI, Section 6, Houston City Charter.

**PASSED AND ADOPTED ON** 08/13/2025

**APPROVED ON** \_\_\_\_\_

Pursuant to Article VI, Section 6, Houston City Charter, the effective date of the foregoing Ordinance is: 08/19/2025.

ATTEST:	CITY OF HOUSTON, TEXAS
	Signed by:
<div><div>Signed by:</div><div>Troy D. Lemon</div></div>	
_____ City Secretary of the City of Houston	_____ Mayor of the City of Houston

PREPARED BY:

DocuSigned by:

David Chang

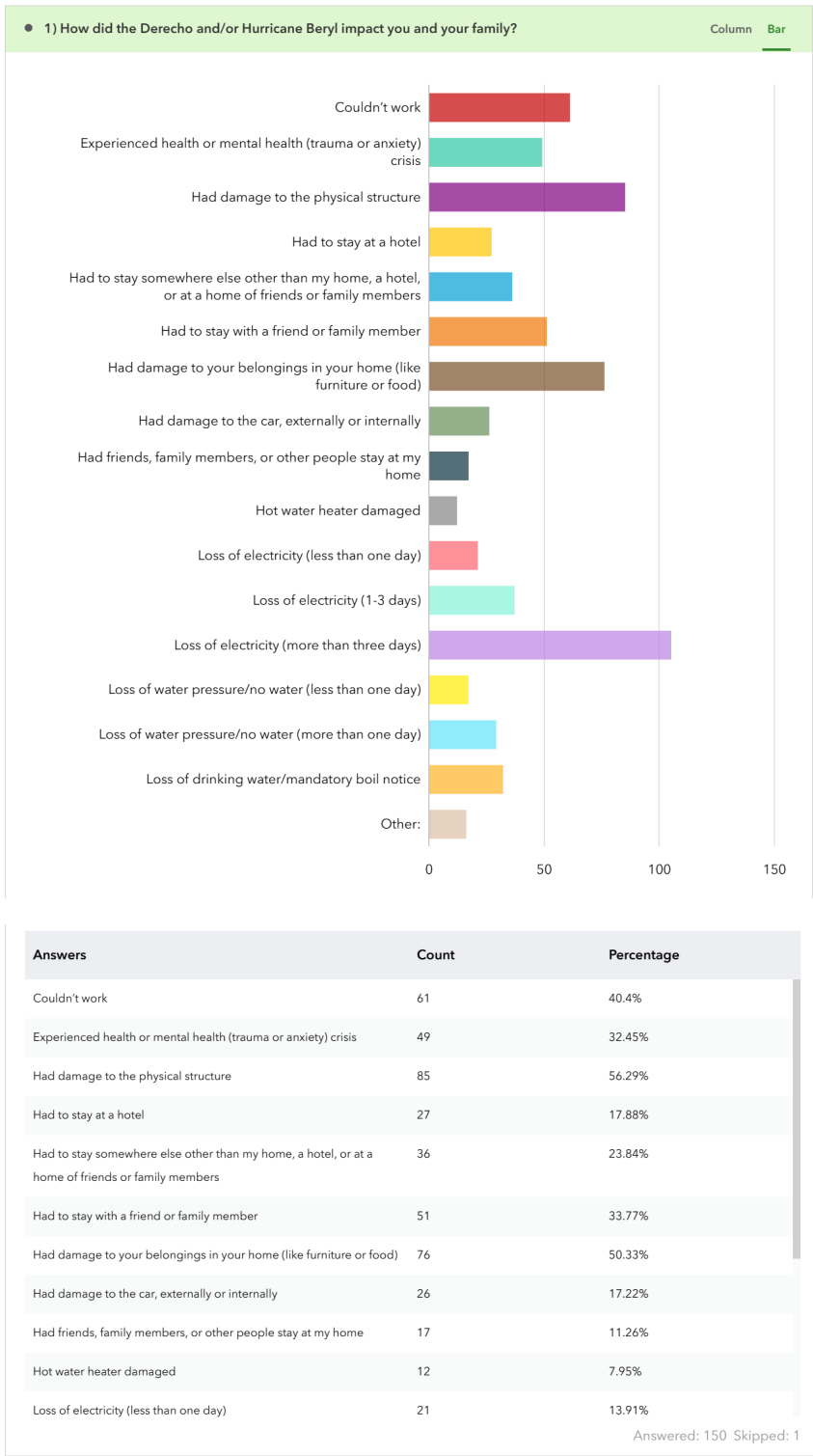
\_\_\_\_\_  
Senior Assistant City Attorney  
(DC/ea/8/18/25)  
LD-RE-0000003645\_  
Requested by Michael C. Nichols, Director, Housing and Community Development  
Amount of Funding: \$314,645,000.00 to be received – Federal Government – Grant Fund – (5000)  
HighQ/Real Estate/Housing/DCEA/Ordinances/Ord\_Action\_Plan\_DR24\_Derecho\_Beryl

## Appendix 5: Resident and Agency Surveys

# Resident Survey for Disaster Recovery – 2024 Derecho and Hurricane Beryl

Q1) How did the Derecho and/or Hurricane Beryl impact you and your family?

Impact





Loss of electricity (1-3 days)	37	24.5%
Loss of electricity (more than three days)	105	69.54%
Loss of water pressure/no water (less than one day)	17	11.26%
Loss of water pressure/no water (more than one day)	29	19.21%
Loss of drinking water/mandatory boil notice	32	21.19%
Other:	16	10.6%

Answered: 150 Skipped: 1

Other Response:

[Hide table](#)

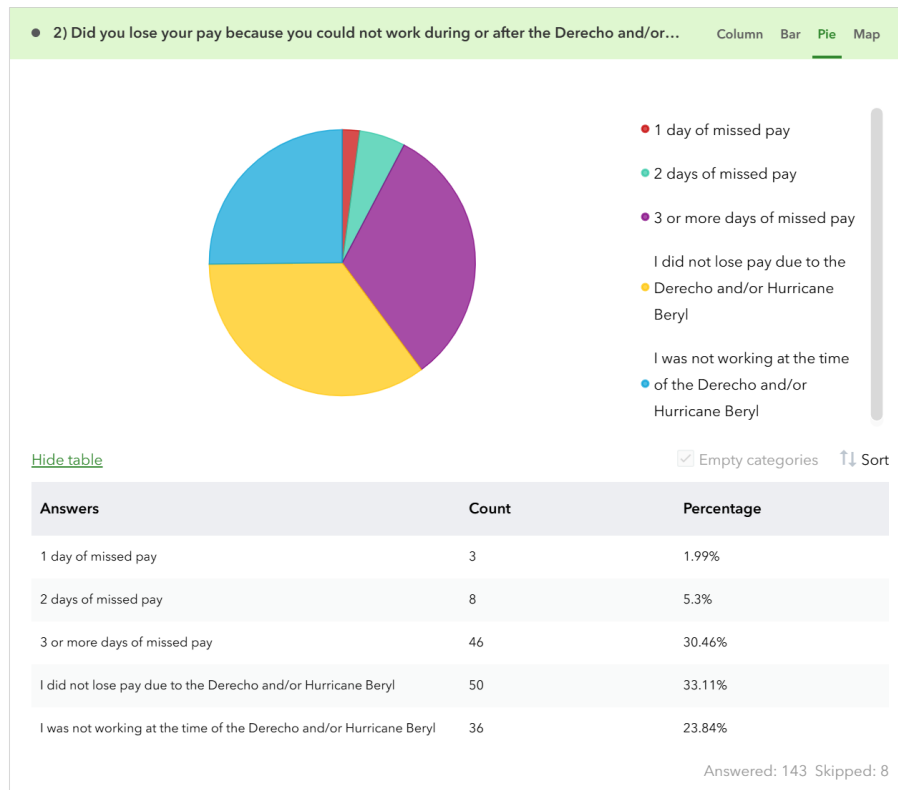
Other response

☒ Empty categories

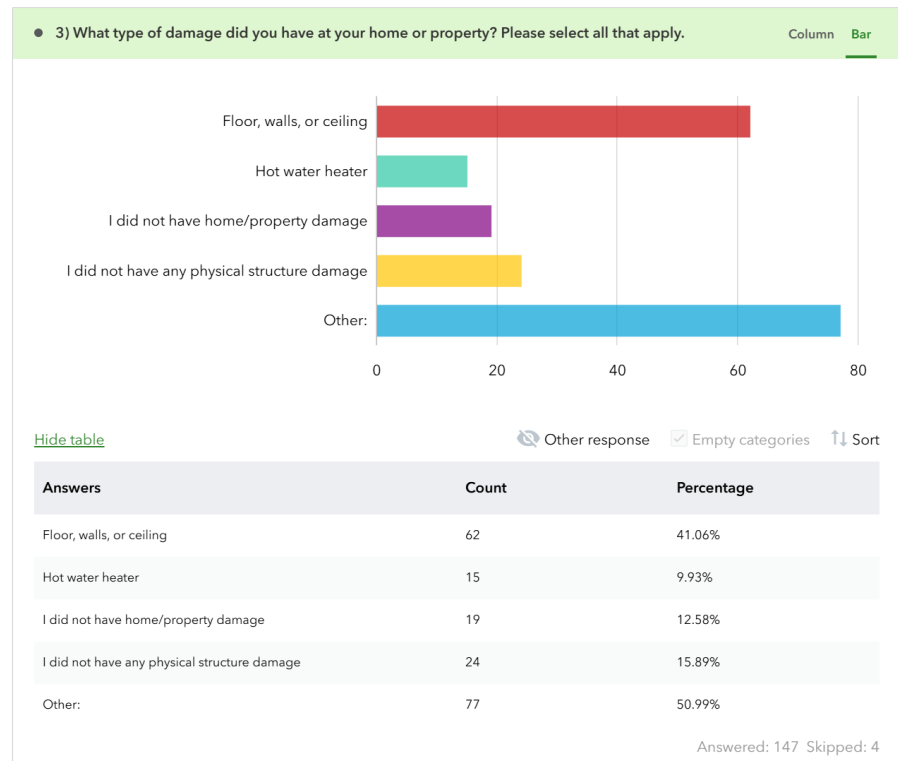
Sort

Response	Count
Wind damage blew out my bathtub and blew some insulation in attic around and busted air duck vents	1
water pipes burst	1
total or near-total loss of cell service and mobile data	1
Roof damage due to fallen tree	1
Pipe leakage	1
physical structure damage is ongoing. Not initially noticed in previous storms.	1
Loss of hvac	1
Kids unable to go to school	1
I had 2 anxiety attacks and emergency vehicles never came , Red Cross never came, I stay at a Hotel without any management on property and also they didn't even give a grace period for rent also FEMA denied me and I lost all my food and my Car passed away	1
I got stuck in Kroger when the power went out.	1

Q2) Did you lose your pay because you could not work during or after the Derecho and/or Hurricane Beryl due to the storm effects? If so, how many days of work did you lose pay?



Q3) What type of damage did you have at your home or property? Please select all that apply.



## Other Response:

[Hide table](#)

 Other response ☒ Empty categories  Sort

Response	Count
Roof	5
Roof damage	4
fence	3
Wood swelling. Overwhelming sanitation decreased. Increase in rodents.	1
Windows, fence	1
Windows leaked	1
water pipes clogged	1
Washer, roof, exhaust pipes,	1
Tree fell through my roof and ripped mobile home in half.	1
Too that still leaking	1
Tons of water under my block and beam house	1

The strong winds destroyed my fence and I sustained roof damage.	1
The outside siding is all torn up and buckled	1
The carport collapsed.	1
Siding/tree fell on garage made hole and it still there also knock down my window unit and all sheet rock got wet	1
Shingles	1
roofs and fences	1
roofing damage	1
roofing	1
Roof, pipes, windows, carport	1
Roof, outdoor lights, garage door and fence.	1

Roof, fence, siding	1
Roof lost lot of shingles	1
roof leaks	1
Roof damage, shinggles missing.	1
Roof damage and fence knocked down by a fallen tree.	1
Roof and trees	1
Roof and fences	1
Roof and fencing damage.	1
Numerous trees from neighbors fell on my yard.	1
No era mi Casa, era mi Apartamento, Yo y mi Familia somos Inquilinos	1

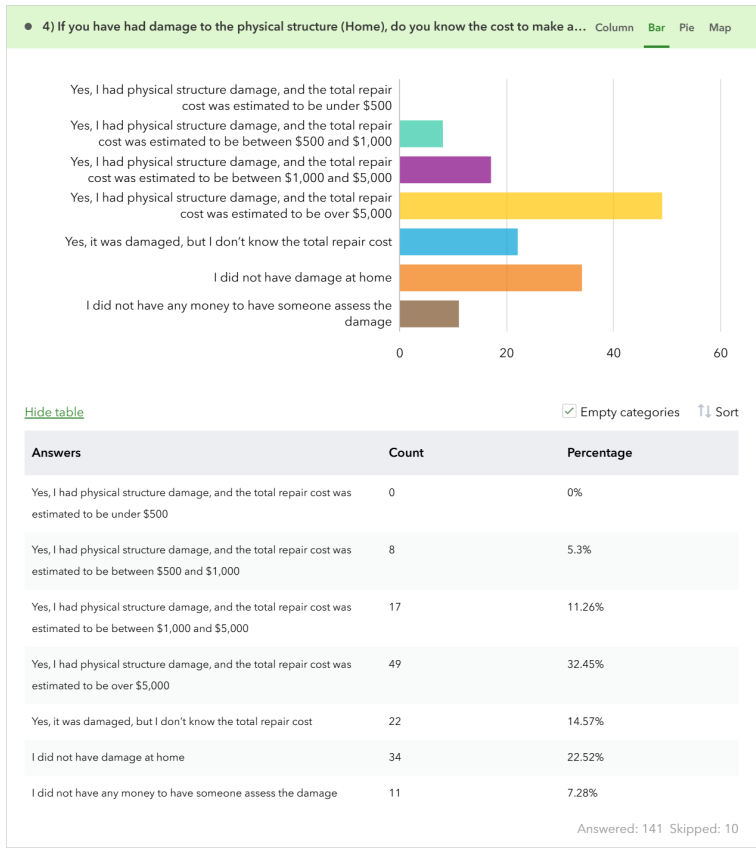
My siding and fascia was damaged	1
My furniture due to keeping the doors and windows open.	1
My fence was severely damaged had to get a new fence; I also lost a lot of shingles and have to replace my roof.	1
Lost siding on the house	1
Lost food and electric	1
loss of fridge/freezer food	1
loss of food in fridge/freezer	1
leaking around the base of the chimney (floor damage)	1
I wasn't able to use my C-pap machine due to no electricity	1
Hvac	1

Hugh oak trees fell on my property knocking my water line out of the ground . Much damage outside my fence, on all 4 sides and damage to my new fence in the back . Flooding !!!! And no drainage because we need a CIP that no one will approve	1
Homeless and lost all my stuff at the property I stayed at	1
Had the outside attached utility room collapse.	1
fencing down and tree uprooted	1
fencing and outdoor furniture were damaged	1
fences	1
fence, tree debris	1
Fence, roof	1
Fence damaged	1

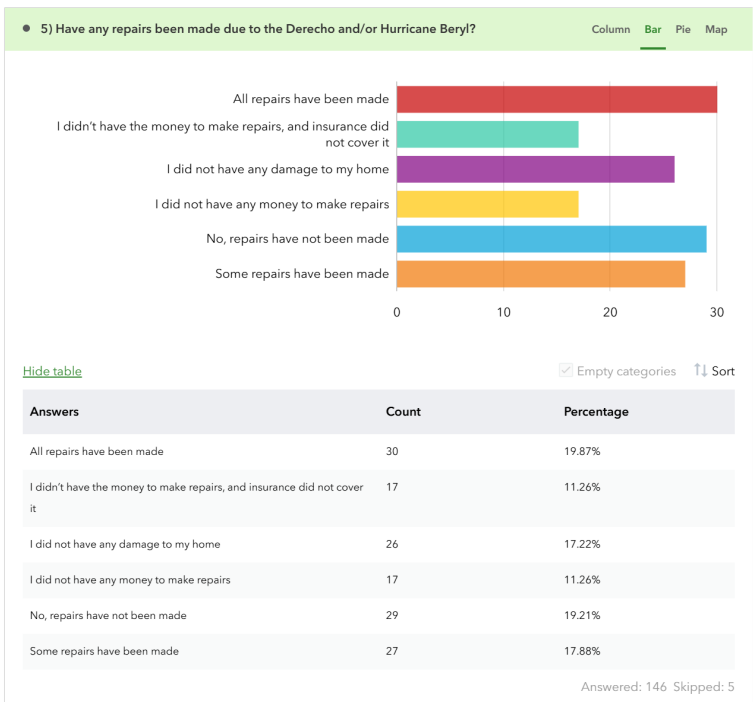
Fence and roof damage	1
Fence and roof	1
External damage	1
electronics, food and medical machines.	1
Due to loss of power for 1 week with each event, major food loss.	1
damaged roof and fence around property	1
Complete and total loss, damage to everything dwelling and belongings everything	1
circuit breaker box	1
Carport roof collapsed	1
Carport damage, Fence damage, roof damage	1

Back yard damage	1
all perishable foods lost due to lack of electricity	1
ALL MY CLOTHES AND SHOES WERE DAMAGED, MY LAPTOP, ELECTRONICS	1
a/c compressor damaged due to power surge	1
A tree was blown to the side of my home and to have it removed took all of the little money which I had saved along with my car payment for that month to get it removed off the roof and hauled away.	1
A tree branch went thru my roof leaving a big hole leaving everything inside my home vulnerable to water damage and everything else the hurricane brought	1

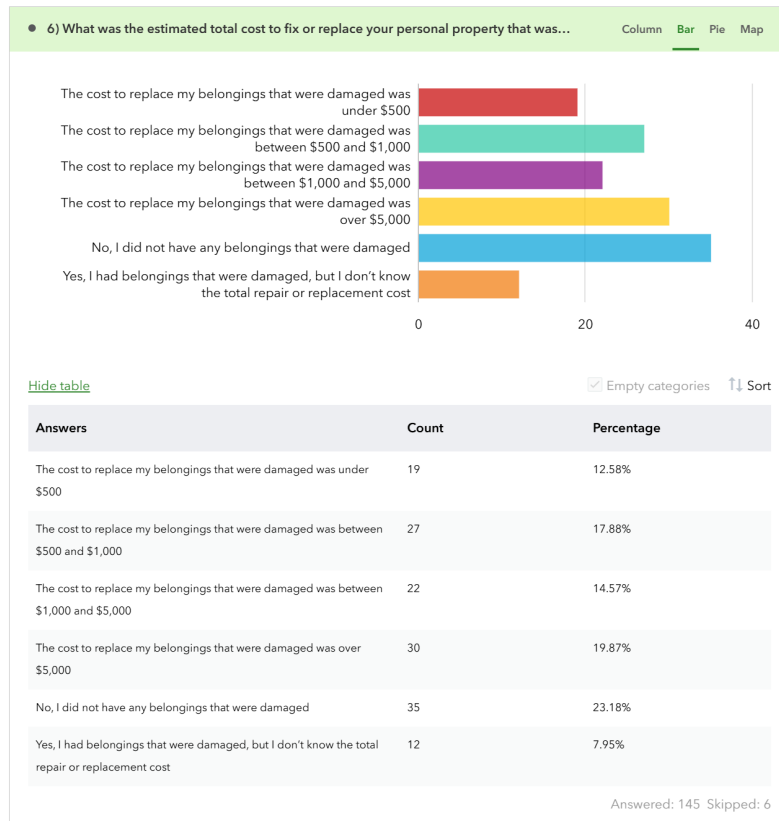
Q4) If you have had damage to the physical structure (Home), do you know the cost to make all the repairs caused by the Derecho and/or Hurricane Beryl?



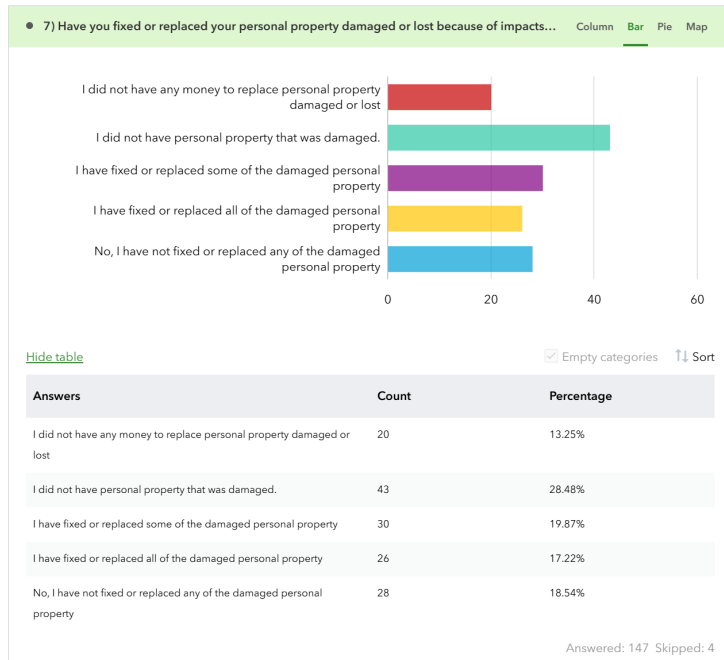
Q5) Have any repairs been made due to the Derecho and/or Hurricane Beryl?



Q6) What was the estimated total cost to fix or replace your personal property that was damaged due to the impact of the Derecho and/or Hurricane Beryl? Personal property could include (furniture, rugs, food, etc.)

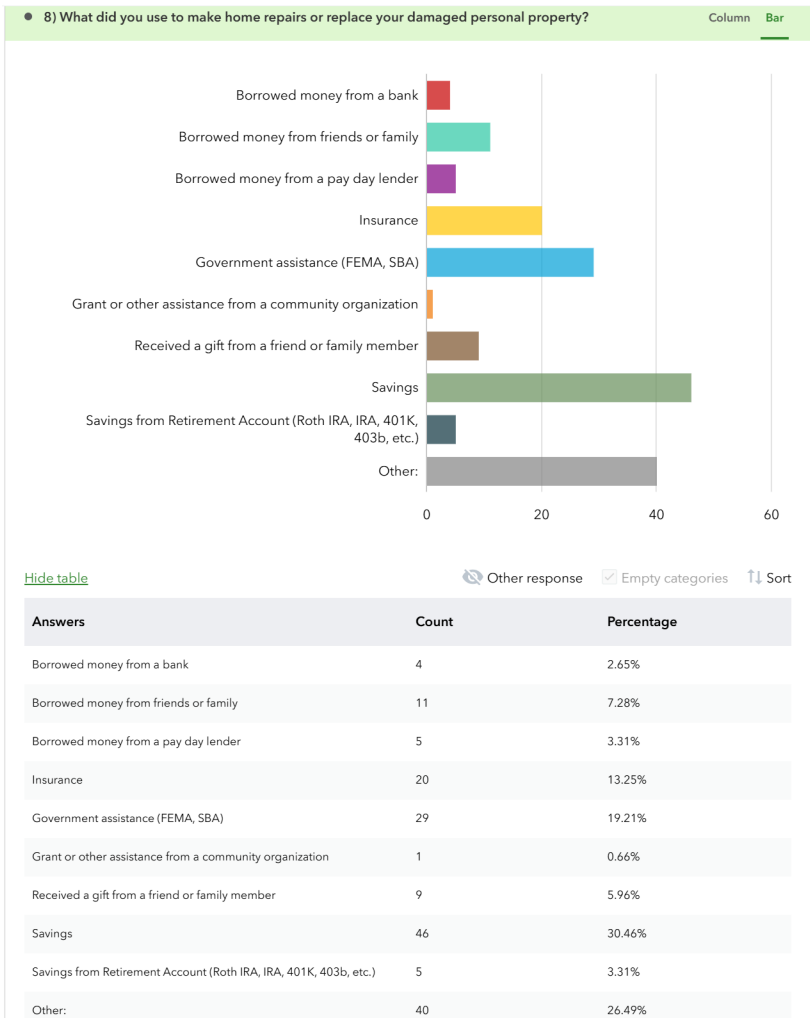


Q7) Have you fixed or replaced your personal property damaged or lost because of impacts from the Derecho and/or Hurricane Beryl?





Q8) What did you use to make home repairs or replace your damaged personal property?



Other Response:

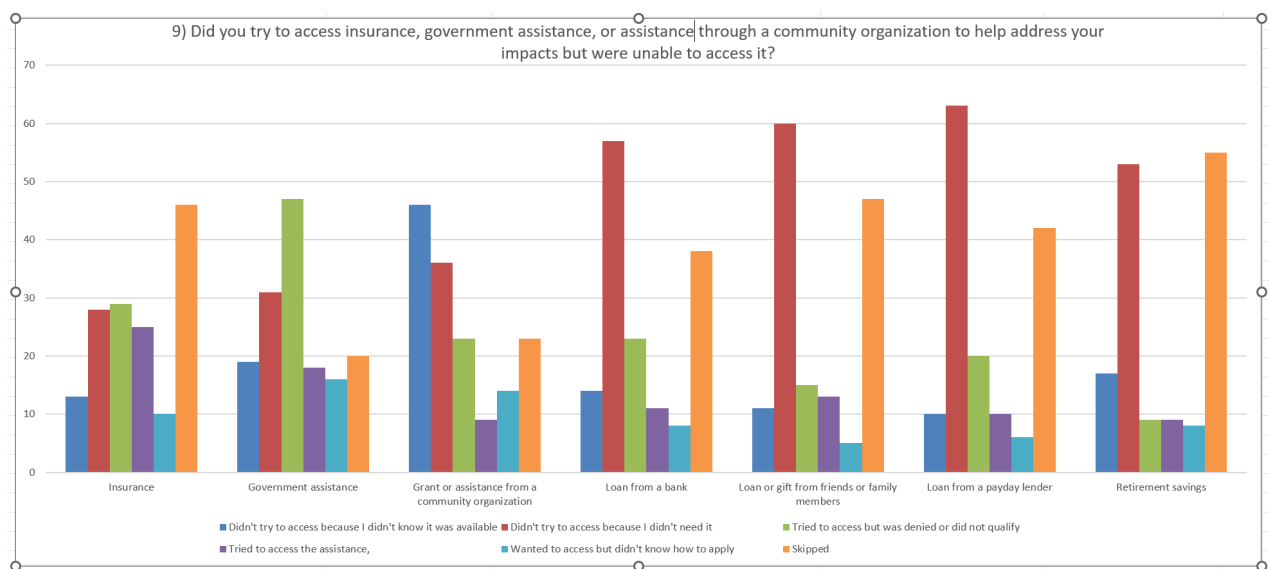
[Hide table](#) ☒ Other response ☒ Empty categories

Response	Count
we have not recieved any help. insurance claim filed in june 2025	1
Utilize la tarjeta de credito de Home Depot para comprar los muebles danados y estoy pagando mensualidades al banco que me financio la tarjeta	1
Used my car payment for that month.	1
Stuff I had and fixed items over time myself.	1
Paycheck	1
Pay check	1
Nothing	1
Not repair yet.	1
None of the above-repairs were not made.	1
No funds	1
No era mi Casa, Yo y mi Familia somos Inquilinos de un Complejo de Apartamentos	1

No damage	1
n/a	1
Money from my checking account	1
mi hijo me ayudó a hacer la aplicación para la ayuda	1
It was a rental and the landlord ended up selling the house and the new owners are renovating the property	1
I just payed for it myself by working	1
I have not had money to repair	1
I had to replace/repair the fence and gate door surrounding the property	1
I don't have money to fix at the time. I'm taking care of two sick parents and can't afford it	1
I did not use anything. The repairs still need to get done and got worse over time.	1
Homeowners Association Insurance	1
Got my old tired body out and started cutting trees to put on the curb, still working on it, but most is done.	1
For food, I went to food give aways, our personal belonging, electronics and medical machines were not replaced.	1
Fema but fema would not cover total cost	1
FEMA - The house is so far damaged that the funds were not sufficient to even repair the home.	1
Eviction	1
Did repair it	1
Credit cards	1
Credit Card and Savings	1
Couldn't Replace	1
Churches helped me	1
Apartment maintenance	1

Answered: 127 Skipped: 24

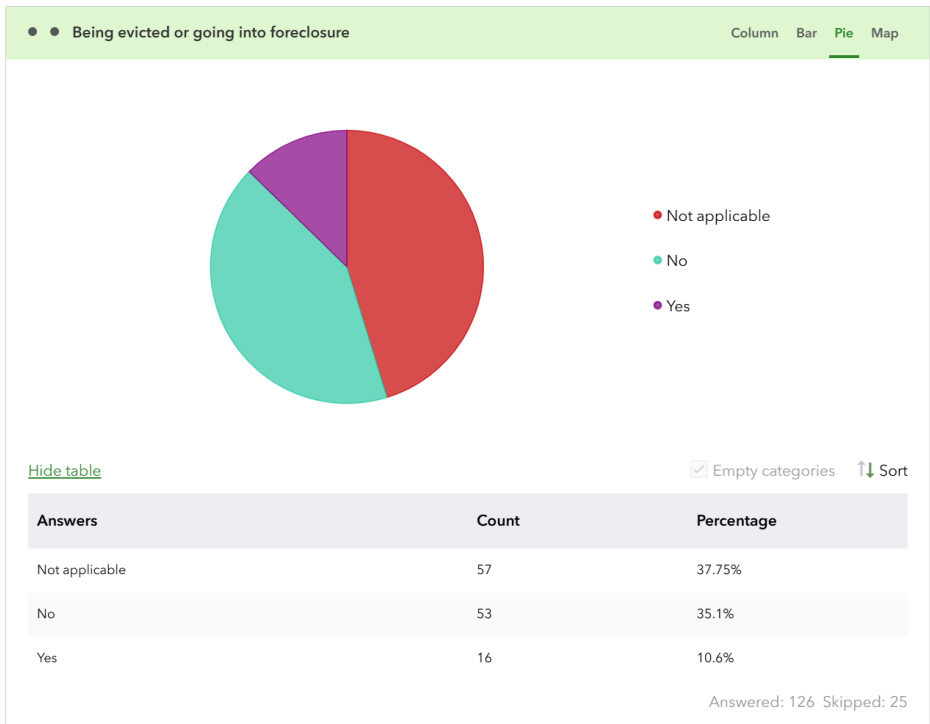
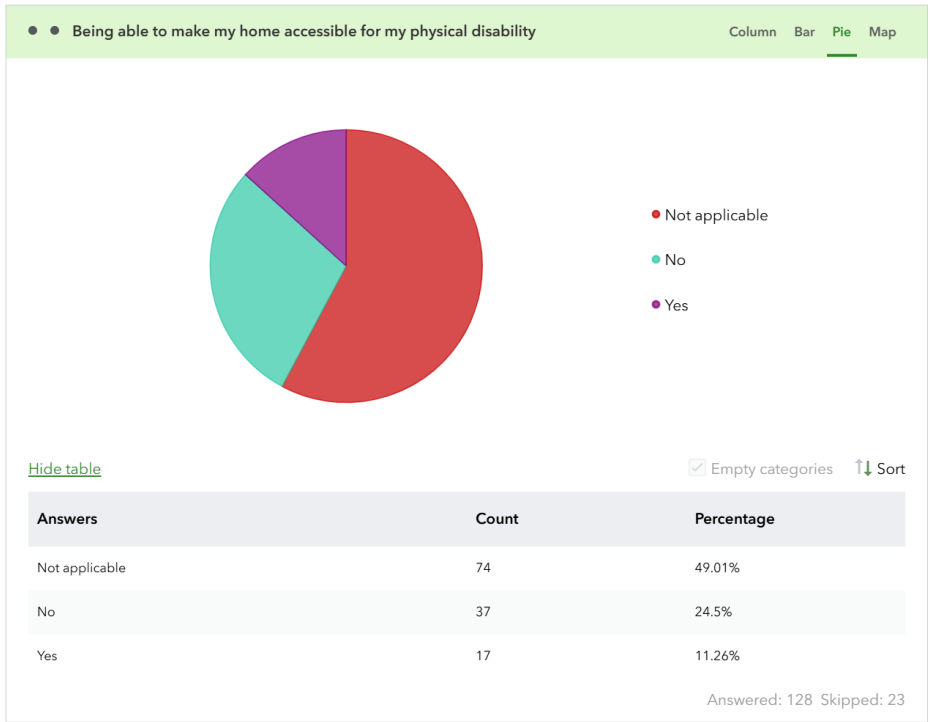
Q9) Did you try to access insurance, government assistance, or assistance through a community organization to help address your impacts but were unable to access it?



Q10-12) Word Cloud Format (Does not provide clear data for analysis) – Questions and Responses Removed.

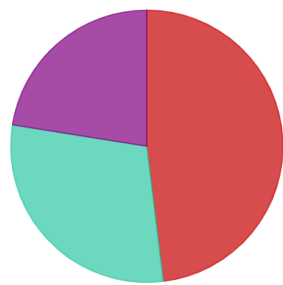
Q13) Since the Derecho (May 16th-17th) and Hurricane Beryl (July 5th-9th) of 2024, have you had trouble with the following issues?

Impact > 13) Since the Derecho (May 16th-17th) and Hurricane Beryl (July 5th-9th) of 2024, have you had trouble with the following issues?



● ● Finding a better job

Column Bar Pie Map



- Not applicable
- No
- Yes

[Hide table](#)

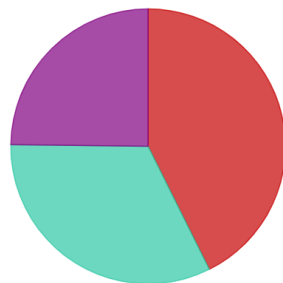
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
Not applicable	62	41.06%
No	38	25.17%
Yes	29	19.21%

Answered: 129 Skipped: 22

● ● Finding a better place to live

Column Bar Pie Map



- Not applicable
- No
- Yes

[Hide table](#)

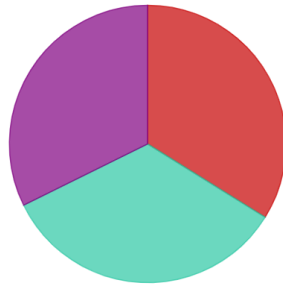
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
Not applicable	55	36.42%
No	42	27.81%
Yes	32	21.19%

Answered: 129 Skipped: 22

● ● Food assistance

Column Bar Pie Map



- No
- Not applicable
- Yes

[Hide table](#)

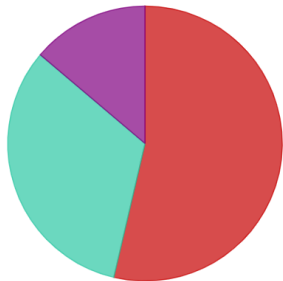
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
No	43	28.48%
Not applicable	43	28.48%
Yes	41	27.15%

Answered: 127 Skipped: 24

● ● Gaining job skills or education to find a better job

Column Bar Pie Map



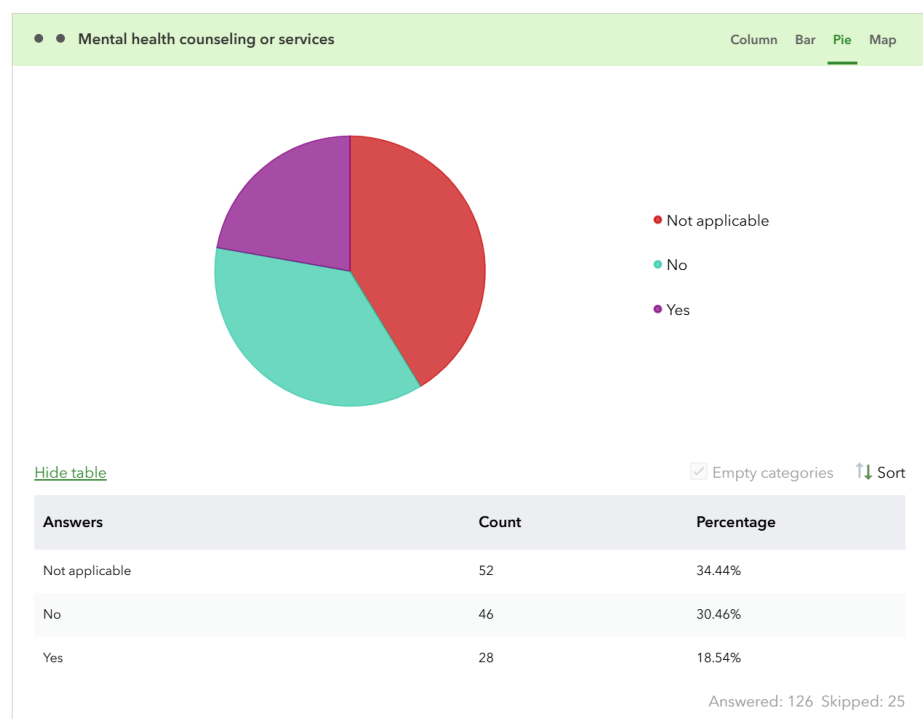
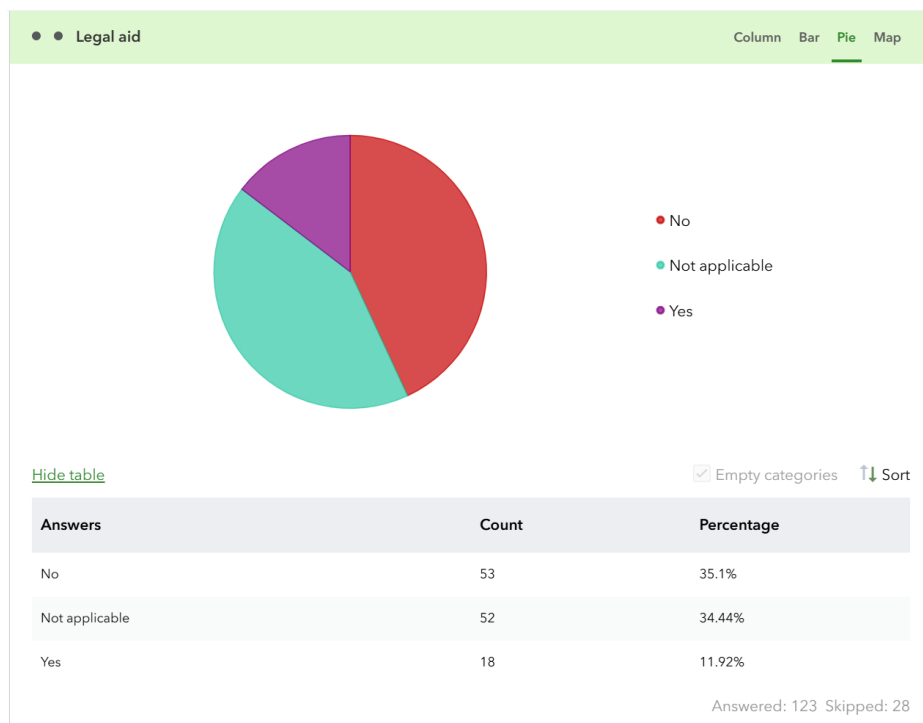
- Not applicable
- No
- Yes

[Hide table](#)

☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
Not applicable	66	43.71%
No	40	26.49%
Yes	17	11.26%

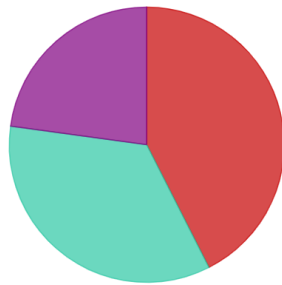
Answered: 123 Skipped: 28





● ● Mortgage or rent increased to an amount I couldn't afford

Column Bar Pie Map



- Not applicable
- No
- Yes

[Hide table](#)

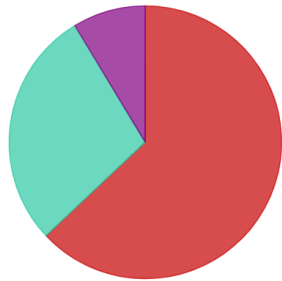
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
Not applicable	54	35.76%
No	44	29.14%
Yes	29	19.21%

Answered: 127 Skipped: 24

● ● My landlord refused to make repairs despite my requests

Column Bar Pie Map



- Not applicable
- No
- Yes

[Hide table](#)

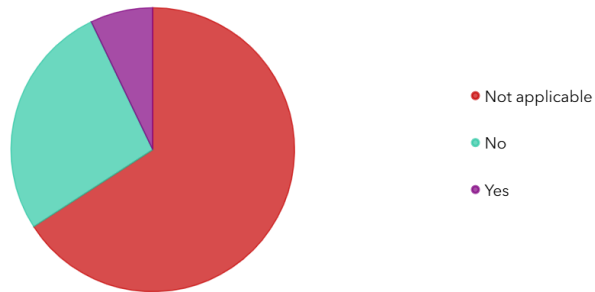
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
Not applicable	80	52.98%
No	36	23.84%
Yes	11	7.28%

Answered: 127 Skipped: 24

● ● My landlord stopped taking rental assistance or vouchers (i.e. Section 8)

Column Bar **Pie** Map



[Hide table](#)

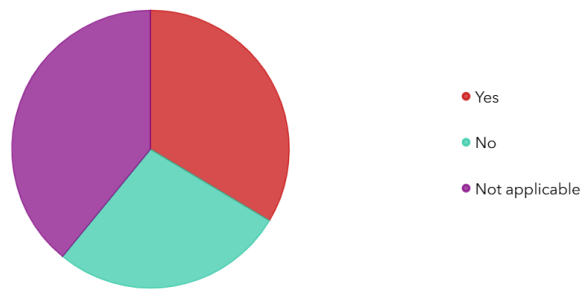
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
Not applicable	83	54.97%
No	34	22.52%
Yes	9	5.96%

Answered: 126 Skipped: 25

● ● Paying for property taxes

Column Bar **Pie** Map



[Hide table](#)

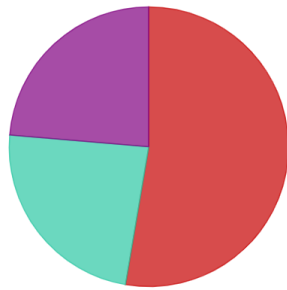
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
Yes	43	28.48%
No	35	23.18%
Not applicable	50	33.11%

Answered: 128 Skipped: 23

● ● Paying for repairs that need to be made in my home

Column Bar **Pie** Map



- Yes
- No
- Not applicable

[Hide table](#)

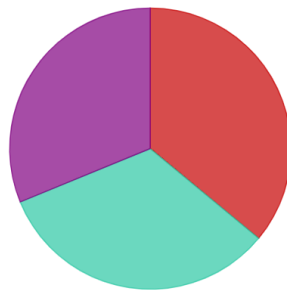
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
Yes	69	45.7%
No	31	20.53%
Not applicable	31	20.53%

Answered: 131 Skipped: 20

● ● Paying rent or mortgage

Column Bar **Pie** Map



- Yes
- Not applicable
- No

[Hide table](#)

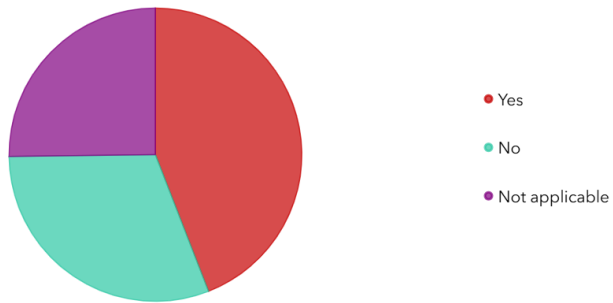
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
Yes	45	29.8%
Not applicable	41	27.15%
No	39	25.83%

Answered: 125 Skipped: 26

● ● Paying utility costs

Column Bar **Pie** Map



[Hide table](#)

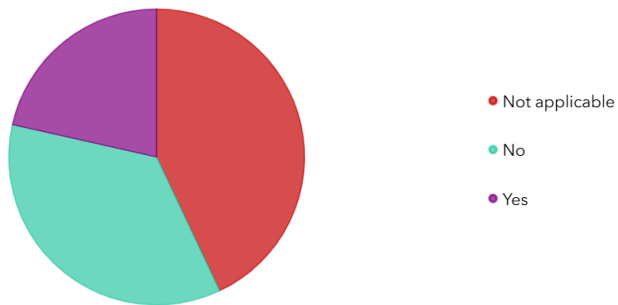
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
Yes	56	37.09%
No	39	25.83%
Not applicable	32	21.19%

Answered: 127 Skipped: 24

● ● Transportation assistance

Column Bar **Pie** Map

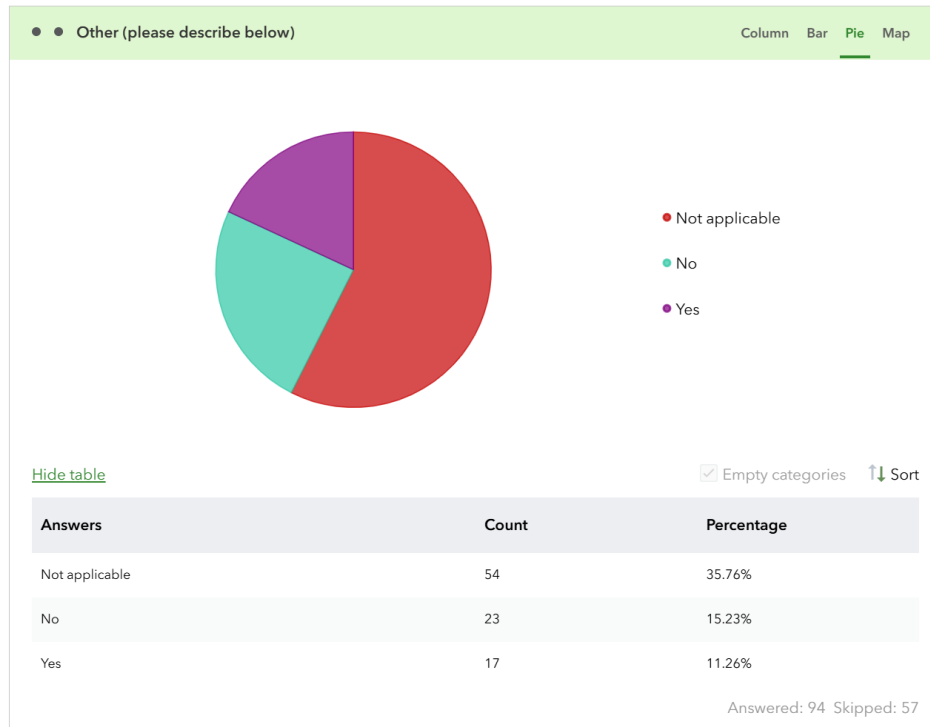


[Hide table](#)

☒ Empty categories [↑↓ Sort](#)

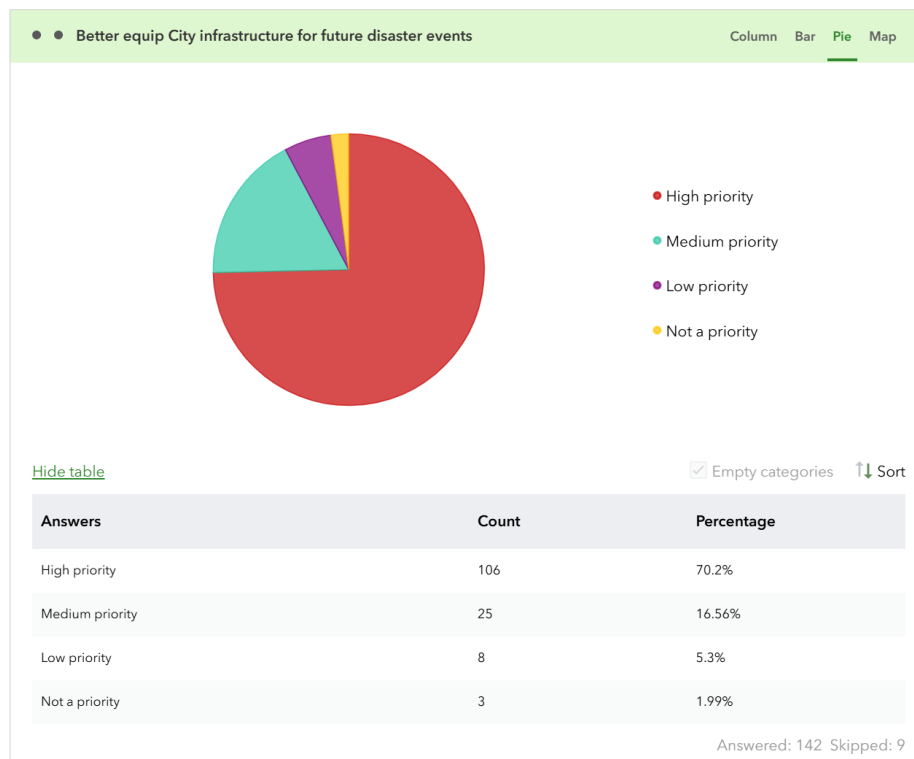
Answers	Count	Percentage
Not applicable	52	34.44%
No	43	28.48%
Yes	26	17.22%

Answered: 121 Skipped: 30



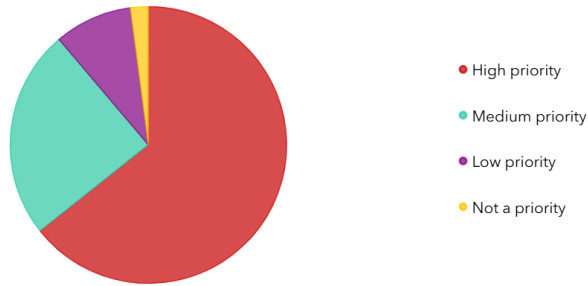
Q14) Please rate the funding priority for the following potential activities to be funded with the \$314.6 million in federal grant funds to address the needs of Houstonians impacted by the Derecho and/or Hurricane Beryl.

Funding Priorities > 14) Please rate the funding priority for the following potential activities to be funded with the \$314.6 million in federal grant funds to address the needs of Houstonians impacted by the Derecho and/or Hurricane Beryl.



● ● Better equip community facilities to be resources for Houstonians during disaster events

Column Bar **Pie** Map



[Hide table](#)

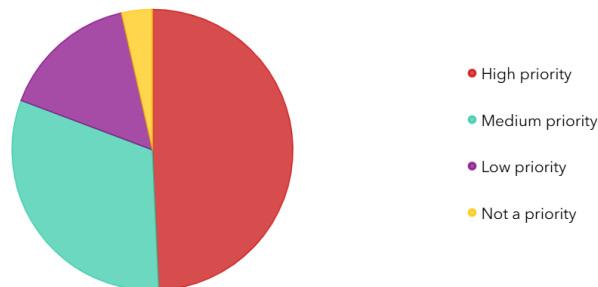
☒ Empty categories [Sort](#)

Answers	Count	Percentage
High priority	92	60.93%
Medium priority	35	23.18%
Low priority	13	8.61%
Not a priority	3	1.99%

Answered: 143 Skipped: 8

● ● Repair community facilities with outstanding repair needs

Column Bar **Pie** Map



[Hide table](#)

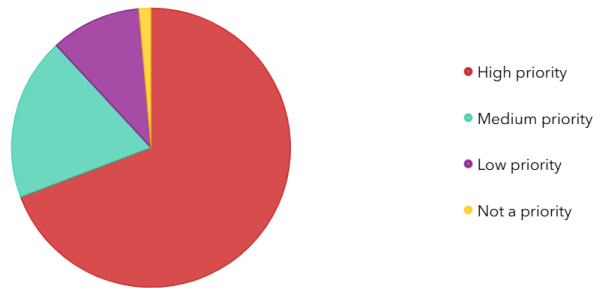
☒ Empty categories [Sort](#)

Answers	Count	Percentage
High priority	69	45.7%
Medium priority	44	29.14%
Low priority	22	14.57%
Not a priority	5	3.31%

Answered: 140 Skipped: 11

● ● Repair homeowner homes with outstanding repair needs

Column Bar **Pie** Map



[Hide table](#)

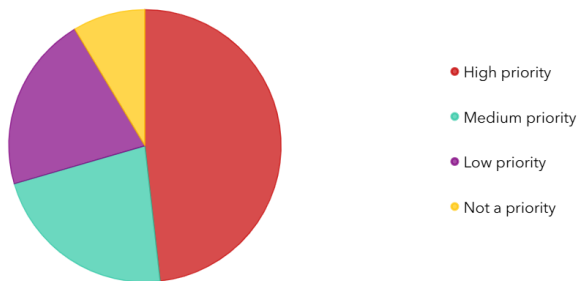
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	99	65.56%
Medium priority	27	17.88%
Low priority	15	9.93%
Not a priority	2	1.32%

Answered: 143 Skipped: 8

● ● Repair rental homes with outstanding repair needs

Column Bar **Pie** Map



[Hide table](#)

☒ Empty categories [↑↓ Sort](#)

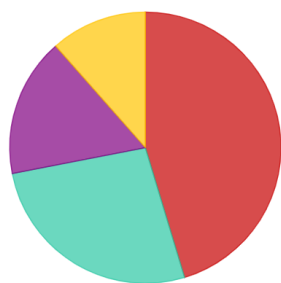
Answers	Count	Percentage
High priority	67	44.37%
Medium priority	31	20.53%
Low priority	29	19.21%
Not a priority	12	7.95%

Answered: 139 Skipped: 12



● ● Provide low- and moderate-income Houstonians with workforce training

Column Bar Pie Map



- High priority
- Medium priority
- Low priority
- Not a priority

[Hide table](#)

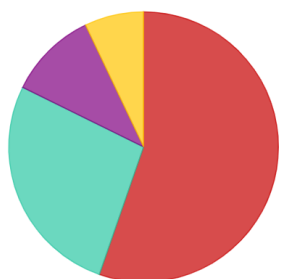
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	63	41.72%
Medium priority	37	24.5%
Low priority	23	15.23%
Not a priority	16	10.6%

Answered: 139 Skipped: 12

● ● Provide low- and moderate-income Houstonians with social services

Column Bar Pie Map



- High priority
- Medium priority
- Low priority
- Not a priority

[Hide table](#)

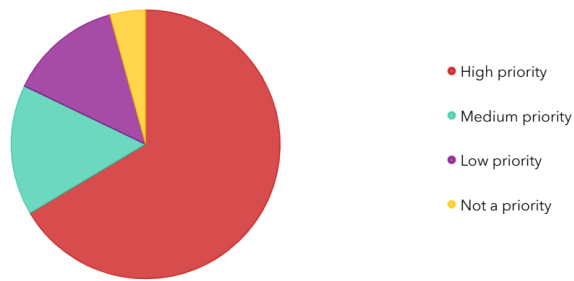
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	78	51.66%
Medium priority	38	25.17%
Low priority	15	9.93%
Not a priority	10	6.62%

Answered: 141 Skipped: 10

• • Weatherize homeowner homes

Column Bar **Pie** Map



[Hide table](#)

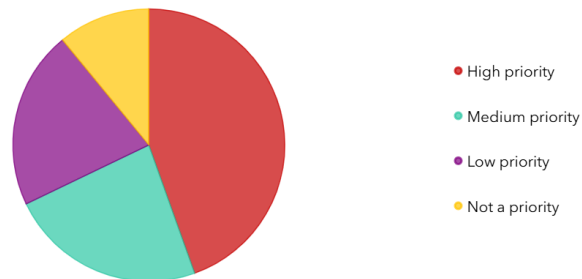
☒ Empty categories [Sort](#)

Answers	Count	Percentage
High priority	93	61.59%
Medium priority	22	14.57%
Low priority	19	12.58%
Not a priority	6	3.97%

Answered: 140 Skipped: 11

• • Weatherize rental homes

Column Bar **Pie** Map



[Hide table](#)

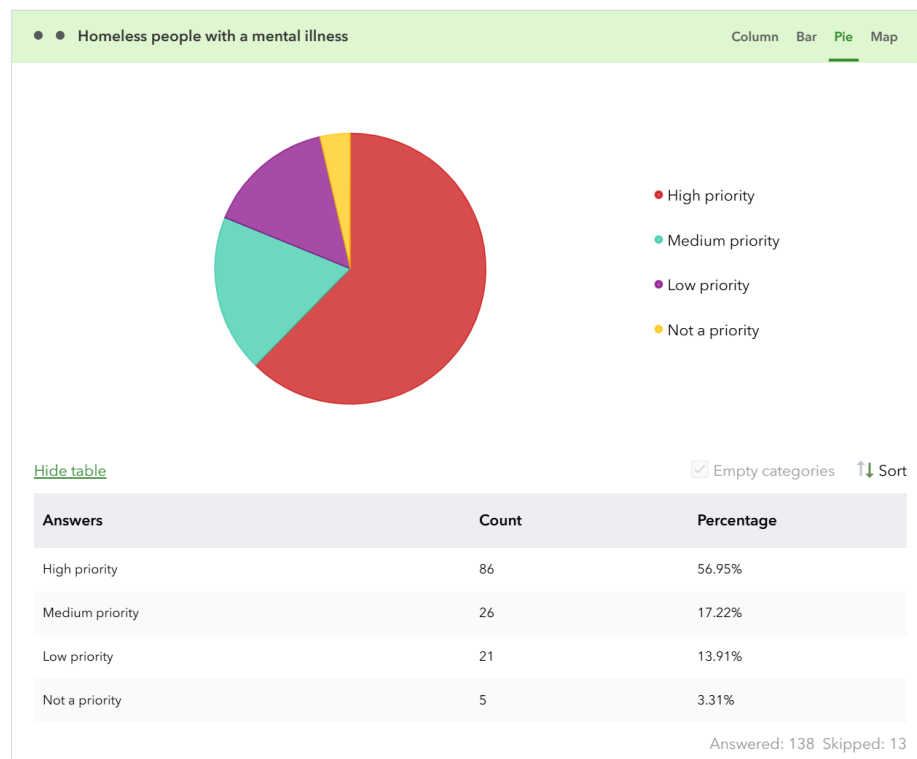
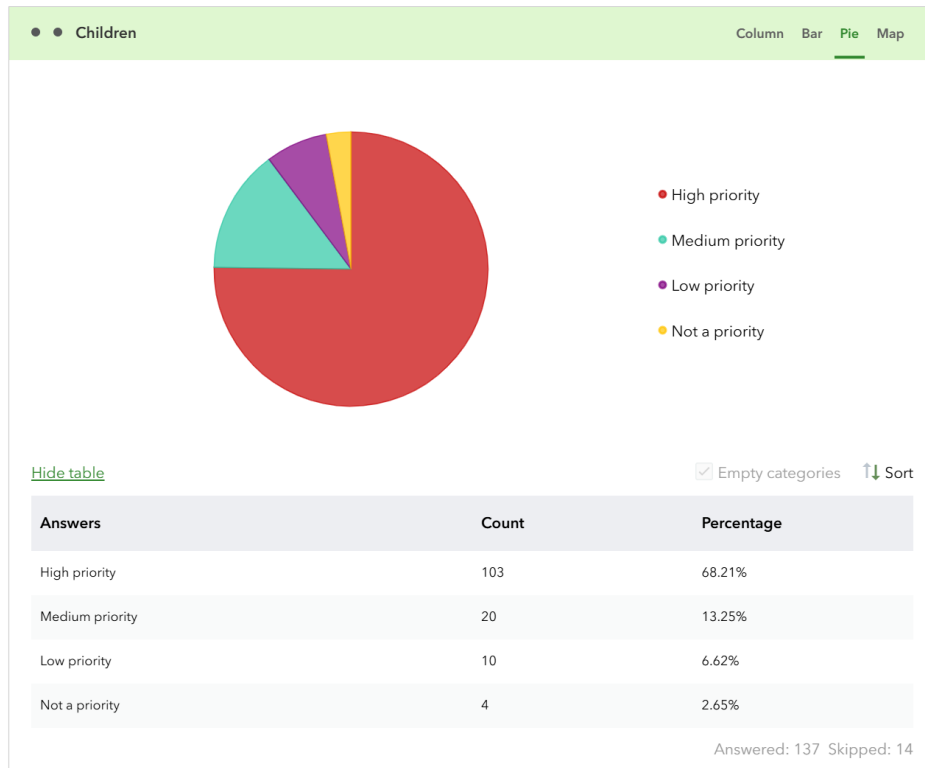
☒ Empty categories [Sort](#)

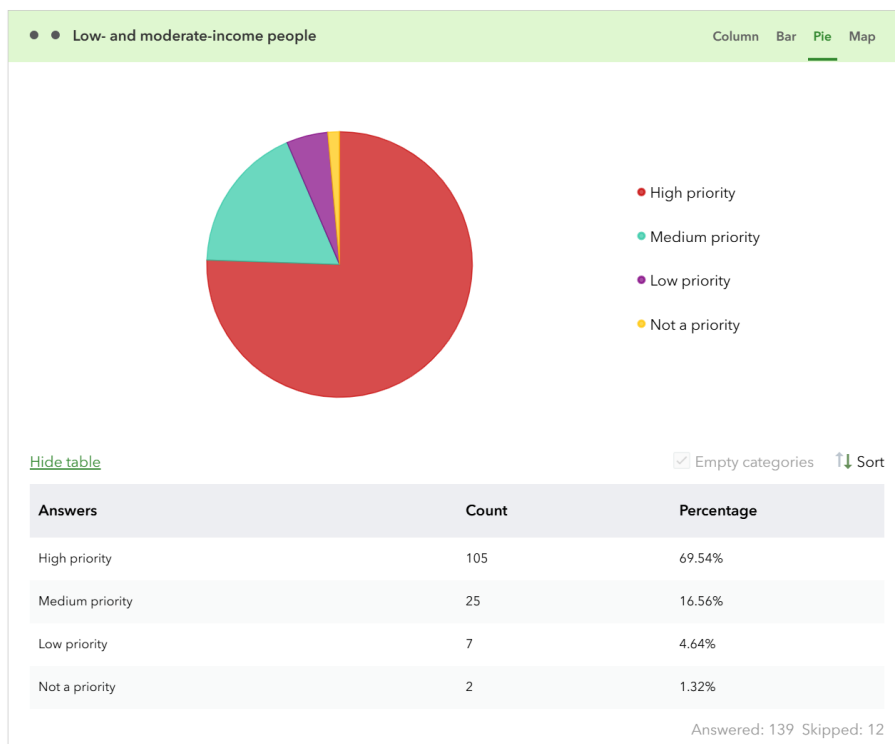
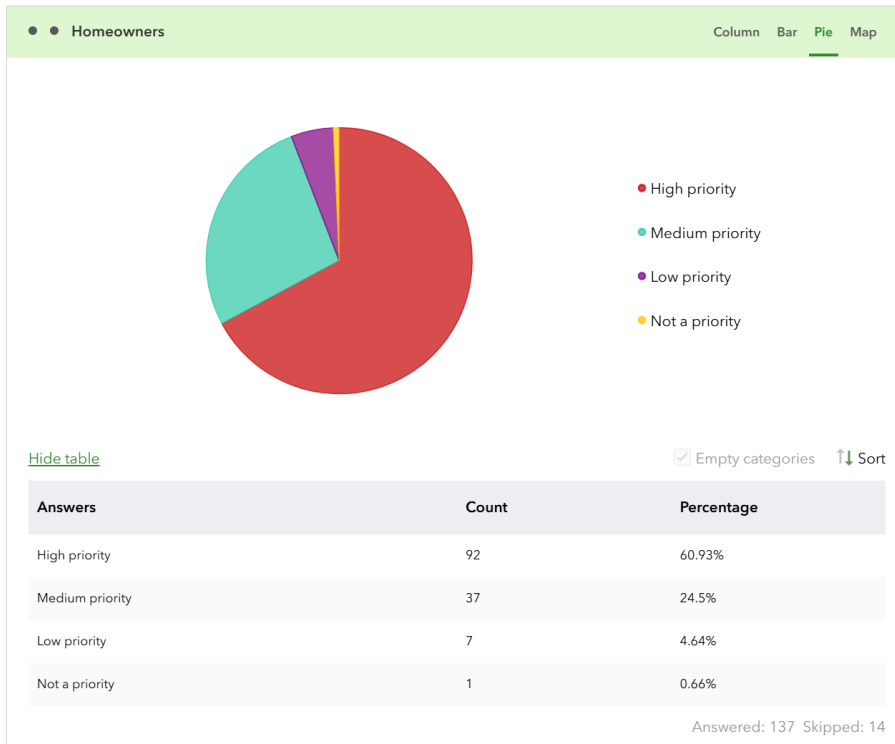
Answers	Count	Percentage
High priority	61	40.4%
Medium priority	32	21.19%
Low priority	29	19.21%
Not a priority	15	9.93%

Answered: 137 Skipped: 14

Q15) Please rate the funding priority for each of the following populations that could be targeted through the \$314.6 million federal grant to assist Houstonians impacted by the Derecho and/or Hurricane Beryl.

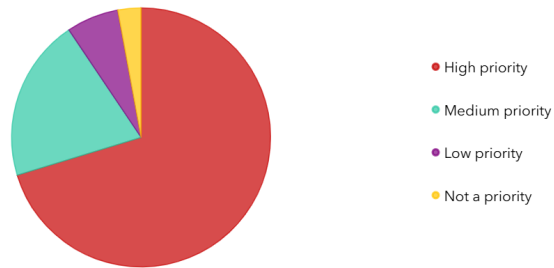
Funding Priorities > 15) Please rate the funding priority for each of the following populations that could be targeted through the \$314.6 million federal grant to assist Houstonians impacted by the Derecho and/or Hurricane Beryl.





● ● People with a developmentally disability

Column Bar Pie Map



[Hide table](#)

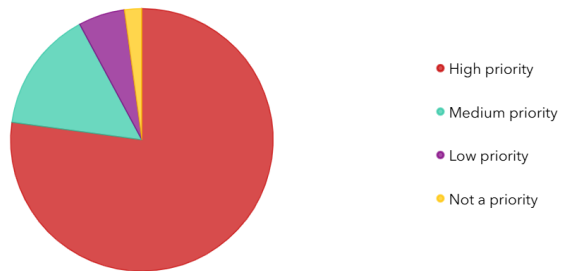
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	97	64.24%
Medium priority	28	18.54%
Low priority	9	5.96%
Not a priority	4	2.65%

Answered: 138 Skipped: 13

● ● People with a physical disability

Column Bar Pie Map

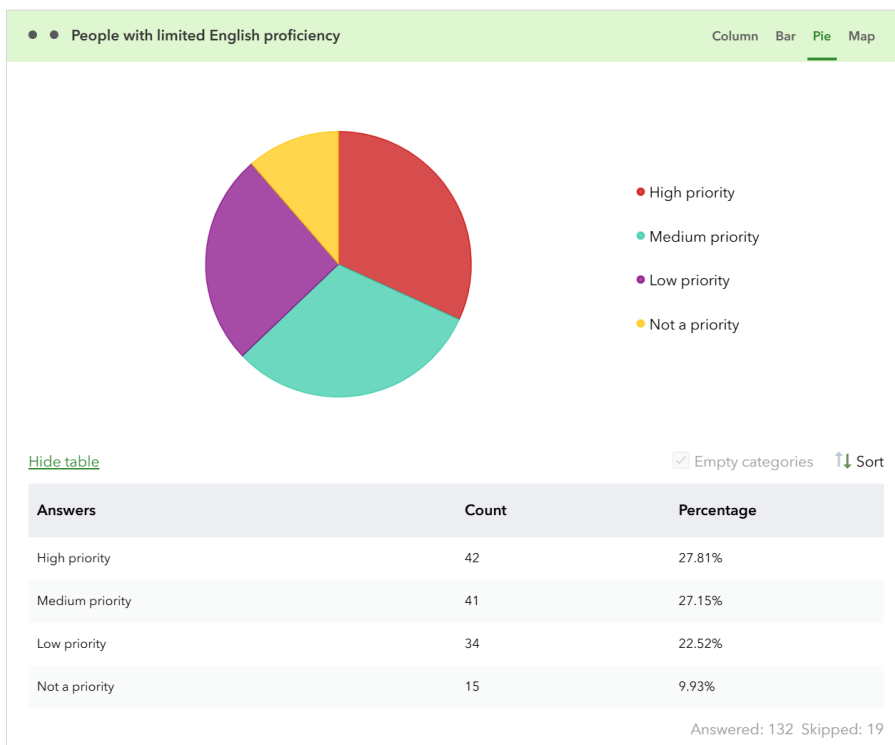
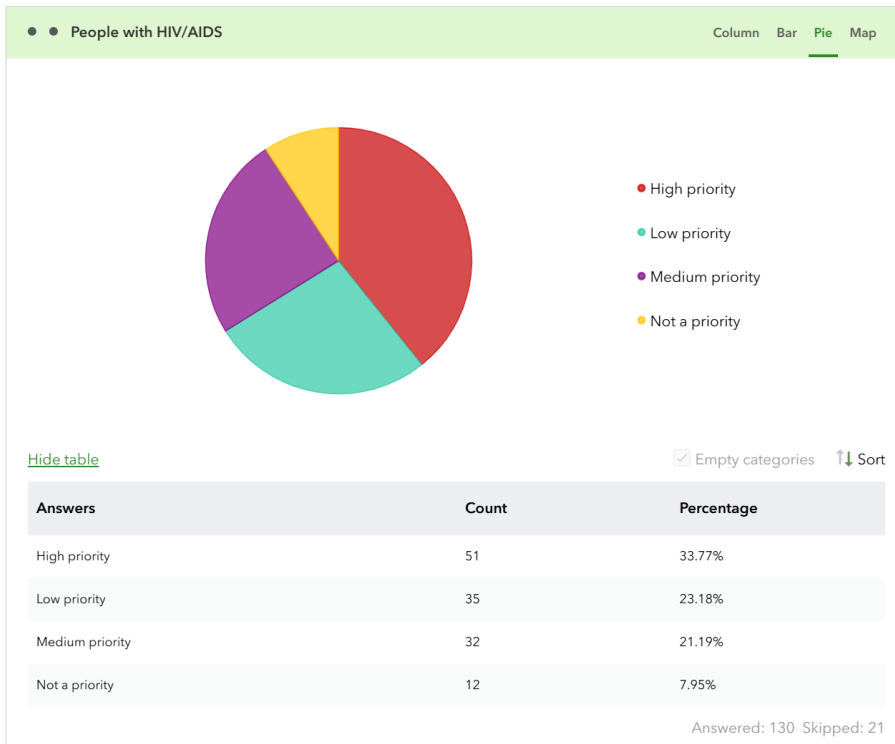


[Hide table](#)

☒ Empty categories [↑↓ Sort](#)

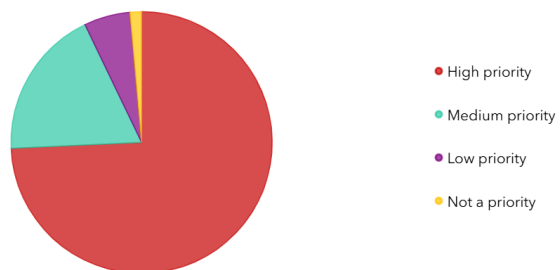
Answers	Count	Percentage
High priority	108	71.52%
Medium priority	21	13.91%
Low priority	8	5.3%
Not a priority	3	1.99%

Answered: 140 Skipped: 11



● ● Residents living in poverty

Column Bar **Pie** Map



[Hide table](#)

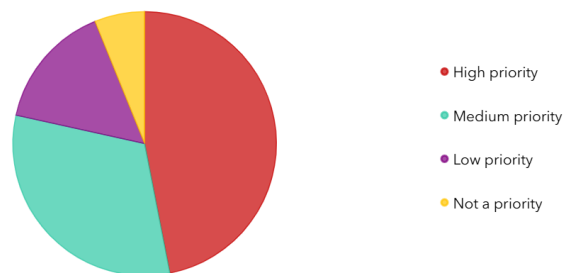
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	104	68.87%
Medium priority	26	17.22%
Low priority	8	5.3%
Not a priority	2	1.32%

Answered: 140 Skipped: 11

● ● Renters

Column Bar **Pie** Map



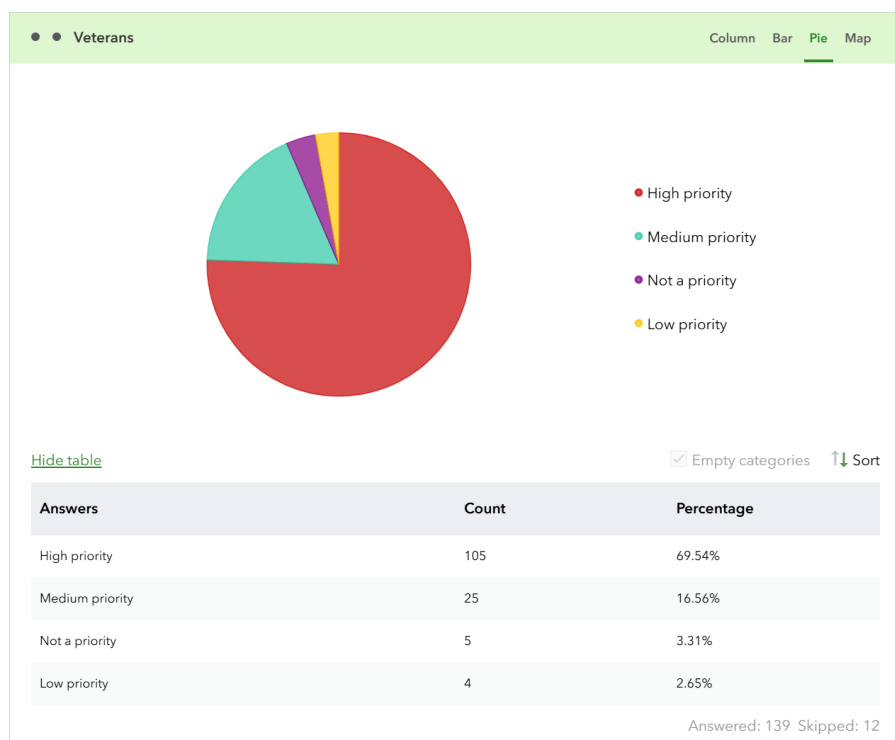
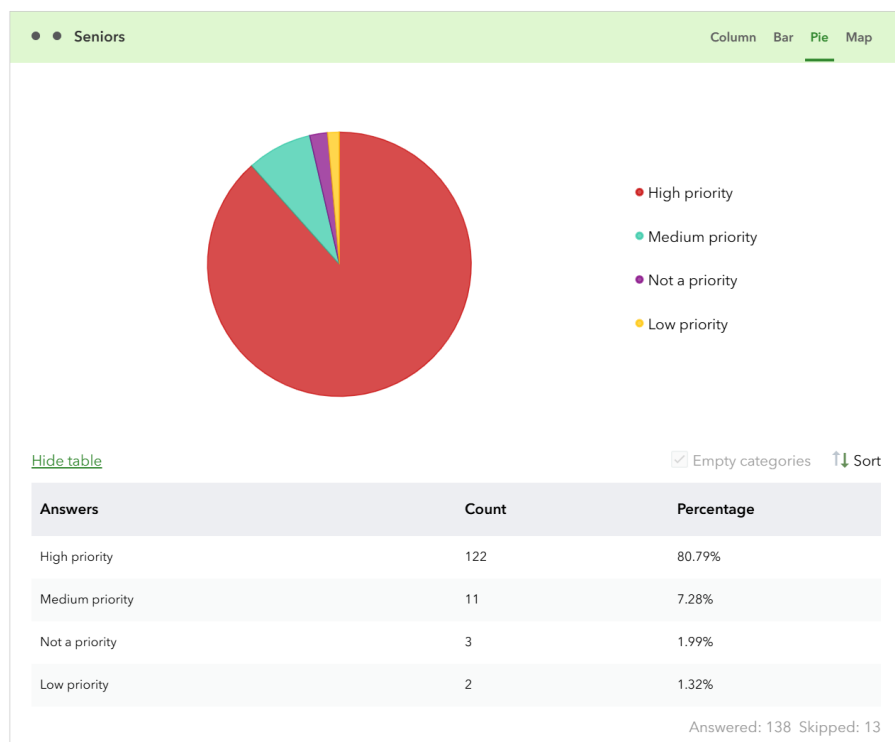
[Hide table](#)

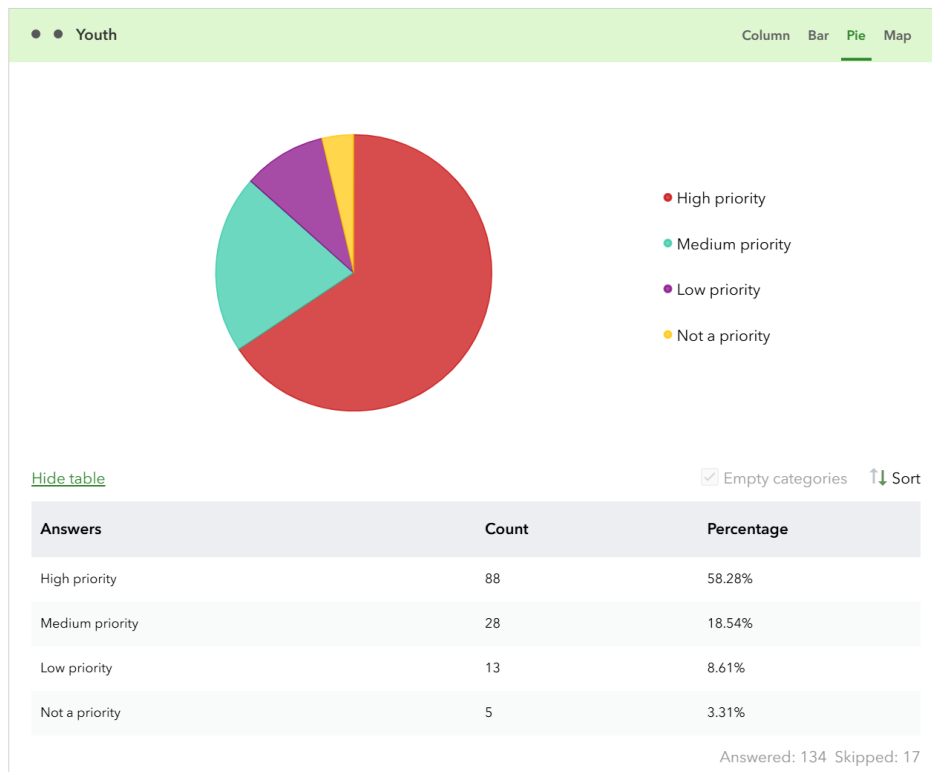
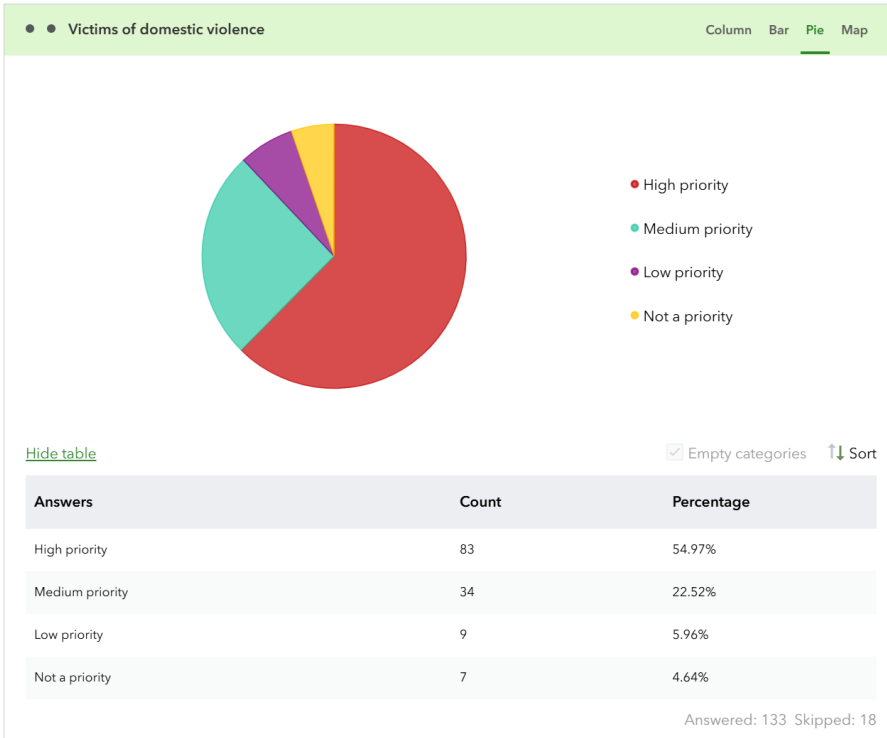
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	61	40.4%
Medium priority	41	27.15%
Low priority	20	13.25%
Not a priority	8	5.3%

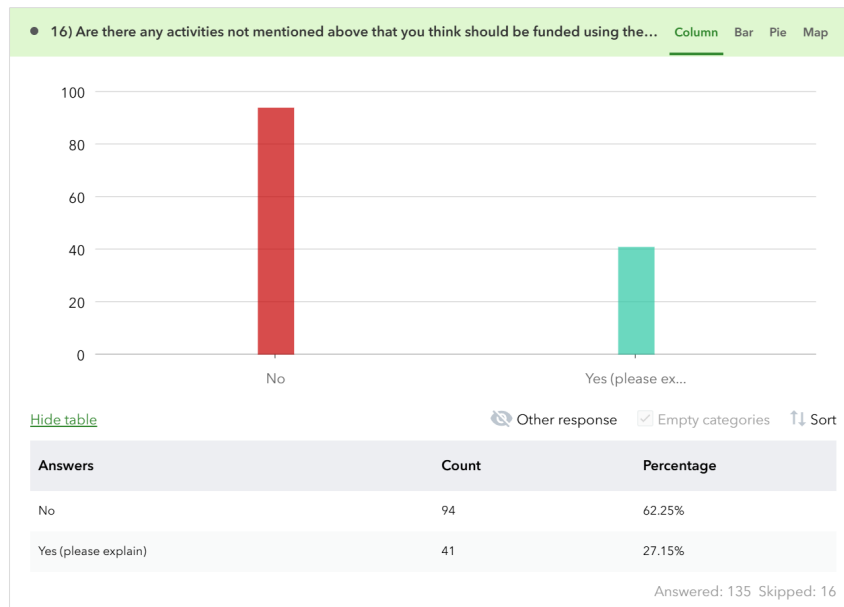
Answered: 130 Skipped: 21







Q16) Are there any activities not mentioned above that you think should be funded using the Derecho and/or Hurricane Beryl disaster recovery funding?



#### Other Response:

Hide table Other response Empty categories Sort

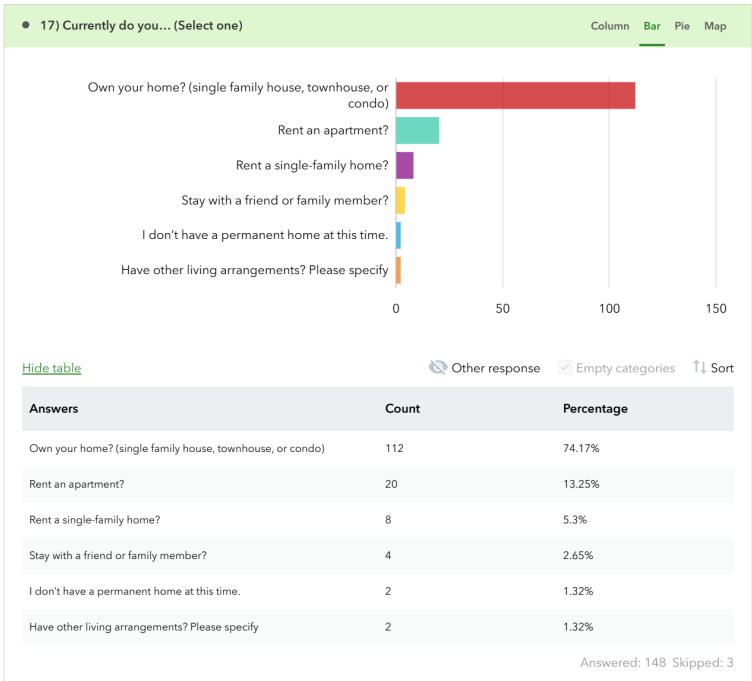
Response	Count
Your action plan includes absolutely NOTHING for Homeowner Assistance. That is a complete joke and misadministration of the purpose of the DR funding. FEMA did NOTHING, INSURANCE DID NOTHING. Homeowners and desperate!!!!	1
We desperately need to allocate a portion of the disaster recovery to the development of affordable housing to replace the aging and damaged housing stock.	1
VOUCHERS FOR UBER, CLOTHES, RESOURCES FOR PEOPLE TO GET A TWIC CARD, MORE RESOURCES FOR PEOPLE WHO ARE GOING THROUGH IDENTITY THEFT, HELP WITH RESTORING DRIVER LICENSE IF THE OFFENSE IS 10 PLUS YEARS OLD	1
Tree maintenance and removal. Drainage assessment and infrastructure	1
The Multiservice Centers needs generator in all centers across Houston and the Fire Houses needs generators as well.	1
street drainage and ditch improvements to ensure water doesn't flood the homes	1
Small businesses who have been affected during the storms.	1
Single mothers with kids	1
Shelters and long term housing for displaced families and Individuals	1
Send Inspectors to SENIORS	1
Safety	1
Put people to work on flood prevention infrastructure. This will benefit everyone. It's high priority	1
Please fund the construction of affordable housing. New buildings are the most resilient form of housing.	1
People in need of urgent home repairs	1
Optional buyouts of significantly floodprone houses/developments to expand natural/drainage land	1
New housing construction	1
Money should go to infrastructure upgrades, water and gas and electric and phone towers back up power	1
Making housing more affordable	1

make applications more available	1
Investing/savings fund	1
I AM A VETERAN INJURED IN THE LINE OF DUTY WITH DISABILITIES AND CAN'T FIND HELP WITH HOME REPAIRS FOR ME AND MY FAMILY	1
Houston is a blue city. No matter how Whitmire sucks it up, he will not be able to bring money we need for infrastructure. We need those \$\$\$.	1
Homes of people at high risk of homelessness	1
Have money available to pick up all the heavy trash so that it does not have to be out on the curbs for months.	1
generator programs need to be accesible to caregivers who care for family memeber with health needs to power their medical devices before during and after hurricanes. chidlren with accesibility to power their devices to communicate with caregiver	1

Food and water	1
Flooding prevention	1
Expand the Community Emergency Response Team system, including wider advertising of its existence. Change building codes to respond to these weather requirments, such as requiring a large generator to power apartment buildings, etc.	1
Drainage repair in NE Houston and other low-income areas that flood repeatedly. I want to be clear that I don't support using this money for anything related to law enforcement; I heard the City was using it to get more vehicles and generators for HPD.	1
Drainage and weatherproofing electrical infrastructure	1
disaster relief should fund the needs of citizens who were affected by those two storms, not buy police vehicles	1
Debris removal and private property vegetation management assistance for downed trees including stumps.	1
Cuidado médico para Personas Mayores y de Bajos Recursos y Enfermas	1

Churches, we need to keep the faith through a disaster.	1
Better more durable utility infrastructure (electricity, internet), better more reliable leadership & communication	1
Because I've been homeless and can't get no help	1
Because bad storm damage lost of work	1
Attention to neighborhoods historically looked over.	1
All houstonians should be at a high priority	1
Affordable housing construction	1
para arreglar lo que haiga pasado del desastre de su casa o para personas que hayan tenido algo de su organismo para que puedan pagar gastos médicos	1

Q17) Currently do you... (Select one)

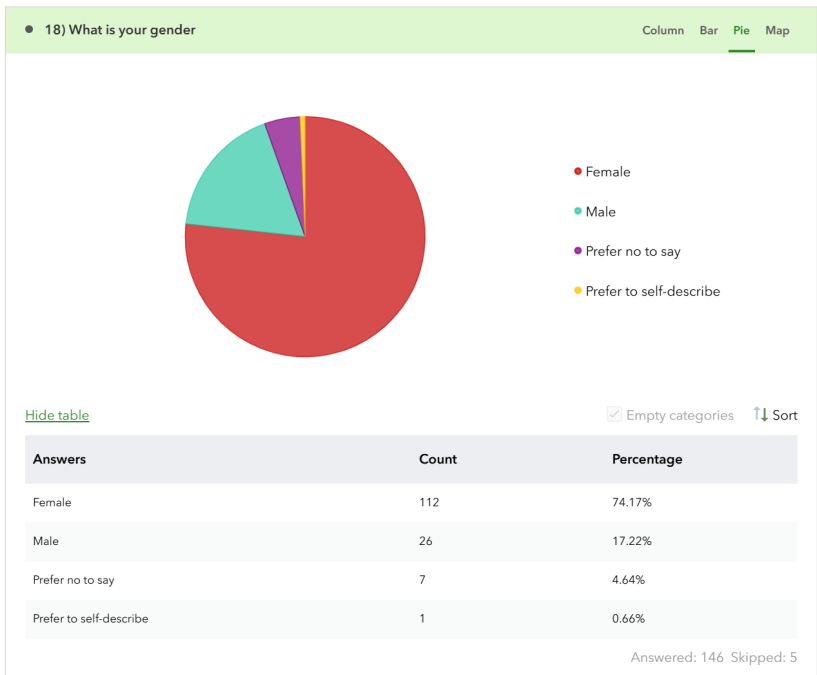


Hide table Other response Empty categories Sort

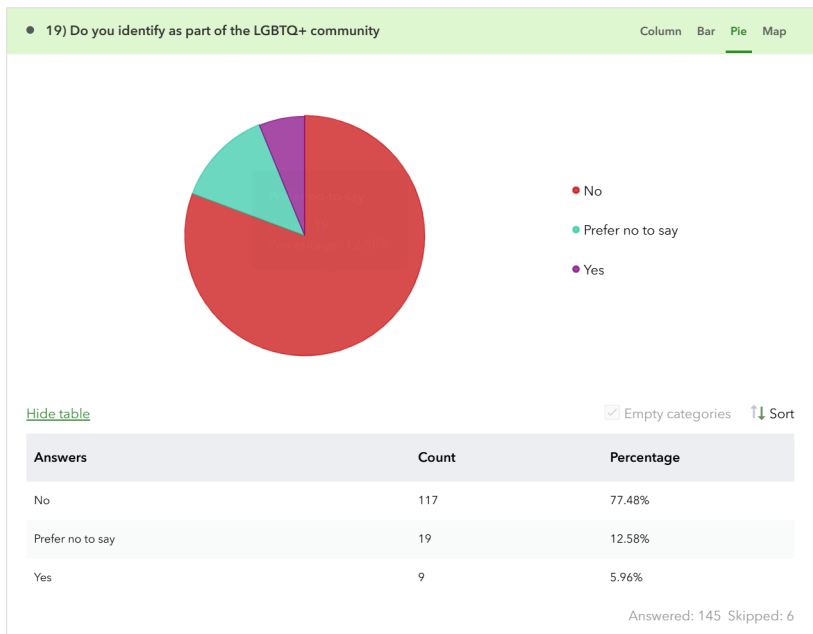
Response	Count
Hotels or streets	1
Hotel ( Middleton Motel) Jan8, 2024	1

Answered: 148 Skipped: 3

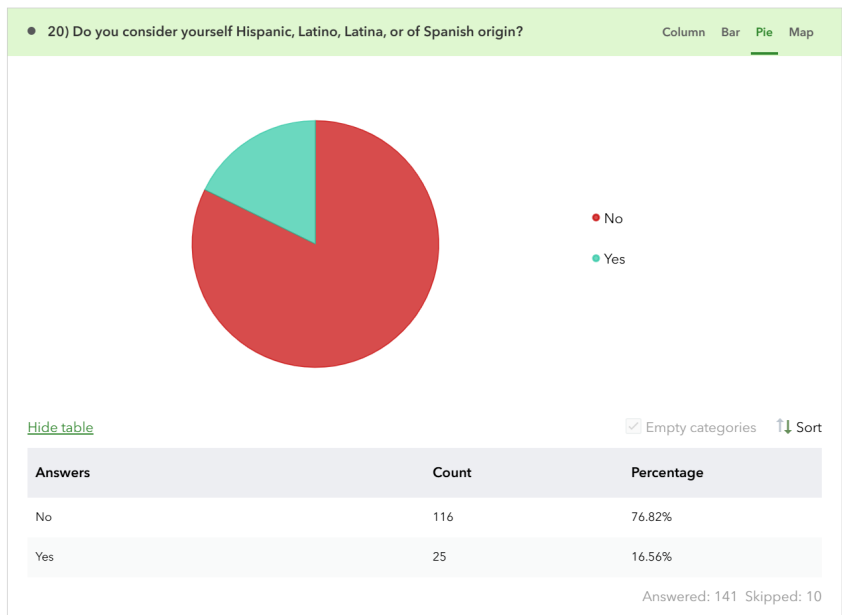
Q18) What is your gender



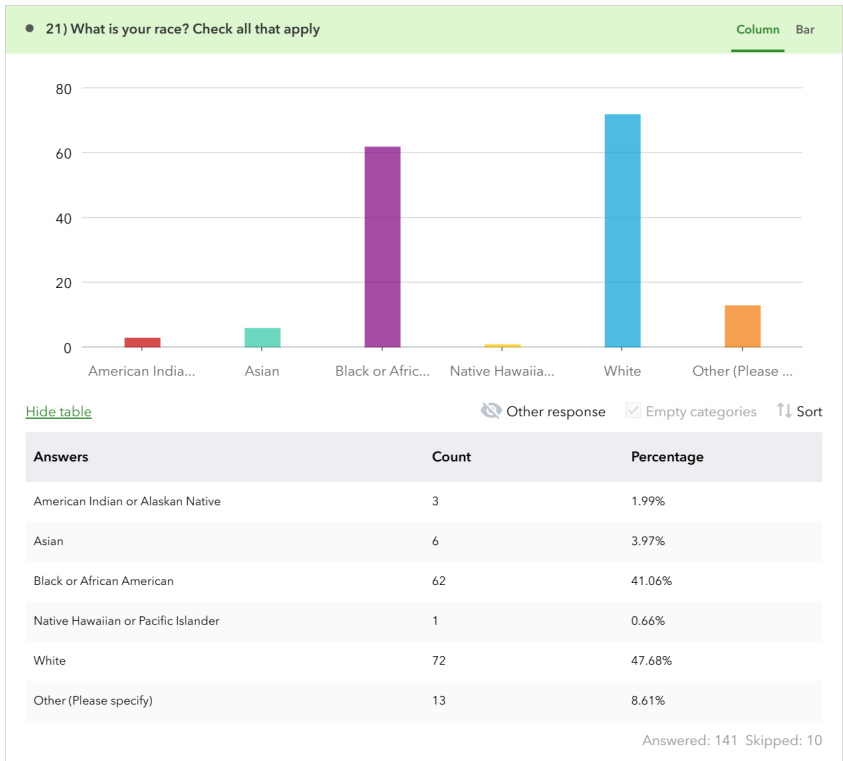
Q19) Do you identify as part of the LGBTQ+ community



Q20) Do you consider yourself Hispanic, Latino, Latina, or of Spanish origin?



Q21) What is your race? Check all that apply



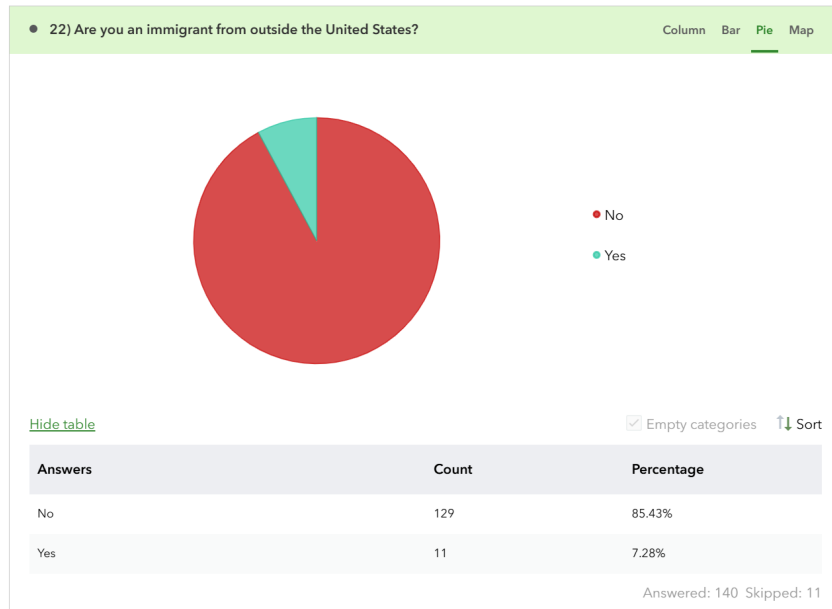
Other Response:

Hide table Other response Empty categories Sort

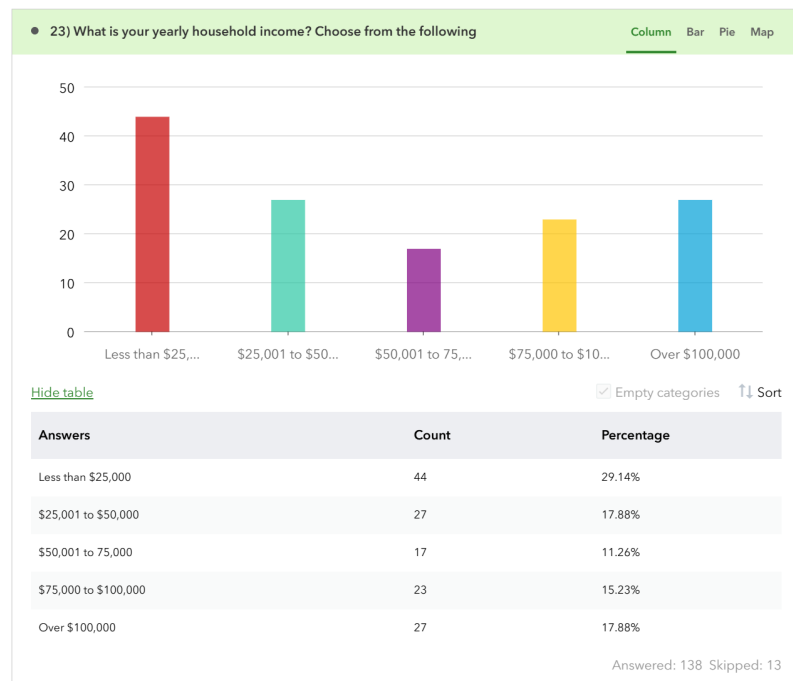
Response	Count
Human	2
Why do you ask?	1
Tejano	1
Spanish	1
Should not matter	1
Middle Eastern	1
Mexican American	1
It's no longer safe to answer these types of questions so please stop asking	1
I do not like categorizing people. I am f mixed heritage but i do not use it. I hate these type of questions.	1
Hispano	1
Hispanic	1

Answered: 141 Skipped: 10

Q22) Are you an immigrant from outside the United States?



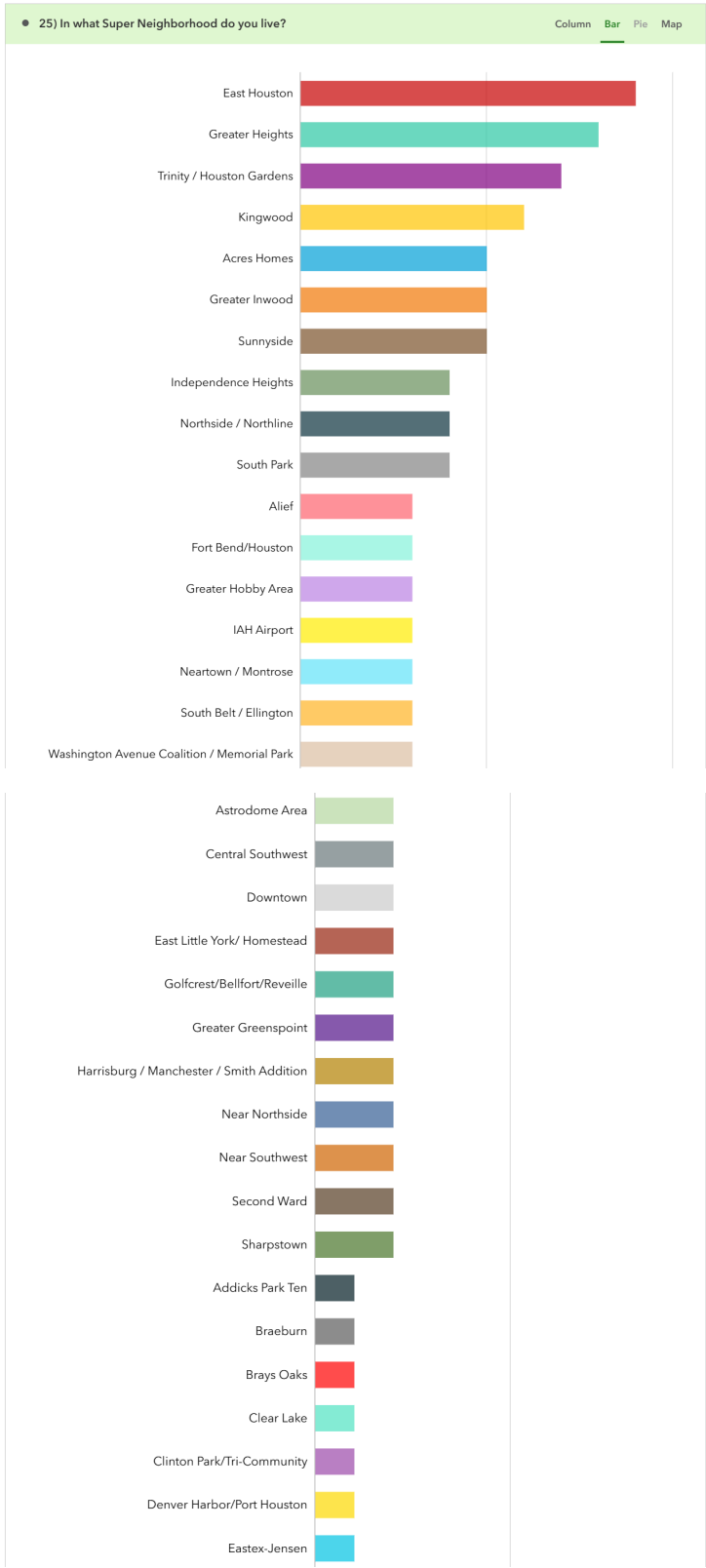
Q23) What is your yearly household income? Choose from the following



Q24) Zip Code Question (Data is not of a numerical value) – Question and Response Removed



Q25) In what Super Neighborhood do you live?

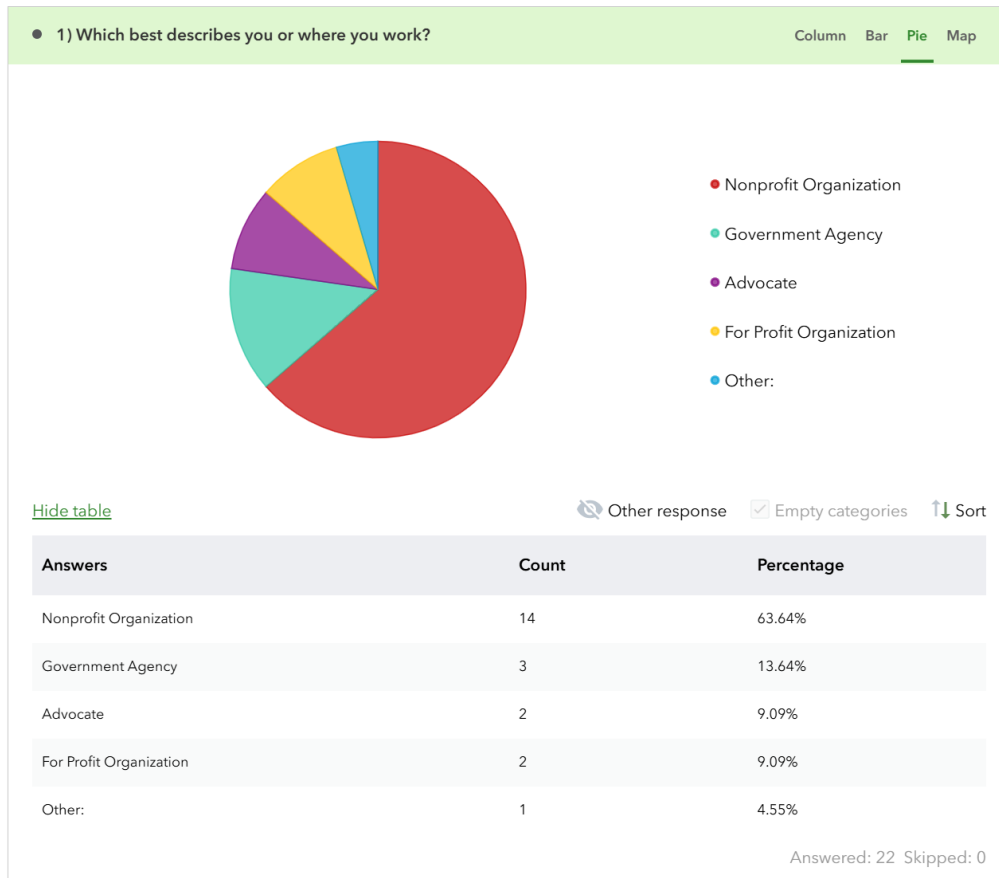




Q26) Word Cloud Format (Does not provide clear data for analysis) – Question and Response Removed

## Agency Survey for Disaster Recovery – 2024 Derecho and Hurricane Beryl

Q1) Which best describes you or where you work?



Other Response:

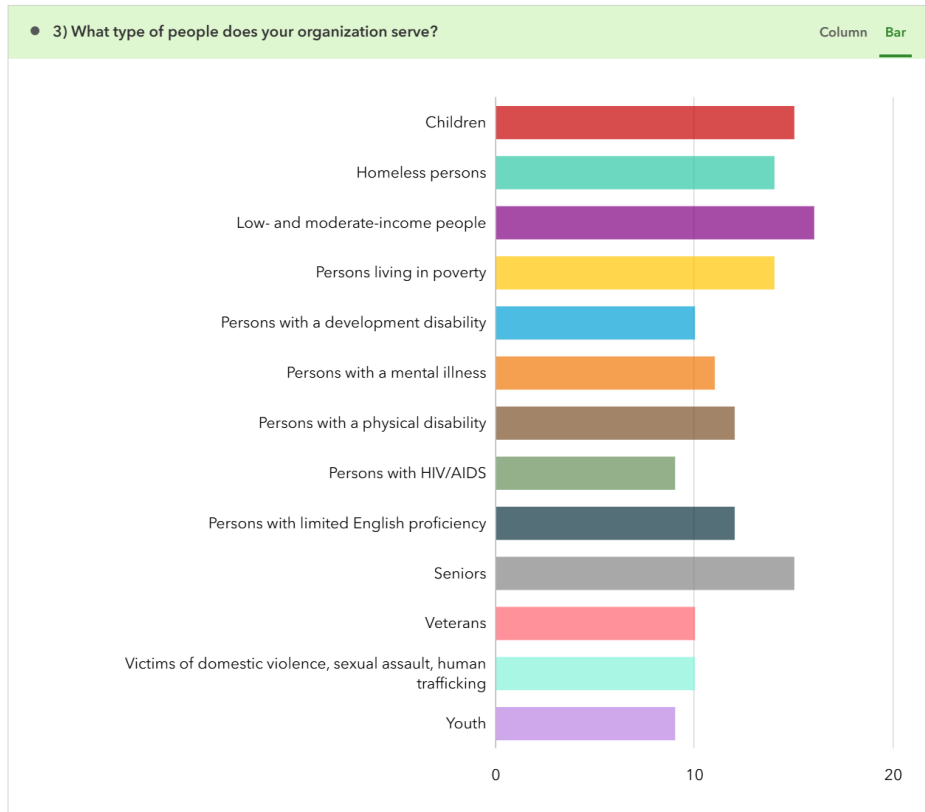
[Hide table](#) ☒ Other response ☒ Empty categories

Response	Count
Affordable MF Housing Developer	1

Answered: 22 Skipped: 0

Q2) Zip Code Question (Data is not in a numerical value) – Question and Responses Removed.

### Q3) What type of people does your organization serve?

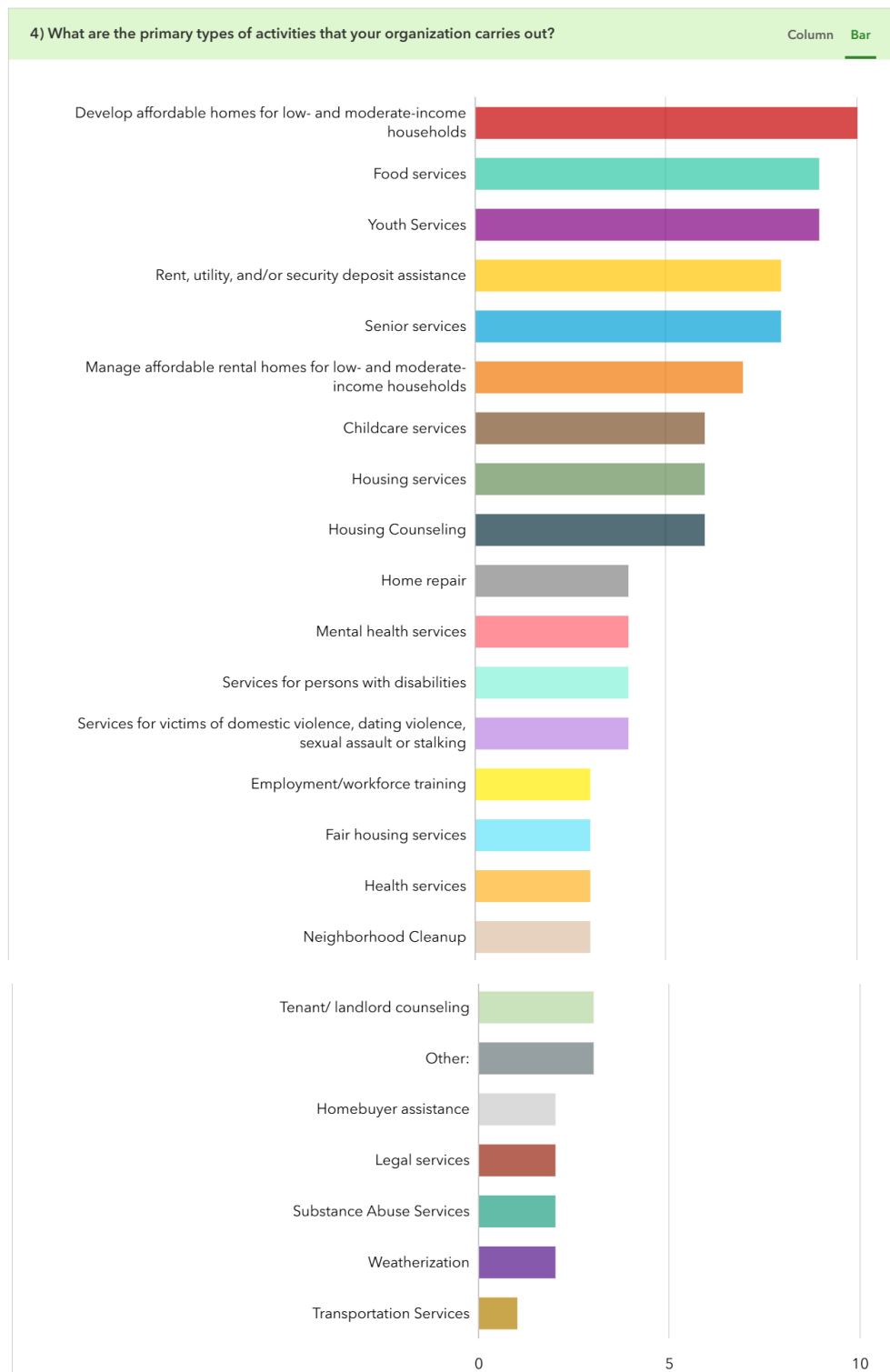


Answers	Count	Percentage
Children	15	68.18%
Homeless persons	14	63.64%
Low- and moderate-income people	16	72.73%
Persons living in poverty	14	63.64%
Persons with a development disability	10	45.45%
Persons with a mental illness	11	50%
Persons with a physical disability	12	54.55%
Persons with HIV/AIDS	9	40.91%
Persons with limited English proficiency	12	54.55%
Seniors	15	68.18%
Veterans	10	45.45%

Victims of domestic violence, sexual assault, human trafficking	10	45.45%
Youth	9	40.91%

Answered: 22 Skipped: 0

#### Q4) What are the primary types of activities that your organization carries out?



[Hide table](#)

Other response



Empty categories



Sort

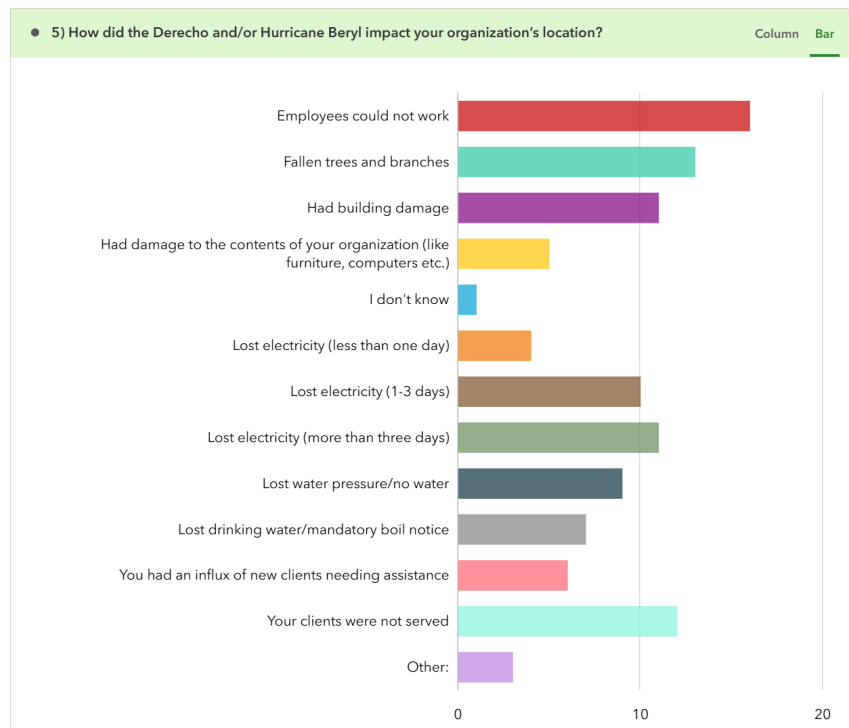
Answers	Count	Percentage
Develop affordable homes for low- and moderate-income households	10	45.45%
Food services	9	40.91%
Youth Services	9	40.91%
Rent, utility, and/or security deposit assistance	8	36.36%
Senior services	8	36.36%
Manage affordable rental homes for low- and moderate-income households	7	31.82%
Childcare services	6	27.27%
Housing services	6	27.27%
Housing Counseling	6	27.27%
Home repair	4	18.18%

## Other Response:

Response	Count
Pastoral services dealing with death, dying, and trauma; Other spiritual and humanitarian efforts	1
Drop-in day center	1
Coordinate the following services to all residents: health, workforce/job training, mental health, food insecurity, fitness, arts and culture, education, and more.	1

Answered: 22 Skipped: 0

## Q5) How did the Derecho and/or Hurricane Beryl impact your organization's location?



[Hide table](#)

[Other response](#)

☒ Empty categories

[Sort](#)

Answers	Count	Percentage
Employees could not work	16	72.73%
Fallen trees and branches	13	59.09%
Had building damage	11	50%
Had damage to the contents of your organization (like furniture, computers etc.)	5	22.73%
I don't know	1	4.55%
Lost electricity (less than one day)	4	18.18%
Lost electricity (1-3 days)	10	45.45%
Lost electricity (more than three days)	11	50%
Lost water pressure/no water	9	40.91%
Lost drinking water/mandatory boil notice	7	31.82%
You had an influx of new clients needing assistance	6	27.27%

## Other Response:

[Hide table](#)

[Other response](#)

☒ Empty categories

[Sort](#)

Response	Count
Unable to hold services for over 8 months on property.	1
Office location closed due to rising water	1
Many of my patients are pregnant diabetic women. They lost power and couldn't store their insulin. They couldn't prepare or purchase meals appropriate for diabetics.	1

Answered: 22 Skipped: 0

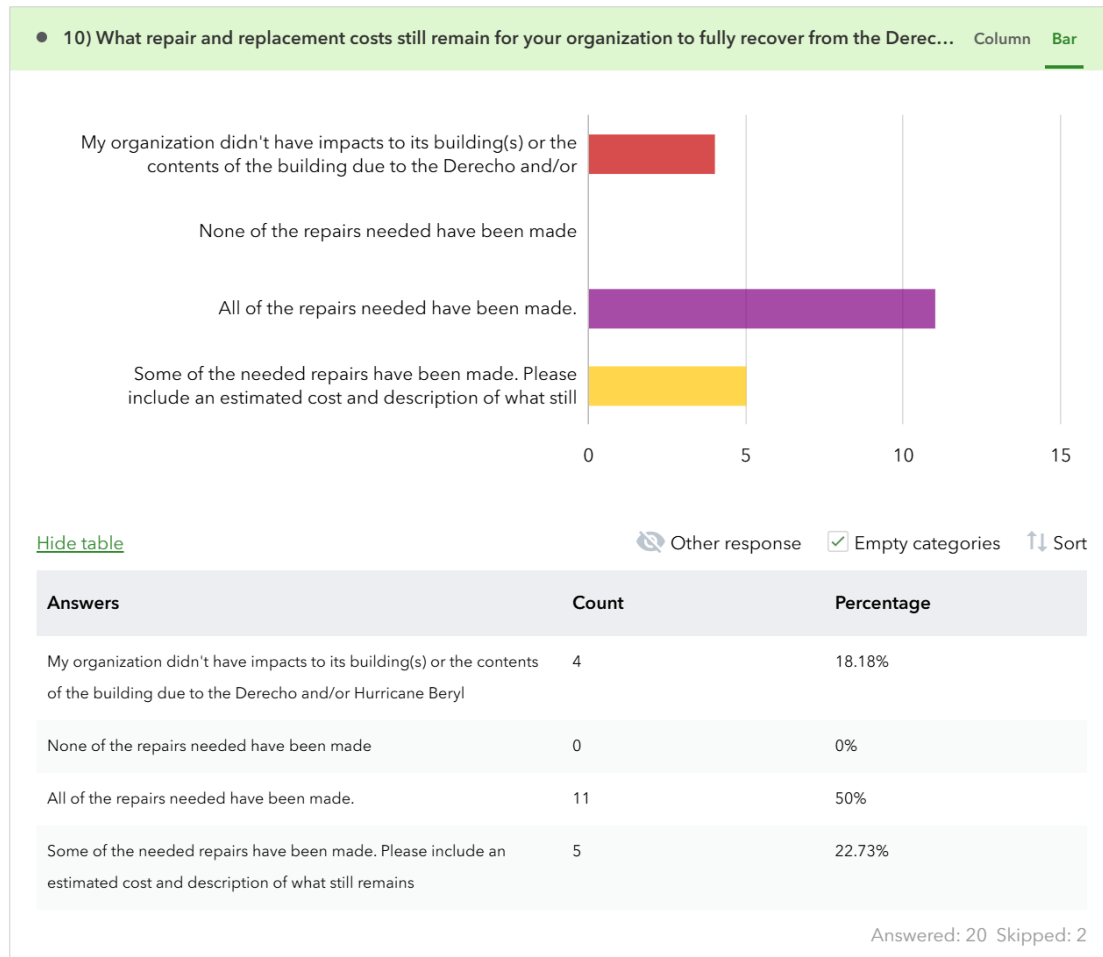
Q6) Inconclusive Data – Question and Response Removed

Q7) Inconclusive Data – Question and Response Removed

Q8) Inconclusive Data – Question and Response Removed

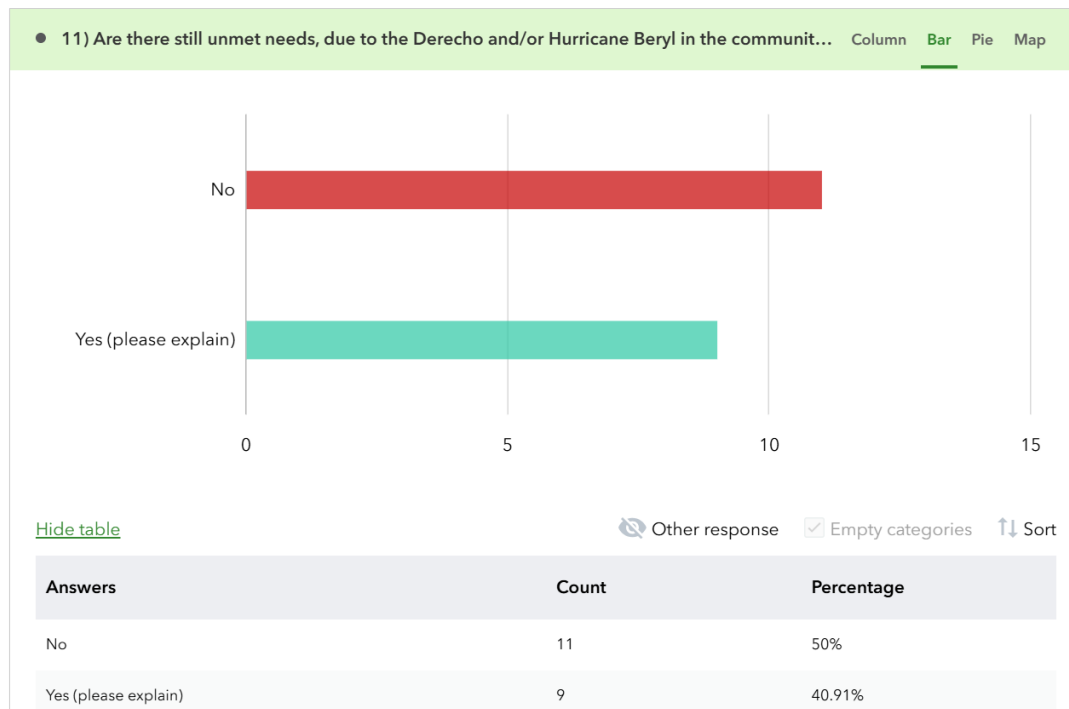
Q9) Inconclusive Data – Question and Response Removed

Q10) What repair and replacement costs still remain for your organization to fully recover from the Derecho and/or Hurricane Beryl?





Q11) Are there still unmet needs, due to the Derecho and/or Hurricane Beryl in the community your organization serves?



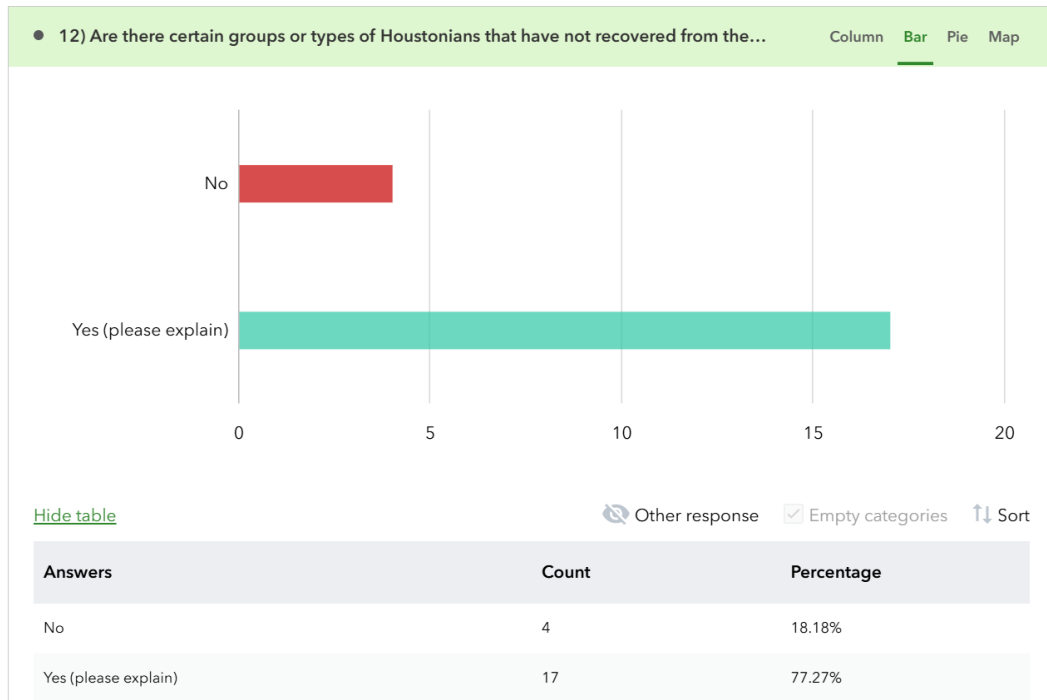
### Other Responses:

[Hide table](#) ☒ Other response ☒ Empty categories

Response	Count
Some Houstonians (particularly renters and vulnerable seniors) had their housing and/or vehicles damaged by the storm. In addition, Houstonians are burdened by trying to ensure a survival plan in the event that there is another mass power outage.	2
Yes, our organization serves low income communities and while our properties may have been repaired, there are still those with homes that are still damaged from the storms.	1
We need more Housing. We got a huge influx individuals who need a place to stay after this natural disaster	1
Unable to serve vacation bible school, limited in food community meals	1
Still consistent street flooding due to improper street drainage	1
Some clients still have some minor housing and other repairs	1
Housing & Shelter Families still living in damaged homes, unsafe conditions, or temporary shelters. Downed trees or debris still blocking access or posing risks. Unmet needs for gas, food, and transportation.	1
Fencing is not complete	1

Answered: 20 Skipped: 2

Q12) Are there certain groups or types of Houstonians that have not recovered from the Derecho and/or Hurricane Beryl?



Other Responses:

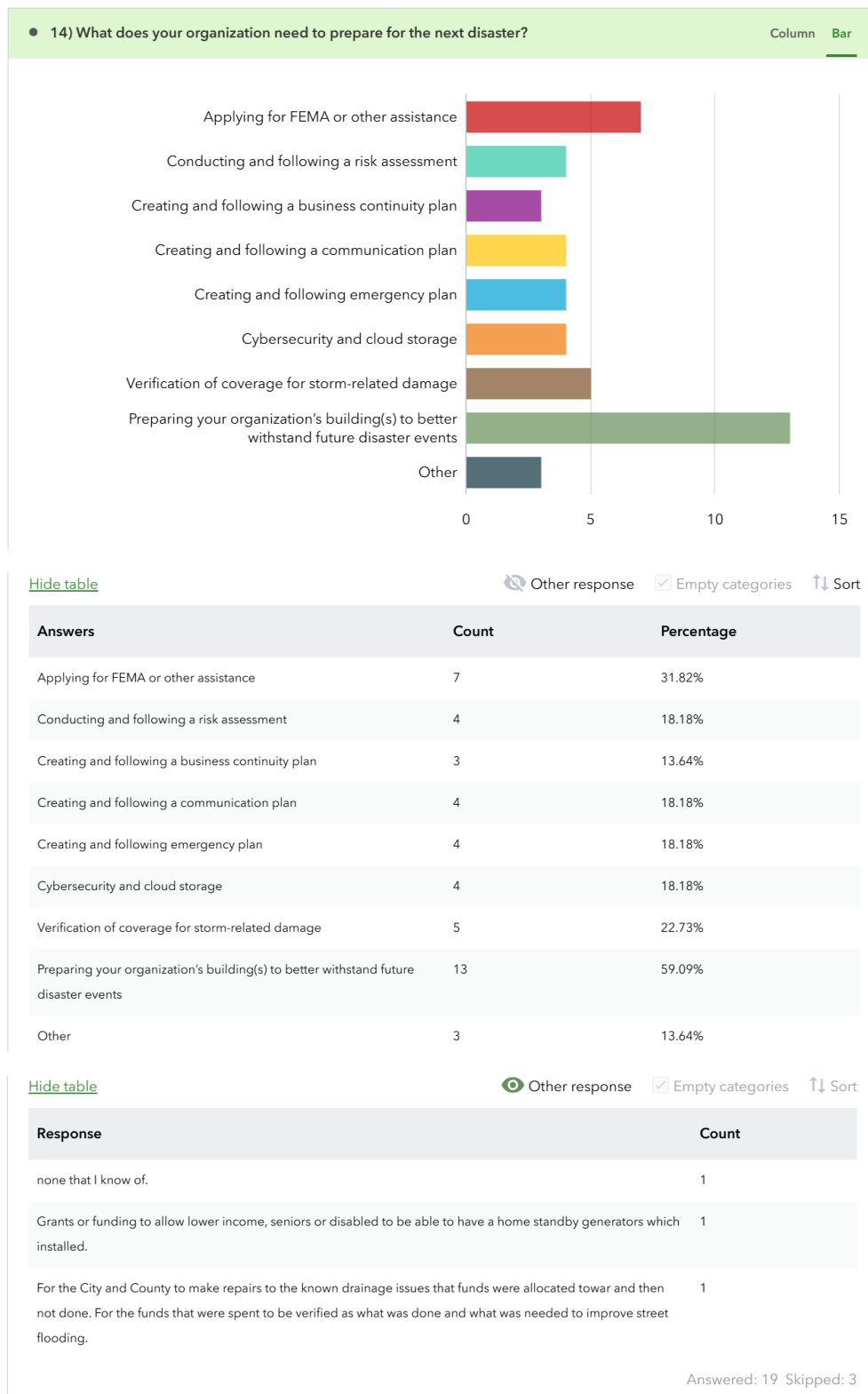
[Hide table](#) [Other response](#) ☒ Empty categories [Sort](#)

Response	Count
Some Houstonians (particularly renters and vulnerable seniors) had their housing and/or vehicles damaged by the storm. In addition, Houstonians are burdened by trying to ensure a survival plan in the event that there is another mass power outage.	2
Yes, many low income individuals/households are still struggling with damage from the storms that they cannot pay to repair.	1
Very low income	1
Unhoused, and low income families are groups we are seeing who have still not recovered. We need to build more for these individuals, it is heartbreaking to tell them we are 100% full	1
Those for whom insurance did not cover and loss of food resulting in additional cost for those with lower household incomes	1
Residents in TIRZ	1
places of worship or churches	1
Most still do not have standby generators which in result they will be losing power during the next natural disaster(s)	1

Answered: 21 Skipped: 1

Q13) Word Cloud (Does not provide clearer data for analysis) – Question and Response Removed

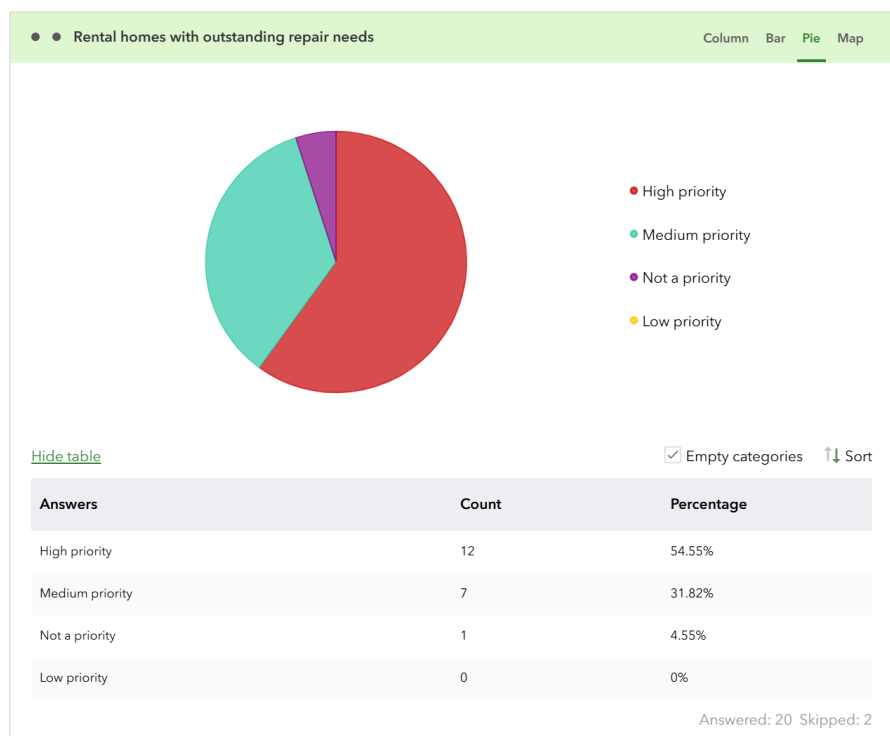
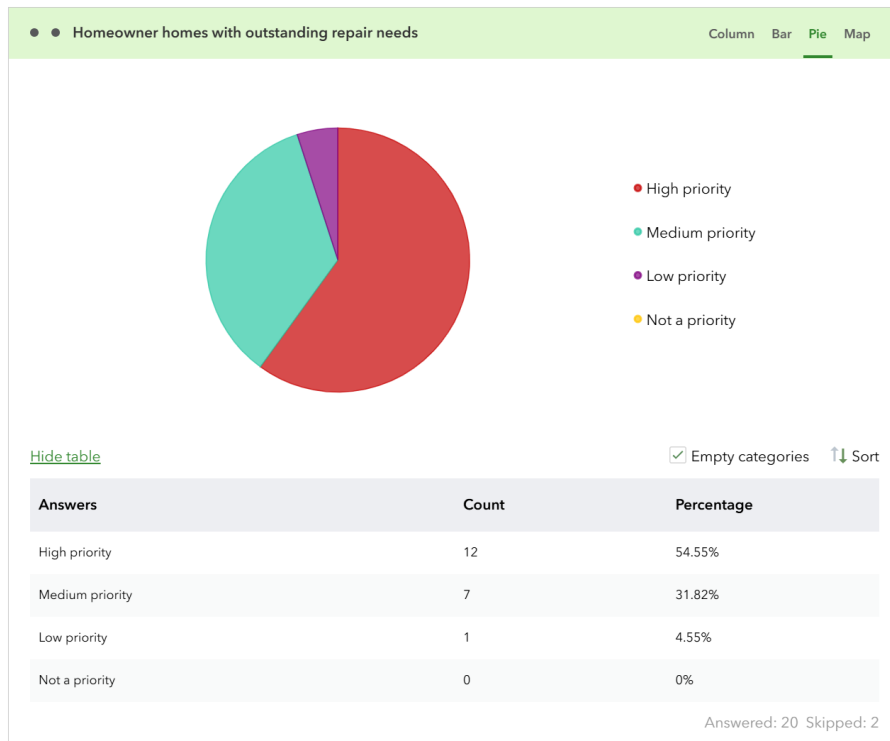
## Q14) What does your organization need to prepare for the next disaster?



## Q15) Word Cloud (Does not provide clearer data for analysis) – Question and Response Removed

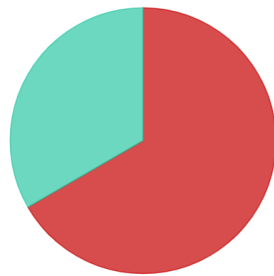
Q16) Word Cloud (Does not provide clearer data for analysis) – Question and Response Removed

Q17) Please rate the funding priority for each of the following populations that could be targeted through the \$314.6 million federal grant to assist Houstonians impacted by the Derecho and/or Hurricane Beryl



● ● Community facilities with outstanding repair needs

Column Bar Pie Map



- High priority
- Medium priority
- Low priority
- Not a priority

[Hide table](#)

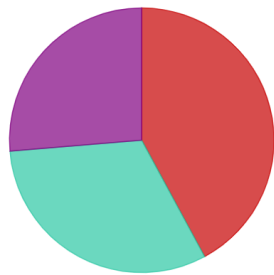
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	14	63.64%
Medium priority	7	31.82%
Low priority	0	0%
Not a priority	0	0%

Answered: 21 Skipped: 1

● ● Weatherize homeowner homes

Column Bar Pie Map



- Medium priority
- High priority
- Low priority
- Not a priority

[Hide table](#)

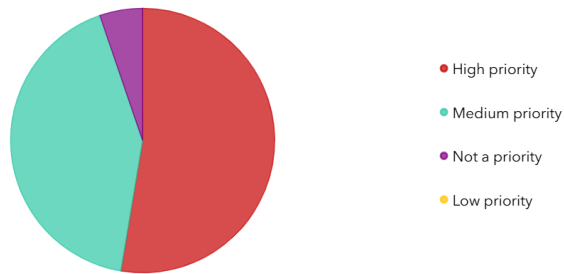
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
Medium priority	8	36.36%
High priority	6	27.27%
Low priority	5	22.73%
Not a priority	0	0%

Answered: 19 Skipped: 3

● ● Weatherize rental homes

Column Bar **Pie** Map



[Hide table](#)

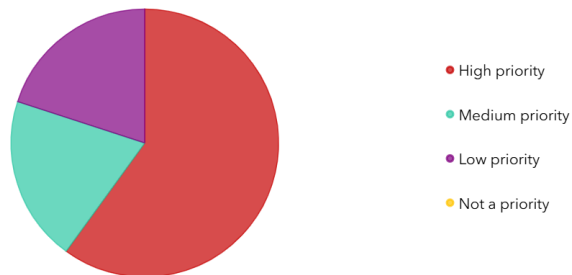
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	10	45.45%
Medium priority	8	36.36%
Not a priority	1	4.55%
Low priority	0	0%

Answered: 19 Skipped: 3

● ● Better equip community facilities to offer

Column Bar **Pie** Map



[Hide table](#)

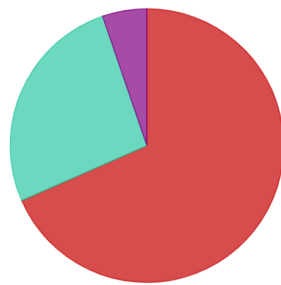
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	12	54.55%
Medium priority	4	18.18%
Low priority	4	18.18%
Not a priority	0	0%

Answered: 20 Skipped: 2

Resources for Houstonians during disaster events

Column Bar **Pie** Map



- High priority
- Medium priority
- Low priority
- Not a priority

[Hide table](#)

☒ Empty categories [Sort](#)

Answers	Count	Percentage
High priority	13	59.09%
Medium priority	5	22.73%
Low priority	1	4.55%
Not a priority	0	0%

Answered: 19 Skipped: 3

Better equipped city infrastructure for future disaster

Column Bar **Pie** Map



- High priority
- Medium priority
- Low priority
- Not a priority

[Hide table](#)

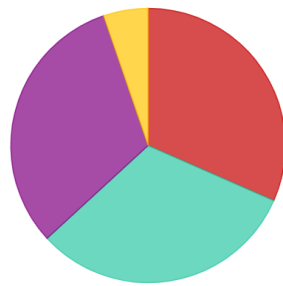
☒ Empty categories [Sort](#)

Answers	Count	Percentage
High priority	13	59.09%
Medium priority	7	31.82%
Low priority	0	0%
Not a priority	0	0%

Answered: 20 Skipped: 2

● ● Provide low-and moderate-income Houstonians with workforce training

Column Bar **Pie** Map



- High priority
- Medium priority
- Low priority
- Not a priority

[Hide table](#)

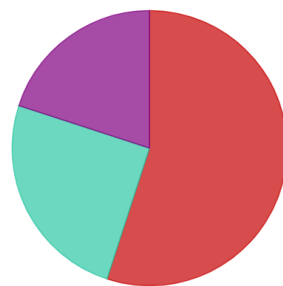
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	6	27.27%
Medium priority	6	27.27%
Low priority	6	27.27%
Not a priority	1	4.55%

Answered: 19 Skipped: 3

● ● Provide low-and moderate-income Houstonians with social services

Column Bar **Pie** Map



- High priority
- Medium priority
- Low priority
- Not a priority

[Hide table](#)

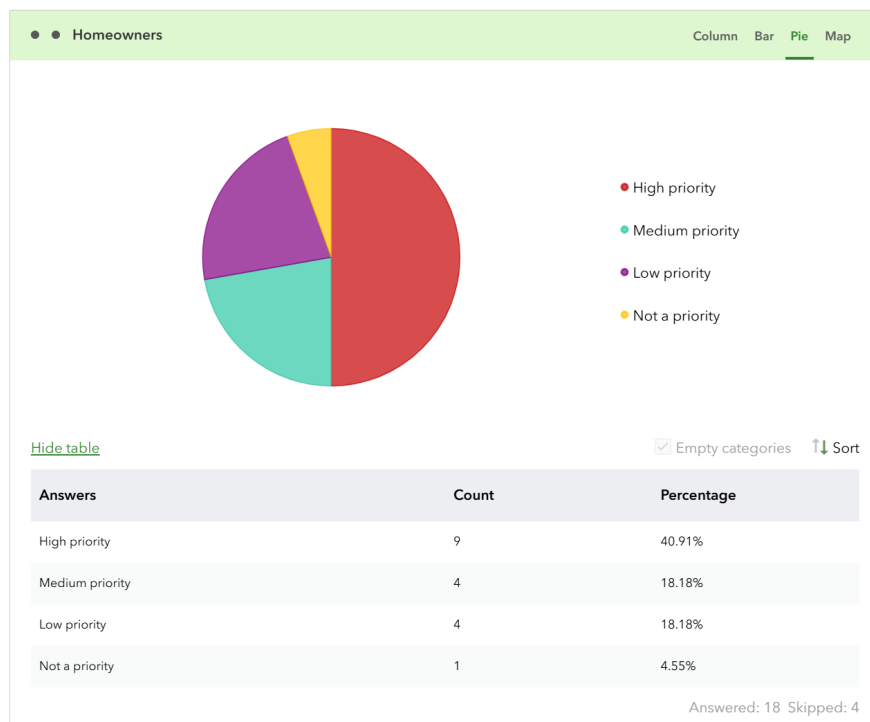
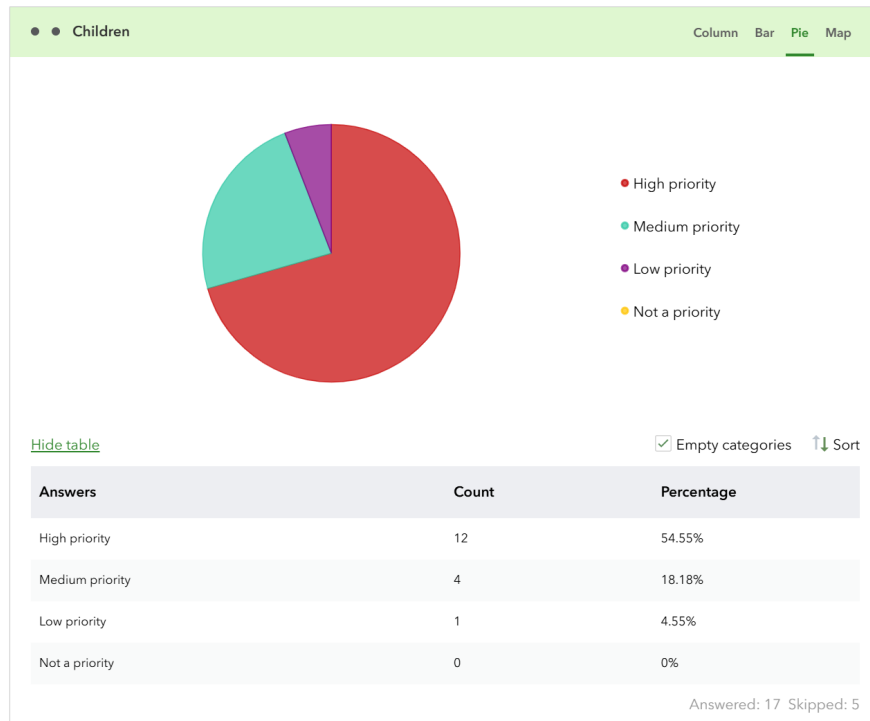
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	11	50%
Medium priority	5	22.73%
Low priority	4	18.18%
Not a priority	0	0%

Answered: 20 Skipped: 2

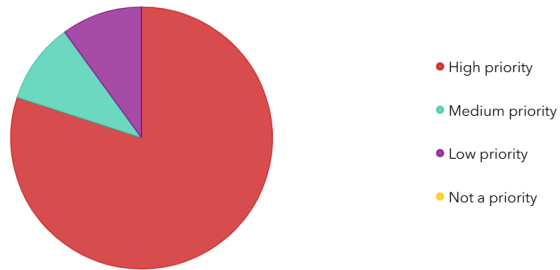


Q18) Please rate the funding priority for the following potential populations that should be targeted and served with the \$314.6 million federal grant to help serve Houstonians impacted by the Derecho and/or Hurricane Beryl



● ● Homeless/mental illness persons

Column Bar Pie Map



[Hide table](#)

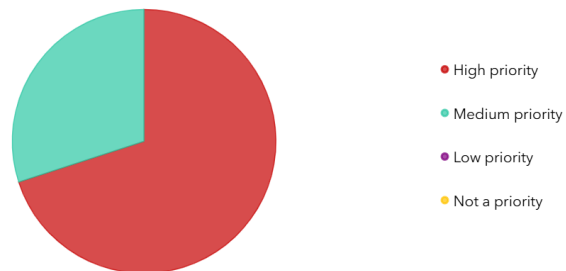
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	16	72.73%
Medium priority	2	9.09%
Low priority	2	9.09%
Not a priority	0	0%

Answered: 20 Skipped: 2

● ● Low- and moderate- income people

Column Bar Pie Map



[Hide table](#)

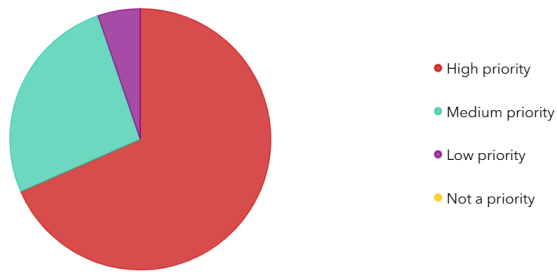
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	14	63.64%
Medium priority	6	27.27%
Low priority	0	0%
Not a priority	0	0%

Answered: 20 Skipped: 2

● ● People with a development disability

Column Bar Pie Map



[Hide table](#)

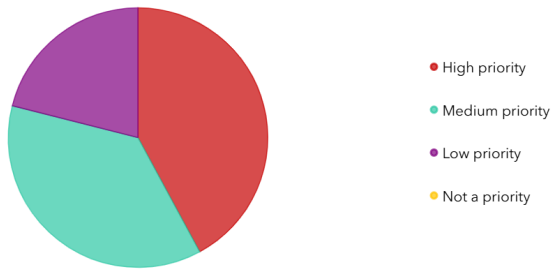
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	13	59.09%
Medium priority	5	22.73%
Low priority	1	4.55%
Not a priority	0	0%

Answered: 19 Skipped: 3

● ● People with HIV/AIDS

Column Bar Pie Map



[Hide table](#)

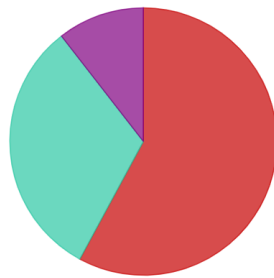
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	8	36.36%
Medium priority	7	31.82%
Low priority	4	18.18%
Not a priority	0	0%

Answered: 19 Skipped: 3

● ● People with limited English proficiency

Column Bar Pie Map



- High priority
- Medium priority
- Low priority
- Not a priority

[Hide table](#)

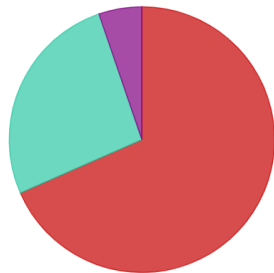
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	11	50%
Medium priority	6	27.27%
Low priority	2	9.09%
Not a priority	0	0%

Answered: 19 Skipped: 3

● ● People with a physical disability

Column Bar Pie Map



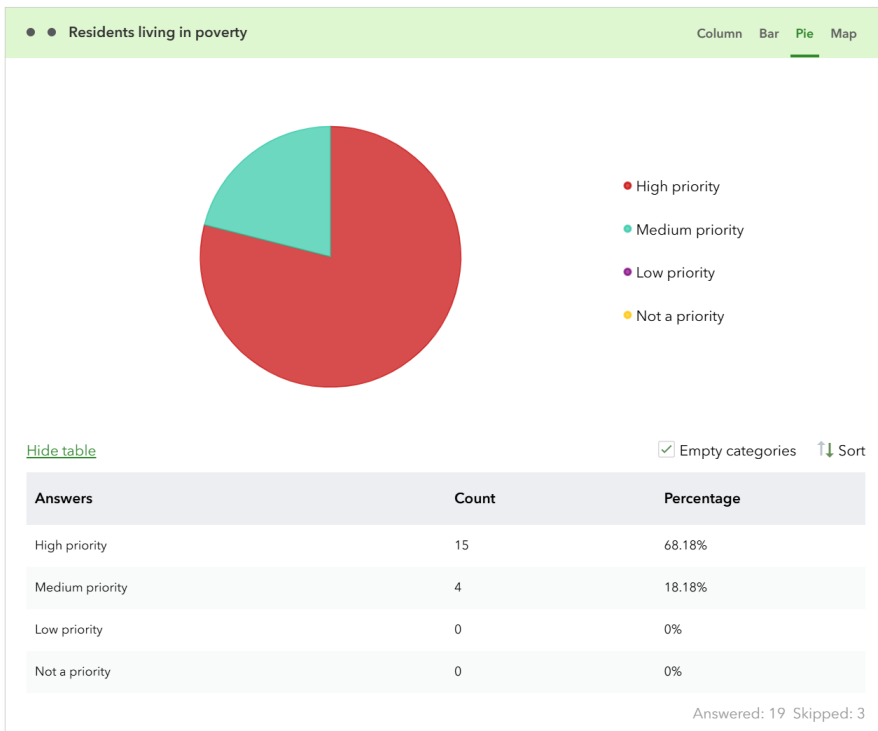
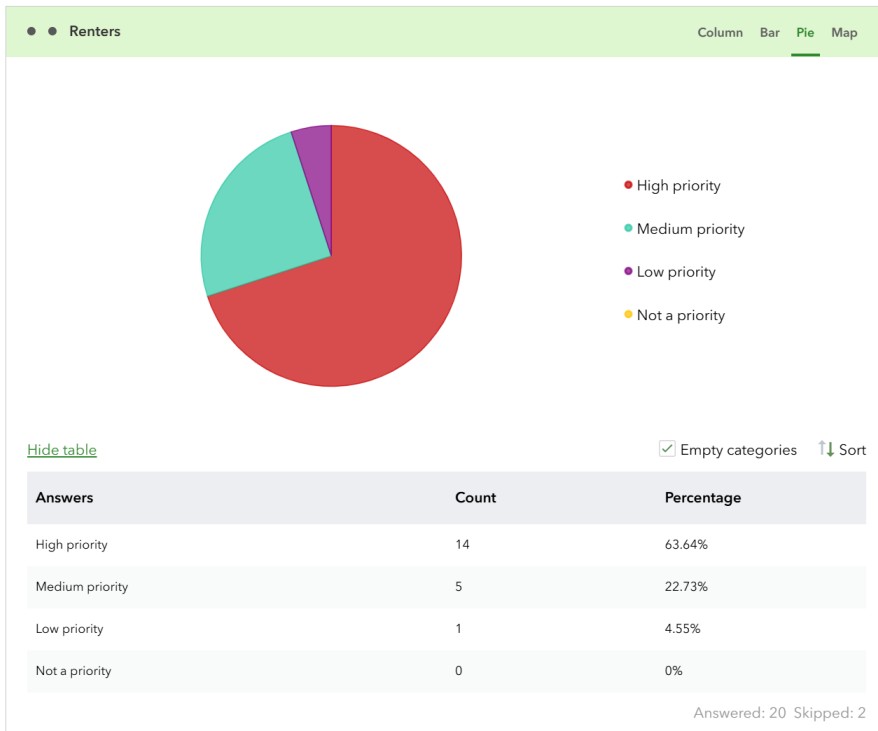
- High priority
- Medium priority
- Low priority
- Not a priority

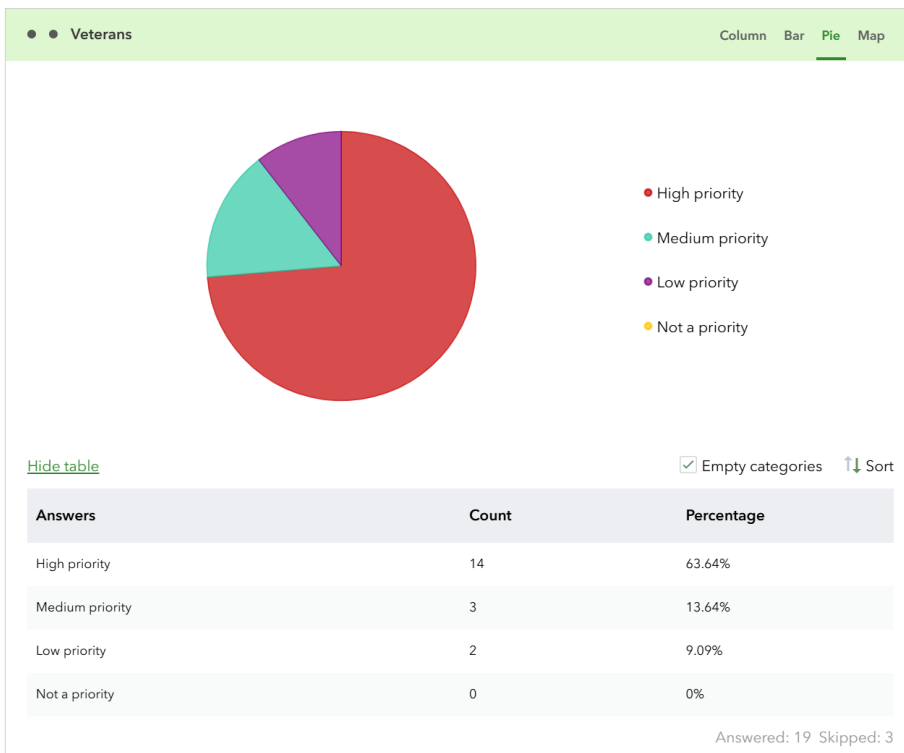
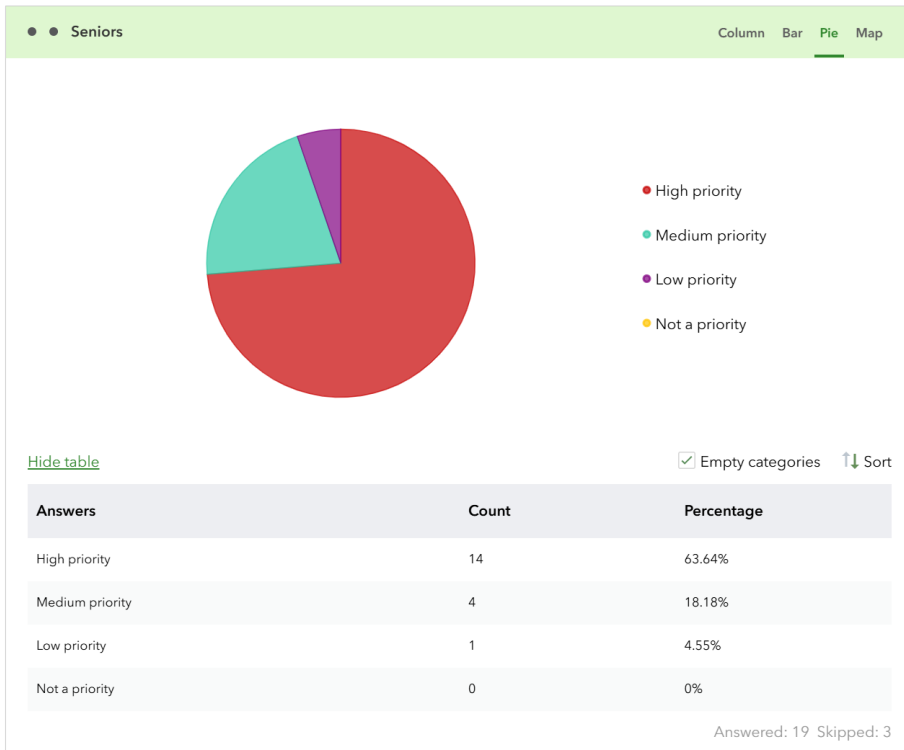
[Hide table](#)

☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	13	59.09%
Medium priority	5	22.73%
Low priority	1	4.55%
Not a priority	0	0%

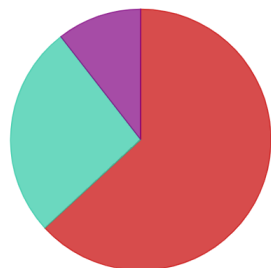
Answered: 19 Skipped: 3





● ● Victims of domestic violence

Column Bar Pie Map



- High priority
- Medium priority
- Low priority
- Not a priority

[Hide table](#)

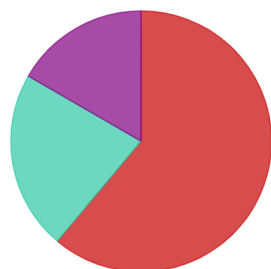
☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	12	54.55%
Medium priority	5	22.73%
Low priority	2	9.09%
Not a priority	0	0%

Answered: 19 Skipped: 3

● ● Youth

Column Bar Pie Map



- High priority
- Medium priority
- Low priority
- Not a priority

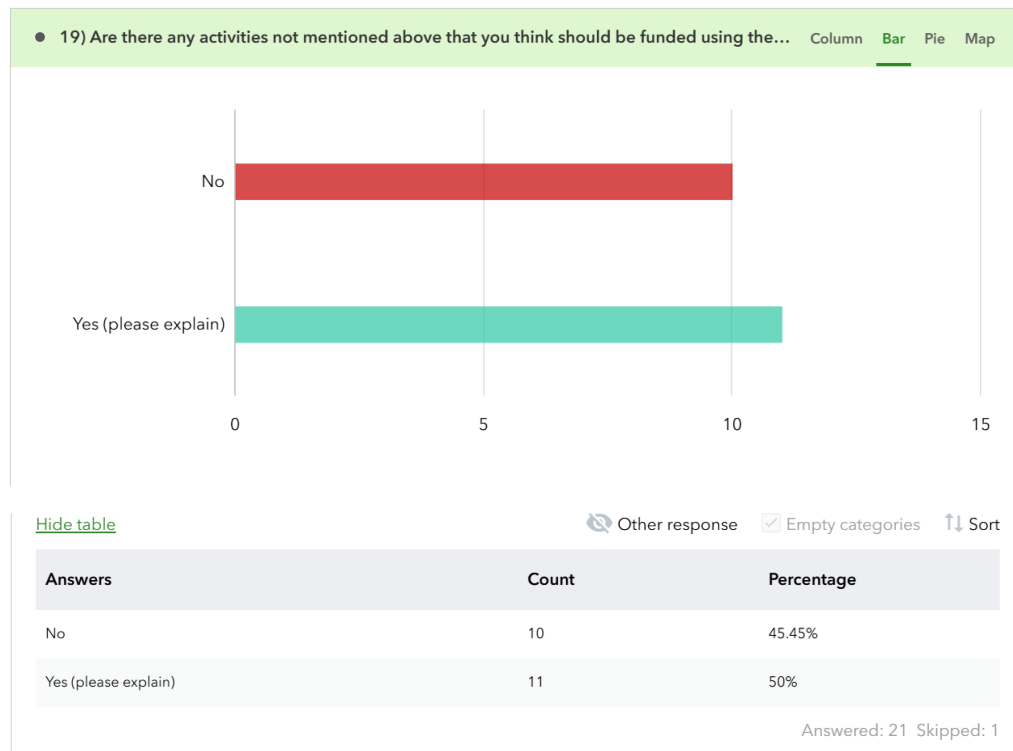
[Hide table](#)

☒ Empty categories [↑↓ Sort](#)

Answers	Count	Percentage
High priority	11	50%
Medium priority	4	18.18%
Low priority	3	13.64%
Not a priority	0	0%

Answered: 18 Skipped: 4

Q19) Are there any activities not mentioned above that you think should be funded using the Derecho and/or Hurricane Beryl disaster recovery funding?



[Hide table](#) ☒ Other response ☒ Empty categories [Sort](#)

Response	Count
DR funding NEEDS to be in part allocated to multifamily housing for low to moderate income bands. Housing has always been a MAJOR component of disaster recovery as it allows for long term recovery and revitalization.	2
Those that experience many power outages.	1
Small businesses who actually have brick and mortar locations that support the community and our tax base	1
Public	1
Places of worship that provide needs to those communities	1
More affordable housing	1
Improved drainage, regulations that protect the environment and reduce global warming	1
Disaster Recovery funding should be allocated to multifamily housing for low to moderate income bands.	1
Capital Gap Funding for completion of apartment complex servicing moderate to very low income residents, that includes Pre-K (K-3 & K-4 yr. olds) educational facilities offered free of charge to the residents of the Multifamily component.	1
Affordable resilient housing	1

Answered: 21 Skipped: 1

Q20) Word Cloud (Does not provide clearer data for analysis) – Question and Response Removed



## Appendix 6: Hazard Mitigation Plan

## Mitigation Needs Assessment

As required by HUD, the City of Houston developed a mitigation needs assessment based in part on the *City of Houston Hazard Mitigation Plan* (<https://www.houstontx.gov/2023-2028-Hazard-Mitigation-plan.pdf>). To develop the mitigation needs assessment, the City reviewed: the FEMA Local Mitigation Plan Handbook, Department of Homeland Security (DHS) Office of Infrastructure Protection, FEMA Lifelines Implementation Toolkit (2023), resources about wildfires from the U.S. Forest Service, the National Interagency Coordination Center (NICC), the CDBG-MIT Action Plan, and HUD's CPD mapping tool. This assessment addresses current and future risks, including hazards, vulnerability, and impacts of disasters and identifies appropriate mitigation actions to reduce the highest risks that Houston faces. This mitigation needs assessment informs the use of the 15% CDBG-DR mitigation set-aside and helps to build resilience and mitigation measures into recovery programs and projects.

### Overview of the City of Houston Hazard Mitigation Plan

The goal of the *Hazard Mitigation Plan* is to minimize or eliminate long-term risks to human life, property, operations, and the environment from known hazards by identifying risks and implementing cost-effective hazard mitigation actions. The planning process is an opportunity for the City of Houston, stakeholders, and the general public to evaluate and develop successful hazard mitigation actions to reduce future risk of loss of life and damage to property resulting from a disaster in the City of Houston.

The Mission Statement of the *Hazard Mitigation Plan* is, "Maintaining a secure and sustainable future through the revision and development of targeted hazard mitigation actions to protect life and property." Hazard mitigation activities are an investment in a community's safety and sustainability. It is widely accepted that the most effective hazard mitigation measures are implemented at the local government level, where decisions on the regulation and control of development are ultimately made. Throughout the planning process, and in partnership with the Texas Division of Emergency Management, members of community groups, local businesses, neighboring jurisdictions, schools and universities, hospitals, consulates, non-profit organizations, and local media organizations were invited to participate in the plan's development. Elements of the Hazard Mitigation Plan have been used to inform this assessment, including hazard identification, risk assessment, and the identification of potential projects.

### Hazard Analysis and Lifeline Assessment

Upon a review of the full range of natural hazards suggested under the FEMA planning guidance, the City of Houston identified 12 hazard types, shown in Table 24 (Hazard Descriptions) below. These 11 natural hazards and 1 quasi-technological hazard (dam failure) have created or have the potential to create significant losses to justify inclusion in the *City of Houston Hazard Mitigation Plan*.

Table 19: Hazard Descriptions

HAZARD	DESCRIPTION
<b>ATMOSPHERIC</b>	
<b>Extreme Heat</b>	Extreme heat is the condition whereby temperatures hover ten degrees or more above the average high temperature in a region for an extended period of time.
<b>Hail</b>	Hailstorms are a potentially damaging outgrowth of severe thunderstorms. Early in the developmental stages of a hailstorm, ice crystals form within a low-pressure front due to the rapid rising of warm air into the upper atmosphere and subsequent cooling of the air mass.
<b>Hurricane / Tropical Storm</b>	A hurricane is an intense tropical weather system of strong thunderstorms with a well-defined surface circulation and maximum sustained winds of 74 mph or higher.
<b>Lightning</b>	Lightning is a sudden electrostatic discharge that occurs during an electrical storm. This discharge occurs between electrically charged regions of a cloud, between two clouds, or between a cloud and the ground.
<b>Thunderstorm Wind</b>	A thunderstorm occurs when an observer hears thunder. Radar observers use the intensity of the radar echo to distinguish between rain showers and thunderstorms. Lightning detection networks routinely track cloud-to-ground flashes, and therefore thunderstorms.
<b>Tornado</b>	A tornado is a violently rotating column of air that has contact with the ground and is often visible as a funnel cloud. Its vortex rotates cyclonically with wind speeds ranging from as low as 40 mph to as high as 300 mph. The destruction caused by tornadoes ranges from light to catastrophic, depending on the location, intensity, size, and duration of the storm.
<b>Winter Storm</b>	Severe winter storms may include snow, sleet, freezing rain, or a mix of these wintry forms of precipitation. Blizzards, the most dangerous of all winter storms, combine low temperatures, heavy snowfall, and winds of at least 35 miles per hour, reducing visibility to only a few yards. Ice storms occur when moisture falls and freezes immediately upon impact on trees, power lines, communication towers, structures, roads, and other hard surfaces. Winter storms and ice storms can down trees, cause widespread power outages, damage property, and cause fatalities and injuries to human life.
<b>HYDROLOGIC</b>	
<b>Drought</b>	A prolonged period of less than normal precipitation such that the lack of water causes a serious hydrologic imbalance. Common effects of drought include crop failure, water supply shortages, and fish and wildlife mortality.

HAZARD	DESCRIPTION
<b>Flood</b>	The accumulation of water within a body of water, which results in the overflow of excess water onto adjacent lands, usually floodplains. The floodplain is the land adjoining the channel of a river, stream, ocean, lake, or other watercourse or water body that is susceptible to flooding. Most floods fall into the following three categories: riverine flooding, coastal flooding, and shallow flooding.
<b>OTHER</b>	
<b>Expansive Soils</b>	Expansive soils are soils and soft rock that tend to swell or shrink due to changes in moisture content. Changes in soil volume present a hazard primarily to structures built on top of expansive soils.
<b>Wildfire</b>	A wildfire is an uncontrolled fire burning in an area of vegetative fuels such as grasslands, brush, or woodlands. Heavier fuels with high continuity, steep slopes, high temperatures, low humidity, low rainfall, and high winds all work to increase the risk for people and property located within wildfire hazard areas or along the urban/wildland interface. Wildfires are part of the natural management of forest ecosystems, but most are caused by human factors.
<b>TECHNOLOGICAL</b>	
<b>Dam Failure</b>	Dam failure is the collapse, breach, or other failure of a dam structure resulting in downstream flooding. In the event of a failure, the energy of the water stored behind even a small dam is capable of causing loss of life and severe property damage if development exists downstream of the dam.

Table 19 Source: City of Houston Hazard Mitigation Plan Update 2023- Section 4: Risk Overview

The methodologies utilized to develop the Risk Assessment are a historical analysis and a statistical approach. Both methodologies provide an estimate of potential impact by using a common, systematic framework for evaluation.

Records retrieved from the National Centers for Environmental Information (NCEI) and National Oceanic and Atmospheric Administration (NOAA) were reported for the City of Houston. Remaining records identifying the occurrence of hazard events in the planning area and the maximum recorded magnitude of each event were also evaluated. The four general parameters that are described for each hazard in the Risk Assessment include frequency of return, approximate annualized losses, a description of general vulnerability, and a statement of the hazard's impact.

Frequency of return was calculated by dividing the number of events in the recorded time period for each hazard by the overall time period that the resource database was recording events. The frequency of return statements is defined in Table 20, and impact statements are defined in Table 26 below.

Table 20: Frequency of Return Statements

PROBABILITY	DESCRIPTION
Highly Likely	Event is probable in the next year.
Likely	Event is probable in the next three years.
Occasional	Event is probable in the next five years.
Unlikely	Event is probable in the next ten years.

Table 20 Source: City of Houston Hazard Mitigation Plan Update 2023 - Section 4: Risk Overview

Table 21: Impact Statements

POTENTIAL SEVERITY	DESCRIPTION
Substantial	Multiple deaths. Complete shutdown of facilities for 30 days or more. More than 50 percent of property destroyed or with major damage.
Major	Injuries and illnesses resulting in permanent disability. Complete shutdown of critical facilities for at least two weeks. More than 25 percent of property destroyed or with major damage.
Minor	Injuries and illnesses do not result in permanent disability. Complete shutdown of critical facilities for more than one week. More than 10 percent of property destroyed or with major damage.
Limited	Injuries and illnesses are treatable with first aid. Shutdown of critical facilities and services for 24 hours or less. Less than 10 percent of property destroyed or with major damage.

Table 21 Source: City of Houston Hazard Mitigation Plan Update 2023 - Section 4: Risk Overview

## Hazard Ranking

During the 2023 planning process the Planning Team determined that certain hazard rankings need to be updated from the 2018 rankings due to changes in priorities in the City of Houston and recent hazard events. Drought was ranked as “moderate” in 2018 and increased to “high” in 2023. Similarly, expansive soils, dam failures, and winter storm rankings were increased from “low” in 2018 to “moderate” in 2023. Lightning was ranked as “moderate” in 2018 but ranking decreased in 2023 to “low.”

Table 22 portrays the results of the risk assessment analysis for the frequency of occurrence and potential severity and the City's self-assessment for hazard ranking, based local knowledge of past hazard events and impacts for each of the identified hazards.



Table 22: Hazard Risk Ranking

HAZARD	FREQUENCY OF OCCURENCE	POTENTIAL SEVERITY	RANKING
Flood	Highly Likely	Substantial	High
Hurricane/Tropical Storm	Highly Likely	Substantial	High
Extreme Heat	Highly Likely	Substantial	High
Drought	Highly Likely	Minor	High
Thunderstorm Wind	Highly Likely	Substantial	High
Dam Failure	Unlikely	Substantial	Moderate
Expansive Soils	Likely	Limited	Moderate
Tornado	Likely	Substantial	Moderate
Winter Storm	Highly Likely	Limited	Moderate
Wildfire	Highly Likely	Limited	Low
Lightning	Highly Likely	Substantial	Low
Hail	Highly Likely	Limited	Low

Table 22 Source: City of Houston Hazard Mitigation Plan Update 2023-2028

FEMA defined Community Lifelines for incident response, allowing the federal government a better understanding of the impacts of hazards and disasters in state and local jurisdictions. Although FEMA does not require a comprehensive Community Lifelines assessment in hazard mitigation planning guidance, the City of Houston does use these constructs during emergency response and recovery efforts. The assessment below includes an overview of the FEMA-defined Community Lifeline Components (shown in Figure 17), which were updated in 2023.

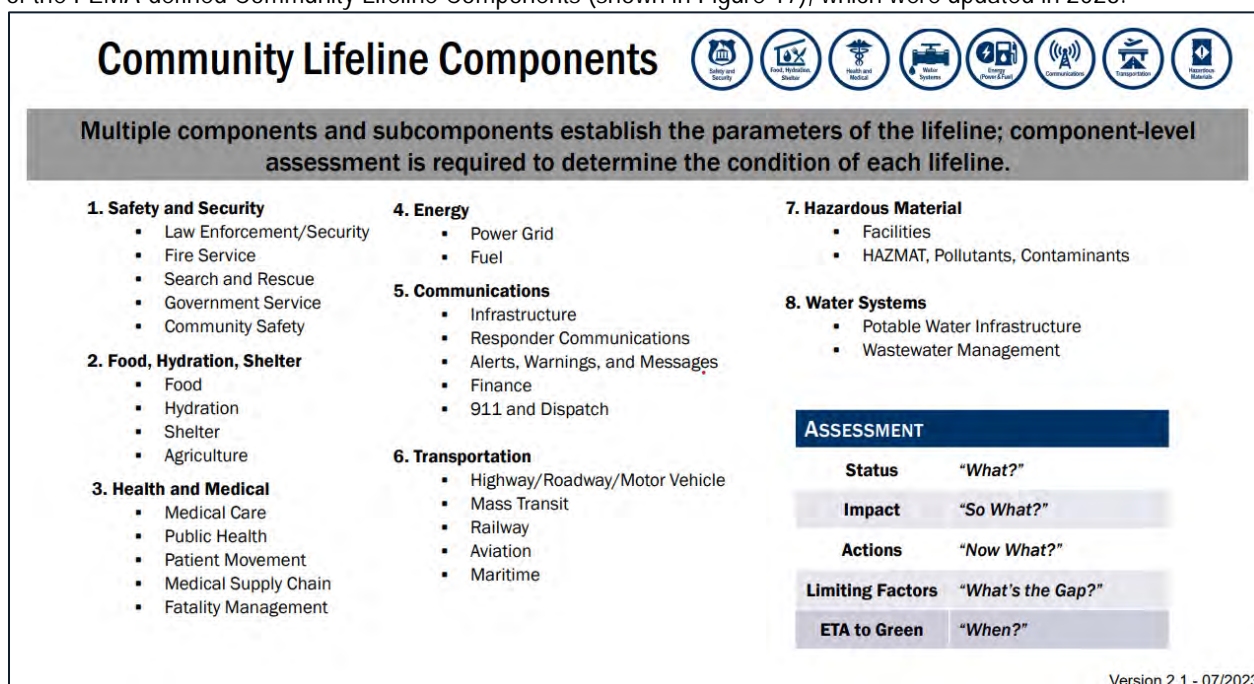


Figure 13: Community Lifeline Components

Source: FEMA Community Lifelines Toolkit 2.1/2023

([https://www.fema.gov/sites/default/files/documents/fema\\_lifelines-toolkit-v2.1\\_2023.pdf](https://www.fema.gov/sites/default/files/documents/fema_lifelines-toolkit-v2.1_2023.pdf))

Ensuring the resilience of Community Lifelines is an important concept in all phases of emergency management. To quantitatively assess lifelines, the City of Houston is evaluating known facilities and infrastructure to support each lifeline and conducting geographic assessments of each with known hazard zones. The quantitative assessment is limited to flood risks (both inland and coastal). A preliminary assessment of each lifeline by hazard is provided in this

section using vulnerability and consequence/impact assessments for each of the seven community lifelines. The classifications of vulnerability and consequences are shown in the following Tables 23 and 24, respectively. These assessments are presented at the end of each hazard section. Consequence analysis may include all components of a lifeline or be isolated to one or two components or subcomponents that are critical in each hazard condition.

Table 23: Vulnerability Classifications

Vulnerability	Description
<b>High Vulnerability</b>	Geographically widespread exposure of facilities and systems to the damaging effects of a hazard AND the lifeline has low resilience to a hazard.
<b>Moderate Vulnerability</b>	The geographic exposure of facilities and systems to a hazard is widespread OR the lifeline has a low resilience to a hazard and the hazard is geographically isolated.
<b>Low Vulnerability</b>	Exposure of facilities and systems related to a community lifeline are geographically isolated OR the system itself has significant resilience to the hazard.

Table 23 Source: City of Houston OEM

Table 24: Consequence Classifications

Consequence	Description
<b>Significant Impact to Lifeline/Services</b>	In the worst, most probable hazard situation, services and infrastructure are fully functioning within weeks of onset of the hazard condition.
<b>Moderate Impact to Lifeline/Services</b>	In the worst, most probable hazard situation, services and infrastructure are fully functioning within days of onset of the hazard condition.
<b>Low Impact to Lifeline/Services</b>	In the worst, most probable hazard situation, services and infrastructure are fully functioning within hours of onset of the hazard condition.

Table 24 Source: City of Houston OEM

The sections below provide an overview of the hazards affecting Houston, including information related to previous occurrences and their magnitude and impacts, as well as the probability of future hazard events.

## Flood

Flooding is the foremost hazard that threatens the City of Houston, generally resulting from excessive precipitation. The severity of a flood event is determined by a combination of several major factors, including: stream and river basin topography and physiography; precipitation and weather patterns; recent soil moisture conditions; and the degree of vegetative clearing and impervious surface. Typically, floods are long-term events that may last for several days.

The primary types of general flooding are inland and coastal flooding. Due to the City of Houston's inland location, only inland flooding is profiled in this section. Inland or riverine flooding is a result of excessive precipitation levels and water runoff volumes within the watershed of a stream or river. Inland or riverine flooding is overbank flooding of rivers and streams, characteristically resulting from large-scale weather systems that generate prolonged rainfall over a wide geographic area, thus it is a naturally occurring and inevitable event. Some river floods occur seasonally when winter or spring rainfalls fill river basins with too much water, too quickly. Torrential rains from decaying hurricanes or tropical systems can also produce river flooding. The City of Houston area residents are subject to a tremendous amount of rainfall, which often occurs over an extremely short period. This is generally due to unstable tropical storms or hurricanes, and rain events which results in a substantial flooding problem. Floods are a natural and recurrent event. Floods take place every year and, in all seasons.

The Harris County Flood Control District (HCFCD) and FEMA are currently partnering on a flood hazard assessment project to produce a comprehensive set of maps that will include previously unmapped urban flood hazards, due to be released in 2025. Current maps do not account for all the complexities of drainage patterns in a rapidly developing environment and are an incomplete snapshot of flood risk in the Houston area. This assessment will incorporate the National Oceanic and Atmospheric Administration's (NOAA) Atlas 14 results, which include increased estimates of the precipitation amounts in a standard return period (i.e., 100-year interval).<sup>1</sup> HCFCD's project will culminate in the development of new FEMA Flood Insurance Rate Maps (FIRMs), which are used to regulate new development and to control the improvement and repair of substantially-damaged buildings, and other flood risk projects.

HCFCD has reviewed recent storms within the new parameters outlined by the Atlas 14 study. Flood risks are likely to be greater than previously thought. The figure below shows the intensity of repetitive flood losses in Houston. According to a report by the Baker Institute for Public Policy at Rice University, Atlas 14 substantially increased the 100-year and 500-year storm amounts for the Houston area, raising the 100-year event for 24 hours (the time period used for floodplain mapping purposes) from 13 inches to 17-18 inches and the 500-year event from 18.9 to 25.4 inches. Details are provided in Table 25.

Table 25: Comparison of NOAA Atlas 14 Rainfall Amounts to Previous Amounts

Duration	100 Year Rain Event	500 Year Rain Event	NOAA Atlas 14 100 Year	NOAA Atlas 14 500 Year	Imelda Sept. 2019	Harvey Aug. 2017	Tax Day April 2016	Allison June 2001	October 1994
1-hr	4.3	5.5	4.8	6.4	6.4	6.8	4.7	5.7	3.7
2-hr	5.7	7.6	7.0	9.7	9.2	11.9	7.3	9.9	4.7
3-hr	6.7	9.2	8.6	12.4	10.9	14.8	8.3	13.5	5.3
6-hr	8.9	12.8	11.4	17.0	14.3	18.9	13.9	21.2	7.2
12-hr	10.8	15.5	14.1	21.2	17.9	20.9	16.7	28.3	12.0
24-hr	13.2	18.9	17.0	25.4	21.1	25.6	17.4	28.4	20.9
2 days	14.5	20.0	20.5	29.6	29.1	35.2	17.5	28.5	23.1
4 days	15.9	21.1	23.1	32.5	29.7	47.7	N/A	38.5	28.9

Table 25 Source: Rice University's Baker Institute for Public Policy, data from Harris County Flood Control District

A property's vulnerability to a flood depends on its location and proximity to the floodplain. Structures that lie along banks of a waterway are the most vulnerable and are often repetitive loss structures. The City of Houston encourages development outside of the floodplain, and the impact for flood for the entire planning area is "Minor" as facilities and services would be shut down for one week, more than 10 percent of property destroyed or with major damage, and injuries or illness that would not potentially result in permanent disability. However, with nine reported fatalities and three injuries, the impact is considered "substantial", with multiple deaths possible depending on the size and magnitude of the flood event. The City of Houston identified some critical facilities as assets that are considered the most important to the planning area and are susceptible to a range of impacts caused by flood events. Considering 69 flood events over 27 years, the frequency is approximately two to three events every year.

While all citizens are at risk to the impacts of a flood, forced relocation and disaster recovery processes drastically impact low-income residents who lack the financial means to travel, afford a long-term stay away from home, and to rebuild or repair their homes. An estimated 19.5 percent of the planning area population lives below the poverty level.

<sup>1</sup> Source: Harris County Modeling Assessment and Awareness Project. <http://www.maapnext.org/>



Similarly, renters tend to be more vulnerable to the impacts of flooding events. Their ability to recover after a flood is often disproportionately impacted by limited affordable replacement housing, financial constraints, and they often do not carry flood insurance to cover losses. Within the City, 58 percent of housing units are renter-occupied. While warning times for these types of hazard events should be substantial enough for these individuals to seek shelter, individuals who work and recreate outside are also vulnerable to the potential impacts of a flood event.

The severity of a flooding event varies depending on the relative risk to citizens and structures located within the city. Table 31 depicts the level of impact for the City of Houston.

*Table 26: Level of Impact Summary*

Jurisdiction	Impact	Description
City of Houston	Substantial	While it is anticipated that the City of Houston could anticipate an impact of "minor" with critical facilities shut down for a week or more, and more than 10 percent of property would be destroyed or damaged, the historical injuries and fatalities resulting from flood indicate a "substantial" impact.

Table 26 Source: City of Houston OEM

Worsening flood conditions can be frequently associated with a variety of impacts, including:

- Flood-related rescues may be necessary at swift and low-water crossings or in flooded neighborhoods where roads have become impassable, placing first responders in harm's way.
- Evacuations may be required for entire neighborhoods because of rising floodwater, further taxing limited response capabilities and increasing sheltering needs for displaced residents.
- Health risks and threats to residents are elevated after the flood waters have receded due to contaminated flood waters (untreated sewage and hazardous chemicals) and mold growth typical in flooded buildings and homes.
- Significant flood events often result in widespread power outages increasing the risk to more vulnerable portions of the population who rely on power for health and/or life safety.
- Extended power outage can result in an increase in structure fires and/or carbon monoxide poisoning as individuals attempt to cook or heat their home with alternate, unsafe cooking or heating devices, such as grills.
- Floods can destroy or make residential structures uninhabitable, requiring shelter or relocation of residents in the aftermath of the event.
- 265 buildings and sites in the City are on the National Register of Historic Places. These structures would typically be built at lower elevations and may be more susceptible to flooding.
- First responders are exposed to downed power lines, contaminated and potentially unstable debris, hazardous materials, and generally unsafe conditions, elevating the risk of injury to first responders and potentially diminishing emergency response capabilities.
- Emergency operations and services may be significantly impacted due to damaged facilities.
- Significant flooding can result in the inability of emergency response vehicles to access areas of the community.
- Critical staff may suffer personal losses or otherwise be impacted by a flood event and unable to report for duty, limiting response capabilities.
- City departments may be flooded, delaying response and recovery efforts for the entire community.
- Private sector entities that the jurisdiction and its residents rely on, such as utility providers, financial institutions, and medical care providers may not be fully operational and may require assistance from neighboring communities until full services can be restored.
- Damage to infrastructure may slow economic recovery since repairs may be extensive and lengthy.
- Some businesses not directly damaged by the flood may be negatively impacted while utilities are being restored or water recedes, further slowing economic recovery.

- When the community is affected by significant property damage it is anticipated that funding would be required for infrastructure repair and restoration, temporary services and facilities, overtime pay for responders, and normal day-to-day operating expenses.
- Displaced residents may not be able to immediately return to work, further slowing economic recovery.
- Residential structures substantially damaged by a flood may not be rebuilt for years and uninsured or underinsured residential structures may never be rebuilt, reducing the tax base for the community.
- Large floods may result in dramatic population fluctuation, as people are unable to return to their homes or jobs and must seek shelter and/or work outside of the affected area.
- Businesses that are uninsured or underinsured may have difficulty reopening, which results in a net loss of jobs for the community and a potential increase in the unemployment rate.
- Flooding may cause significant disruptions of clean water and sewer services, elevating health risks and delaying recovery efforts.
- The psycho-social effects on flood victims and their families can traumatize them for long periods of time, creating long term increases in medical treatment and services.
- Extensive or repetitive flooding can lead to decreases in property value for the affected community.
- Flood poses a potential catastrophic risk to annual and perennial crop production and overall crop quality leading to higher food costs.
- Flood related declines in production may lead to an increase in unemployment.
- Large floods may result in loss of livestock, potentially increased livestock mortality due to stress and water borne disease, and increased cost for feed.
- Recreation activities at areas such as Buffalo Bayou and Hermann Park may be unavailable and tourism can be unappealing for years following a large flood event, devastating directly related local businesses and negatively impacting economic recovery.
- Vegetation in the City's urban parks may become destroyed or oversaturated from flood waters, impacting air quality and public health.
- Parks, recreational areas and nature preserves, such as the Armand Bayou Nature Center may suffer significant wildlife mortality during and following a flood due to damaged or destroyed ecosystems and water contamination.

The overall extent of damages caused by floods is dependent on the extent, depth and duration of flooding, and the velocities of flows in the flooded areas. The level of preparedness and risk reduction planning done by the City, local businesses, and residents will contribute to the overall economic and financial conditions in the aftermath of a flood event.

A summary assessment of flood hazard vulnerability and impacts to the community lifelines is presented in the following table.

*Table 27: Flood Vulnerability and Consequence Summary by Lifeline*

Flood	Vulnerability	Consequence
Safety and Security	High Vulnerability	Moderate Impact to Lifeline/Services
Food, Hydration, Shelter	High Vulnerability	Significant Impact to Lifeline/Services
Health and Medical	Moderate Vulnerability	Significant Impact to Lifeline/Services
Energy (Power and Fuel)	High Vulnerability	Significant Impact to Lifeline/Services
Communications	Moderate Vulnerability	Moderate Impact to Lifeline/Services
Transportation	High Vulnerability	Significant Impact to Lifeline/Services
Hazardous Material	High Vulnerability	Significant Impact to Lifeline/Services
Water Systems	High Vulnerability	Significant Impact to Lifeline/Services

Table 27 Source: City of Houston OEM

## Hurricane

The location of the City of Houston near the coast makes the planning area vulnerable to threats directly and indirectly related to a hurricane event, such as high-force winds and flooding. While the City is not located along the Gulf coast, the southeast jurisdictional boundary is located approximately 20 miles from the Gulf of Mexico coast, making it susceptible to hurricanes. Hurricanes and/or tropical storms can impact the City of Houston from June to November, the official Atlantic U.S. hurricane season.

As a hurricane develops, the barometric pressure (measured in millibars or inches) at its center falls, and wind increases. If the atmospheric and oceanic conditions are favorable, it can intensify into a tropical depression. When maximum sustained winds reach or exceed 39 miles per hour, the system is designated a tropical storm, given a name, and closely monitored by the National Hurricane Center in Miami, Florida. When sustained winds reach or exceed 74 miles per hour the storm is deemed a hurricane. Hurricanes are categorized according to the strength and intensity of their winds using the Saffir-Simpson Hurricane Scale (Table 33). A Category 1 storm has the lowest wind speeds, while a Category 5 hurricane has the highest. However, a lower category storm can inflict greater damage than higher category storms depending on where they strike, the amount of storm surge, other weather they interact with, and how slow they move.

Table 28: Extent Scale for Hurricanes Saffir-Simpson Scale

Category	Maximum Sustained Wind Speed (MPH)	Minimum Surface Pressure (millibars)	Storm Surge (feet)
1	74 – 95	Greater than 980	3 – 5
2	96 – 110	979 – 965	6 – 8
3	111 – 130	964 – 945	9 – 12
4	131 – 155	944 – 920	13 – 18
5	155 +	Less than 920	19+

Table 28 Source: National Hurricane Center, [https://www.nhc.noaa.gov/HAW2/english/basics/saffir\\_simpson.shtml](https://www.nhc.noaa.gov/HAW2/english/basics/saffir_simpson.shtml)

Previous occurrences include storms that had a direct path through the City of Houston study area, as well as large storms that impacted the planning area without directly passing over the City. Historical hurricane data for the City of Houston is provided on a countywide basis per the NCEI and NOAA databases.

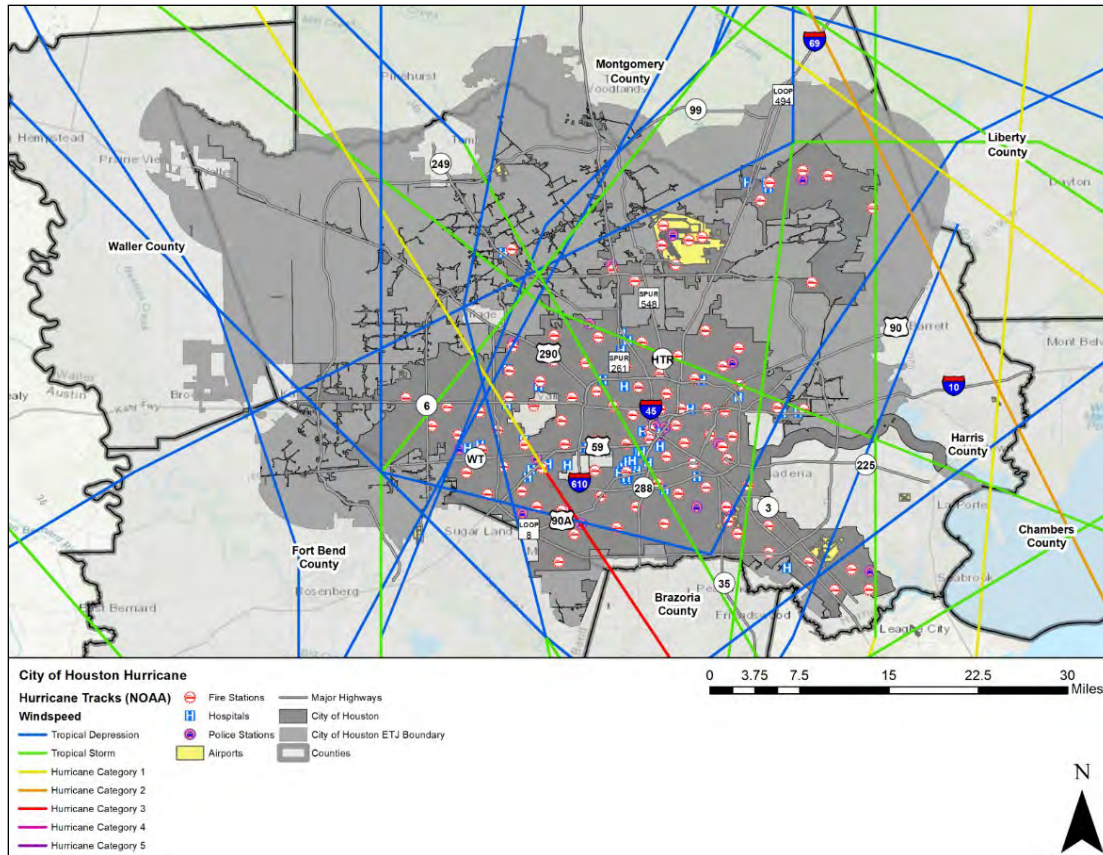


Figure 14: Location of Historic Hurricane Tracks 1854-2023

Source: <https://coast.noaa.gov/hurricanes/>

### Vulnerability and Impact

Hurricane and tropical storm events can cause major damage to large areas; hence, all existing buildings, facilities, and populations are equally exposed and vulnerable to this hazard and could potentially be impacted. The City of Houston planning area features multiple mobile or manufactured home parks throughout the planning area. These parks are typically more vulnerable to hurricane events than typical site-built structures. In addition, manufactured homes are located sporadically throughout the planning area. These homes would also be more vulnerable. The US Census data indicates a total of 9,450 manufactured homes located in the City of Houston planning area. In addition, 51.0 percent of the single family residential (SFR) structures in the City of Houston were built before 1980.<sup>2</sup> These structures would typically be built to lower or less stringent construction standards than newer construction and may be more susceptible to damage during significant events.

In addition, renters tend to be more vulnerable to the impacts of hurricane events. Their ability to recover after a hurricane is often disproportionately impacted by limited affordable replacement housing, financial constraints, and lack of insurance to cover losses. Within the City, 58 percent of housing units are renter-occupied

<sup>2</sup> Source: U.S. Census Bureau data estimates for 2022.



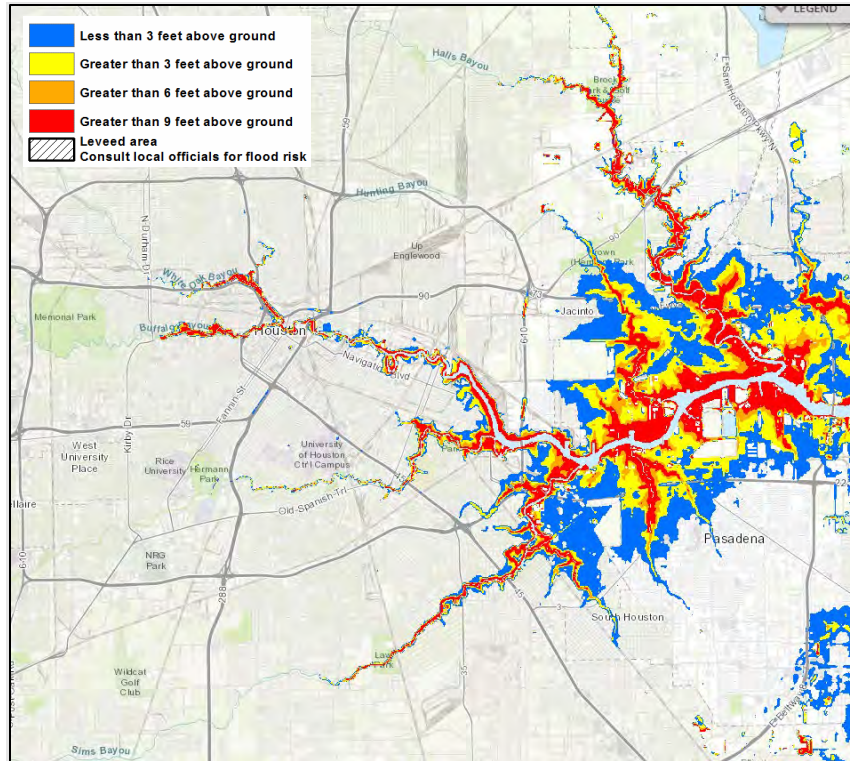


Figure 15: Hurricane Storm Surge Risk in Houston

Source: NOAA, National Storm Surge Hazard Maps: <https://noaa.maps.arcgis.com/home/index.html>

Figure 15 presents the risk associated with storm surge produced by a hurricane. It should be noted that storm surge is not entirely dependent on the strength of the storm but can vary depending on the size or speed of the storm.

Hurricane events have the potential to pose a significant risk to people and can create dangerous and difficult situations for public health and safety officials. The impact of climate change could produce larger, more severe hurricane events, exacerbating the current hurricane impacts. Impacts to the planning area can include:

- Individuals exposed to the storm can be struck by flying debris, falling limbs, or downed trees, causing serious injury or death.
- Structures can be damaged or crushed by falling trees, which can result in physical harm to the occupants.
- Driving conditions in the planning area may be dangerous during a hurricane event, especially over elevated bridges, elevating the risk of injury and accidents during evacuations if not timed properly.
- Emergency evacuations may be necessary prior to a hurricane making landfall, requiring emergency responders, evacuation routing, and temporary shelters.
- Significant debris and downed trees can result in emergency response vehicles being unable to access areas of the community.
- Downed power lines may result in roadways being unsafe for use, which may prevent first responders from answering calls for assistance or rescue.
- During hurricane landfall, first responders may be prevented from responding to calls as the winds may reach a speed in which their vehicles and equipment are unsafe to operate.
- Hurricane events often result in widespread power outages, increasing the risk to more vulnerable portions of the population who rely on power for health and/or life safety.
- Extended power outages can also result in an increase in structure fires and carbon monoxide poisoning as individuals attempt to cook or heat their homes with alternative, unsafe cooking or heating devices, such as grills.

- Extended power outages can also be deadly for individuals reliant on electricity to live independently in their homes.
- Extreme hurricane events may rupture gas lines and down trees and power lines, increasing the risk of structure fires during and after a storm event.
- Extreme hurricane events may lead to prolonged evacuations during search and rescue, and immediate recovery efforts requiring additional emergency personnel and resources to prevent entry, protect citizens, and protect property.
- First responders are exposed to downed power lines, unstable and unusual debris, hazardous materials, and generally unsafe conditions.
- Emergency operations and services may be significantly impacted due to damaged facilities and/or loss of communications.
- Critical staff may be unable to report for duty, limiting response capabilities.
- City departments may be damaged, delaying response and recovery efforts for the entire community.
- Private sector entities that the City and its residents rely on, such as utility providers, financial institutions, and medical care providers, may not be fully operational and may require assistance from neighboring communities until full services can be restored.
- Economic disruption negatively impacts the programs and services provided by the community due to short- and long-term loss in revenue.
- Some businesses not directly damaged by the hurricane may be negatively impacted while roads are cleared and utilities are being restored, further slowing economic recovery.
- Older structures built to less stringent building codes may suffer greater damage as they are typically more vulnerable to hurricane damage. 51 percent of homes in the City were built before 1980. 265 buildings and sites in the City are on the National Register of Historic Places, many of which pre-date modern building codes.
- Vegetation in the City's urban parks may become flattened or oversaturated from high winds and heavy rains.
- Large scale hurricanes can have significant economic impact on the affected area, as it must now fund expenses such as infrastructure repair and restoration, temporary services and facilities, overtime pay for responders, as well as normal day-to-day operating expenses.
- Businesses that are more reliant on utility infrastructure than others may suffer greater damages without a backup power source.
- As the City of Houston continues to add population, the number of people and housing developments exposed to the hazard increases. Continued public education on the City's risks to hurricane events will continue to be key to the city's overall mitigation strategy.

The economic and financial impacts of hurricane events on the area will depend on the scale of the event, what is damaged, and how quickly repairs to critical components of the economy can be implemented. The level of preparedness and pre-event planning done by the county, communities, local businesses, and citizens will also contribute to the overall economic and financial conditions in the aftermath of any hurricane event.

Based on historical occurrences of significant hurricane events, the probability of future events is highly likely with the frequency of occurrence of one event, every year for the City of Houston. A summary assessment of hurricane hazard vulnerability and impacts to the community lifelines is presented in the table below.

Hurricane and tropical storm events have the potential to pose a significant risk to people and property. Such events can create dangerous situations for public health and safety officials and cause catastrophic damages. The impact of climate change could produce larger, more severe hurricane events, exacerbating the current hurricane impacts. The economic and financial impacts of hurricanes and tropical storms will depend entirely on the scale of the events, what is damaged, and how quickly repairs to critical components of the economy can be implemented.

Table 29: Hurricane Vulnerability and Consequence Summary by Lifeline

Hurricane	Vulnerability	Consequence
Safety and Security	High Vulnerability	Significant Impact to Lifeline/Services
Food, Hydration, Shelter	High Vulnerability	Significant Impact to Lifeline/Services
Health and Medical	Moderate Vulnerability	Significant Impact to Lifeline/Services
Energy (Power and Fuel)	High Vulnerability	Significant Impact to Lifeline/Services
Communications	High Vulnerability	Significant Impact to Lifeline/Services
Transportation	High Vulnerability	Significant Impact to Lifeline/Services
Hazardous Material	High Vulnerability	Significant Impact to Lifeline/Services
Water Systems	High Vulnerability	Significant Impact to Lifeline/Services

Table 29 Source: City of Houston OEM

## Extreme Heat

Extreme heat is a prolonged period of excessively high temperatures and exceptionally humid conditions. Extreme heat during the summer months is a common occurrence throughout the State of Texas, and the City of Houston is no exception. The City typically experiences extended heat waves or an extended period of extreme heat and is often accompanied by high humidity. In addition, the City also has urban heat islands or areas where there is a concentration of structures such as buildings and pavement and a limited amount of greenery causing higher temperatures relative to outlying areas.

Although heat can damage buildings and facilities, it presents a more significant threat to the safety and welfare of citizens. The major human risks associated with extreme heat include heat cramps; sunburn; dehydration; fatigue; heat exhaustion; and even heat stroke. The most vulnerable population to heat casualties are children and the elderly or infirmed who frequently live on low fixed incomes and cannot afford to run air-conditioning on a regular basis. This population is sometimes isolated, with no immediate family or friends to look out for their well-being. The National Weather Service (NWS) initiates alerts based on the Heat Index as shown in Table 30.

Table 30: Heat Index and Warnings

Category	Heat Index	Possible Heat Disorders	Warning Type
Extreme Danger	125°F and higher	Heat stroke or sun stroke likely.	An Excessive Heat Warning is issued if the Heat Index rises above 105°F at least 3 hours during the day or above 80°F at night.
Danger	103 – 124°F	Sunstroke, muscle cramps, and/or heat exhaustion are likely. Heatstroke possible with prolonged exposure and/or physical activity.	
Extreme Caution	90 – 103°F	Sunstroke, muscle cramps, and/or heat exhaustion possible with prolonged exposure and/or physical activity.	A heat advisory will be issued to warn that the Heat Index may exceed 105°F.
Caution	80 – 90°F	Fatigue is possible with prolonged exposure and/or physical activity.	

Table 30 Source: City of Houston OEM

There is no defined geographic boundary for extreme heat events. While the entirety of the City of Houston is exposed to extreme temperatures, existing buildings, infrastructure, and critical facilities are not likely to sustain significant damage from extreme heat events. Therefore, any estimated property losses associated with the extreme heat hazard are anticipated to be minimal across the area.

Every summer, the hazard of heat-related illness becomes a significant public health issue throughout much of the United States. Mortality from all causes increases during heat waves, and excessive heat is an important contributing factor to deaths from other causes, particularly among the elderly. Extreme temperatures present a significant threat

to life and safety for the population of the City as a whole. Heat casualties, for example, are typically caused by a lack of adequate air conditioning or heat exhaustion.

The most vulnerable population to heat casualties is the elderly or infirmed who frequently live on low fixed incomes and cannot afford to run air-conditioning on a regular basis. This population is sometimes isolated, with no immediate family or friends to look out for their well-being. Children may also be more vulnerable if left unattended in vehicles. Students are also susceptible as sporting events and practices are often held outside during early fall or late spring when temperatures are at their highest. In addition, populations living below the poverty level are unable to run air-conditioning on a regular basis and are limited in their ability to seek medical treatment. Another segment of the population at risk is those whose jobs consist of strenuous labor outdoors.

The population over 65 in the City of Houston is estimated at 11 percent of the total population, and children under the age of 5 are estimated at 7 percent, or an estimated total of 420,297 potentially vulnerable residents in the planning area based on age. In addition, an estimated 19.5 percent of the planning area population lives below the poverty level. Underprivileged populations; disproportionately impacted by extreme heat events, as they are less likely to be able to afford air conditioning during the hot summer months, as well as less likely to have access to medical care. The greatest risk from extreme heat is to public health and safety. The impact of climate change could produce longer, more severe heat waves, exacerbating the current impacts. Extreme heat conditions can be frequently associated with a variety of impacts, including:

- Vulnerable populations, particularly the elderly (11 percent of total population) and children under 5 (7 percent of total population), can face serious or life-threatening health problems from exposure to extreme heat including hyperthermia, heat cramps, heat exhaustion, and heat stroke (or sunstroke).
- Response personnel including utility workers, public works personnel, and any other professions where individuals are required to work outside, are more subject to extreme heat related illnesses since their exposure would typically be greater.
- High energy demand periods can outpace the supply of energy, potentially creating the need for rolling brownouts, which would elevate the risk of illness to vulnerable residents.
- Highways and roads may be damaged by excessive heat causing asphalt roads to soften and concrete roads to shift or buckle.
- Vehicle engines and cooling systems typically run harder during extreme heat events, resulting in increases in mechanical failures.
- Extreme heat events during times of drought can exacerbate the environmental impacts associated with drought, decreasing water and air quality, and further degrading wildlife habitat.
- Extreme heat increases ground-level ozone (smog), increasing the risk of respiratory illnesses.
- Negatively impacted water suppliers may face increased costs resulting from the transport of water resources or development of supplemental water resources.
- Tourism and recreational activities predominant in the City of Houston may be negatively impacted during extreme heat events, reducing seasonal revenue.
- Outdoor activities may see an increase in school injury or illness during extreme heat events.
- Food suppliers can anticipate an increase in food costs due to increases in production costs and crop and livestock losses.
- Fisheries may be negatively impacted by extreme heat, suffering damage to fish habitats (either natural or man-made), and a loss of fish and/or other aquatic organisms due to decreased water flows or availability.

The economic and financial impacts of extreme heat will depend on the duration of the event, demand for energy, drought associated with extreme heat, and many other factors. The level of preparedness and the amount of planning done by the jurisdiction, local businesses, and citizens will impact the overall economic and financial conditions before, during, and after an extreme heat event.



Climate change is expected to lead to an increase in average temperatures as well as an increase in frequency, duration and intensity of extreme heat events. With no reductions in emissions worldwide, the state of Texas is projected to experience an additional 30 to 60 days per year above 100°F than what is experienced now. A summary assessment of extreme heat hazard vulnerability and impacts to the community lifelines is presented in the following table.

Table 31: Extreme Heat Vulnerability and Consequence Summary by Lifeline

Extreme Heat	Vulnerability	Consequence
Safety and Security	Moderate Vulnerability	Low Impact to Lifeline/Services
Food, Hydration, Shelter	Moderate Vulnerability	Low Impact to Lifeline/Services
Health and Medical	Low Vulnerability	Low Impact to Lifeline/Services
Energy (Power and Fuel)	High Vulnerability	Moderate Impact to Lifeline/Services
Communications	Moderate Vulnerability	Low Impact to Lifeline/Services
Transportation	Low Vulnerability	Low Impact to Lifeline/Services
Hazardous Material	Moderate Vulnerability	Low Impact to Lifeline/Services
Water Systems	Moderate Vulnerability	Moderate Impact to Lifeline/Services

Table 31 Source: City of Houston OEM

## Thunderstorm Wind

Thunderstorms create extreme wind events including straight-line winds. Wind is the horizontal motion of the air past a given point, beginning with differences in air pressures. Pressure that is higher at one place than another sets up a force pushing from the high toward the low pressure: the greater the difference in pressures, the stronger the force. The distance between the area of high pressure and the area of low pressure also determines how fast the moving air is accelerated.

Straight-line winds are responsible for most thunderstorm wind damages. One type of straight-line wind, the downburst, is a small area of rapidly descending air beneath a thunderstorm. A downburst can cause damage equivalent to a strong tornado and make air travel extremely hazardous.

Thunderstorm wind events can develop in any geographic location and are considered a common occurrence in Texas. Therefore, a thunderstorm wind event could occur at any location within the City of Houston's planning area, as these storms develop randomly and are not confined to any geographic area within the City. It is assumed that the entire City of Houston planning area is uniformly exposed to the threat of thunderstorm winds.

Vulnerability is difficult to evaluate since thunderstorm wind events can occur at different strength levels, in random locations, and can create relatively narrow paths of destruction. Due to the randomness of these events, all existing and future structures and facilities within the City of Houston planning area could potentially be impacted and remain vulnerable to possible injury and property loss from strong winds.

Trees, power lines and poles, signage, manufactured housing, radio towers, concrete block walls, storage barns, windows, garbage receptacles, brick facades, and vehicles, unless reinforced, are vulnerable to thunderstorm wind events. More severe damage involves windborne debris; in some instances, patio furniture and other lawn items have been reported to have been blown around by wind and, very commonly, debris from damaged structures in turn have caused damage to other buildings not directly impacted by the event. In numerous instances roofs have been reported as having been torn off buildings. The portable buildings typically used at schools and construction sites would be more vulnerable to thunderstorm wind events than typical site-built structures and could potentially pose a greater risk for wind-blown debris.

While all citizens are vulnerable to the impacts of thunderstorm wind, forced relocation and disaster recovery drastically impacts low-income residents who lack the financial means to travel, afford a long-term stay away from home, and to rebuild or repair their homes. An estimated 19.5 percent of the planning area population lives below the poverty level. Renters also tend to be more vulnerable to the impacts of wind events and their ability to recover after an event. Within the City, 58 percent of housing units are renter-occupied. While warning times for these type of hazard events should be substantial enough for these individuals to seek shelter, individuals who work and recreate outside are also vulnerable to potential impacts of a thunderstorm wind event.

Thunderstorm wind events have the potential to pose a significant risk to people and can create dangerous and difficult situations for public health and safety officials. The impact of climate change could produce larger, more severe thunderstorm wind events, exacerbating the current thunderstorm wind impacts. Thunderstorm wind conditions can be frequently associated with a variety of impacts, including:

- Individuals exposed to the storm can be struck by flying debris, falling limbs, or downed trees, causing serious injury or death.
- Structures can be damaged or crushed by falling trees, which can result in physical harm to the occupants.
- Significant debris and downed trees can result in emergency response vehicles being unable to access areas of the community.
- Downed power lines may result in roadways being unsafe for use, which may prevent first responders from answering calls for assistance or rescue.
- During exceptionally heavy wind events, first responders may be prevented from responding to calls, as the winds may reach a speed in which their vehicles and equipment are unsafe to operate.
- Thunderstorm wind events often result in widespread power outages, increasing the risk to more vulnerable portions of the population who rely on power for health and/or life safety.
- Extended power outages often result in an increase in structure fires and carbon monoxide poisoning, as individuals attempt to cook or heat their homes with alternate, unsafe cooking or heating devices, such as grills.
- First responders are exposed to downed power lines, unstable and unusual debris, hazardous materials, and generally unsafe conditions.
- Emergency operations and services may be significantly impacted due to damaged facilities and/or loss of communications.
- Critical staff may be unable to report for duty, limiting response capabilities.
- City or county departments may be damaged, delaying response and recovery efforts for the entire community.
- Private sector entities that the City and its residents rely on, such as utility providers, financial institutions, and medical care providers may not be fully operational and may require assistance from neighboring communities until full services can be restored.
- Economic disruption negatively impacts the programs and services provided by the community due to short- and long-term loss in revenue.
- Some businesses not directly damaged by thunderstorm wind events may be negatively impacted while roads are cleared and utilities are being restored, further slowing economic recovery.
- Older structures built to less stringent building codes may suffer greater damage as they are typically more vulnerable to thunderstorm winds. 51 percent of homes in the City were built before 1980. 265 buildings and sites in the City are on the National Register of Historic Places, many of which pre-date modern building codes.
- Large-scale wind events can have a significant economic impact on the affected area, as it must now fund expenses such as infrastructure repair and restoration, temporary services and facilities, overtime pay for responders, as well as normal day-to-day operating expenses.
- Businesses that are more reliant on utility infrastructure than others may suffer greater damages without a backup power source.

- Recreational areas and parks may be damaged or inaccessible due to downed trees or debris, causing temporary impacts to area businesses.
- Thunderstorm wind events could impact tourism and recreational activities, placing visitors in imminent danger, potentially requiring emergency services or evacuations.

The economic and financial impacts of thunderstorm winds on the area will depend entirely on the scale of the event, what is damaged, and how quickly repairs to critical components of the economy can be implemented. The level of preparedness and pre-event planning done by the community, local businesses, and citizens will also contribute to the overall economic and financial conditions in the aftermath of any thunderstorm wind event.

Most thunderstorm winds occur during the spring and fall seasons and during the months of March, April, May, and September. Based on available records of historic events, there have been 188 events in a 72-year reporting period, which provides a probability of three events every year. Even though the intensity of thunderstorm wind events is not always damaging for the City of Houston, the frequency of occurrence for a thunderstorm wind event is highly likely. This means that an event is probable within the next year for the City of Houston planning area. A summary assessment of thunderstorm wind hazard vulnerability and impacts to the community lifelines is presented in the following table.

*Table 32: Thunderstorm Wind Vulnerability and Consequence Summary by Lifeline*

Thunderstorm Wind	Vulnerability	Consequence
Safety and Security	Low Vulnerability	Low Impact to Lifeline/Services
Food, Hydration, Shelter	Moderate Vulnerability	Low Impact to Lifeline/Services
Health and Medical	Low Vulnerability	Low Impact to Lifeline/Services
Energy (Power and Fuel)	Moderate Vulnerability	Significant Impact to Lifeline/Services
Communications	High Vulnerability	Moderate Impact to Lifeline/Services
Transportation	Low Vulnerability	Moderate Impact to Lifeline/Services
Hazardous Material	Moderate Vulnerability	Moderate Impact to Lifeline/Services
Water Systems	Moderate Vulnerability	Moderate Impact to Lifeline/Services

Table 32 Source: City of Houston OEM

The impacts on the frequency and severity of severe thunderstorm wind events due to climate change are unclear. According to the Texas A&M 2021 Climate Report Update, changes in severe thunderstorm reports over time have been more closely linked to changes in population than changes in the hazard event. At this time there is low confidence of an ongoing trend in the overall frequency and severity of thunderstorm events, due to the lack of climate data records for severe thunderstorms. Based on climate models that are available, the environmental conditions needed for severe thunderstorms are estimated to become more likely, resulting in an overall increase in the number of days capable of producing a severe thunderstorm event.

## Lightning

Lightning is a discharge of electrical energy resulting from the buildup of positive and negative charges within a thunderstorm, creating a "bolt" when the buildup of charges becomes strong enough. This flash of light usually occurs within the clouds or between the clouds and the ground. A bolt of lightning can reach temperatures approaching 50,000 degrees Fahrenheit. Lightning rapidly heats the sky as it flashes but the surrounding air cools following the bolt. This rapid heating and cooling of the surrounding air causes the thunder which often accompanies lightning strikes. While most often affiliated with severe thunderstorms, lightning often strikes outside of heavy rain and might occur as far as 10 miles away from any rainfall.

According to the National Weather Service (NWS), the 10-year (2012–2021) average for fatalities is 23 people with an average of 300 injuries in the United States each year by lightning. Lightning can occur as cloud to ground flashes or as intra-cloud lightning flashes. Direct lightning strikes can cause significant damage to buildings, critical facilities, infrastructure, and communication equipment affecting emergency response. Lightning is also responsible for igniting wildfires that can result in widespread damages to property before firefighters have the ability to contain and suppress the resultant fire.

Based on historical records and input from the planning team the probability of occurrence for future lightning events in the City of Houston planning area is considered highly likely, or an event probable in the next year. The planning team stated that lightning occurs regularly in the area. According to NOAA, the City of Houston planning area is located in an area of the country that experiences approximately twelve to twenty-one lightning flashes per square mile per year (approximately 7,980 to 13,965 flashes per year). Given this estimated probability of events, it can be expected that future lightning events will continue to threaten life and cause minor property damages throughout the planning area. Impacts of climate change are not expected to increase the average frequency of lightning events but may lead to an increase in the intensity of events when they do occur. See additional information on climate change at the end of this section.

Vulnerability is difficult to evaluate since lightning events can occur at different strength levels, in random locations, and can create a broad range of damages depending on the strike location. Due to the randomness of these events, all existing and future structures and facilities in the City of Houston planning area could potentially be impacted and remain vulnerable to possible injury and property loss from lightning strikes. The City of Houston planning area has 25 reported lightning events, since 1996 per the NCEI, however the City is vulnerable and could be impacted by lightning.

The direct and indirect losses associated with these events include injury and loss of life, damage to structures and infrastructure, agricultural losses, utility failure (power outages), and stress on community resources. The entire population of the City of Houston is considered exposed to the lightning hazard. The peak lightning season in the State of Texas is from June to August; however, the most fatalities occur in July. Fatalities occur most often when people are outdoors and/or participating in some form of recreation. The population located outdoors is considered at risk and more vulnerable to a lightning strike compared to being inside a structure. Moving to a lower risk location will decrease a person's vulnerability.

The entire general building stock and all infrastructure of the City of Houston planning area are considered exposed to the lightning hazard. Lightning can be responsible for damages to buildings, cause electrical, forest and/or wildfires, and damage infrastructure such as power transmission lines and communication towers.

While all citizens are at risk to the impacts of lightning, forced relocation and disaster recovery drastically impacts low-income residents who lack the financial means to travel, afford a long-term stay away from home, and to rebuild or repair their homes. An estimated 19.5 percent of the planning area population live below the poverty level. In addition, renters tend to be more vulnerable to the impacts of lightning events. Their ability to recover after a lightning event is often disproportionately impacted by limited affordable replacement housing, financial constraints, and lack of insurance to cover losses. Within the City 58 percent of housing units are renter-occupied.

Lightning events have the potential to pose a significant risk to people and can create dangerous and difficult situations for public health and safety officials. The impact of climate change could produce more frequent and severe lightning events, exacerbating the current lightning impacts. Additional impacts to the planning area can include:

- The City of Houston features 39,501 acres of total park space including 382 developed parks and 167 green spaces. Lightning events could impact recreational activities, placing residents and visitors in imminent danger, potentially requiring emergency services or park evacuation.

- Older structures built to less stringent building codes may suffer greater damage from a lightning strike as they are typically built with less fire-resistant materials and often lack any fire mitigation measures such as sprinkler systems. 51 percent of homes in the City were built before 1980. 265 buildings and sites in the City are on the National Register of Historic Places, many of them similarly lack fire mitigation materials or measures.
- Vegetation in the City's urban parks may be destroyed by lightning caused brush fires, impacting air quality and public health.
- Individuals exposed to the storm can be directly struck, posing significant health risks and potential death.
- Structures can be damaged or crushed by falling trees damaged by lightning, which can result in physical harm to the occupants.
- Lightning strikes can result in widespread power outages, increasing the risk to more vulnerable portions of the population who rely on power for health and/or life safety.
- Extended power outages often result in an increase in structure fires and carbon monoxide poisoning, as individuals attempt to cook or heat their homes with alternate, unsafe cooking or heating devices, such as grills.
- Lightning strikes can be associated with structure fires and wildfires, creating additional risk to residents and first responders.
- Emergency operations and services may be significantly impacted due to power outages and/or loss of communications.
- City departments may be damaged, delaying response and recovery efforts for the entire community.
- Lightning events could impact recreational activities, placing residents and visitors in imminent danger, potentially requiring emergency services or park evacuation.
- Economic disruption due to power outages and fires, negatively impacts the programs and services provided by the community due to short and long-term loss in revenue.
- Some businesses not directly damaged by lightning events may be negatively impacted while utilities are being restored, further slowing economic recovery.
- Businesses that are more reliant on utility infrastructure than others may suffer greater damages without a backup power source.

The economic and financial impacts of lightning will depend entirely on the scale of the event, what is damaged, and how quickly repairs to critical components of the economy can be implemented. The level of preparedness and pre-event planning done by the community, local businesses, and citizens will also contribute to the overall economic and financial conditions in the aftermath of any lightning event.

A summary assessment of lightning hazard vulnerability and impacts to the community lifelines is presented in the following table.

*Table 33: Lightning Vulnerability and Consequence Summary by Lifeline*

Lightning	Vulnerability	Consequence
Safety and Security	Moderate Vulnerability	Low Impact to Lifeline/Services
Food, Hydration, Shelter	Moderate Vulnerability	Low Impact to Lifeline/Services
Health and Medical	Moderate Vulnerability	Low Impact to Lifeline/Services
Energy (Power and Fuel)	High Vulnerability	Moderate Impact to Lifeline/Services
Communications	Moderate Vulnerability	Moderate Impact to Lifeline/Services
Transportation	Low Vulnerability	Low Impact to Lifeline/Services
Hazardous Material	Moderate Vulnerability	Moderate Impact to Lifeline/Services
Water Systems	Moderate Vulnerability	Low Impact to Lifeline/Services

Table 33 Source: City of Houston OEM

## Tornado

Tornadoes are among the most violent storms on the planet. A tornado is a rapidly rotating column of air extending between, and in contact with, a cloud and the surface of the earth. The most violent tornadoes are capable of tremendous destruction and have wind speeds of 250 miles per hour or more. In extreme cases, winds may approach 300 miles per hour. Damage paths can be in excess of one mile wide and 50 miles long

The most powerful tornadoes are produced by "supercell thunderstorms." Supercell thunderstorms are created when horizontal wind shears (winds moving in different directions at different altitudes) begin to rotate the storm. This horizontal rotation can be tilted vertically by violent updrafts, and the rotation radius can shrink, forming a vertical column of very quickly swirling air. This rotating air can eventually reach the ground, forming a tornado.

Tornadoes do not have any specific geographic boundary and can occur throughout the City uniformly. It is assumed that the entire City of Houston planning area is susceptible to a potential tornado event. The entire City of Houston planning area is located in Wind Zone III where tornado winds can be as high as 200 mph, refer to Figure 16.

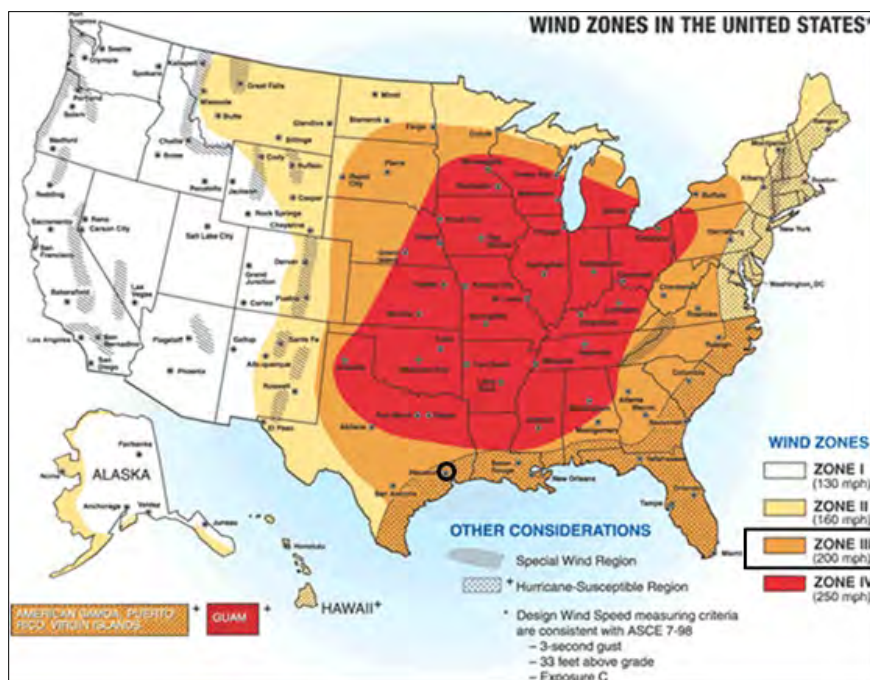


Figure 16: FEMA Wind Zones in the United States

The destruction caused by tornadoes ranges from light to inconceivable, depending on the intensity, size, and duration of the storm. Typically, tornadoes cause the greatest damage to structures of light construction, such as residential homes (particularly mobile homes).

Tornado magnitudes prior to 2005 were determined using the traditional version of the Fujita Scale. Since February 2007, the Fujita Scale has been replaced by the Enhanced Fujita Scale (Table 39), which retains the same basic design and six strength categories as the previous scale. The newer scale reflects more refined assessments of tornado damage surveys, standardization, and damage consideration to a wider range of structures. For the purposes of this plan, those tornadoes that occurred prior to the adoption of the EF scale will still be mentioned in the Fujita Scale for historical reference.



Table 34: Enhanced Fujita Scale for Tornadoes






STORM CATEGORY	DAMAGE LEVEL	3 SECOND GUST (MPH)	DESCRIPTION OF DAMAGES	PHOTO EXAMPLE
EF0	Gale	65 – 85	Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages sign boards.	
EF1	Weak	86 – 110	The lower limit is the beginning of hurricane wind speed; peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off roads; attached garages may be destroyed.	
EF2	Strong	111 – 135	Considerable damage; roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.	
EF3	Severe	136 – 165	Roof and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted.	
EF4	Devastating	166 – 200	Well-constructed homes leveled; structures with weak foundations blown off some distance; cars thrown and large missiles generated.	
EF5	Incredible	200+	Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles flying through the air in excess of 330 yards; trees debarked; steel reinforced concrete badly damaged.	

Table 34 Source: City of Houston Hazard Mitigation Plan

Both the Fujita Scale and Enhanced Fujita Scale should be referenced in reviewing previous occurrences since tornado events prior to 2007 will follow the original Fujita Scale. The largest magnitude reported within the planning area is F4 on the Fujita Scale, a "Devastating Tornado." Based on the planning area's location in Wind Zone III, the planning area could experience anywhere from an EF0 to an EF5 depending on the wind speed. The events in the City of Houston (converted from the Fujita Scale) have been between EF0 and EF5 (Figure 17). This is the strongest event the planning area can anticipate in the future.

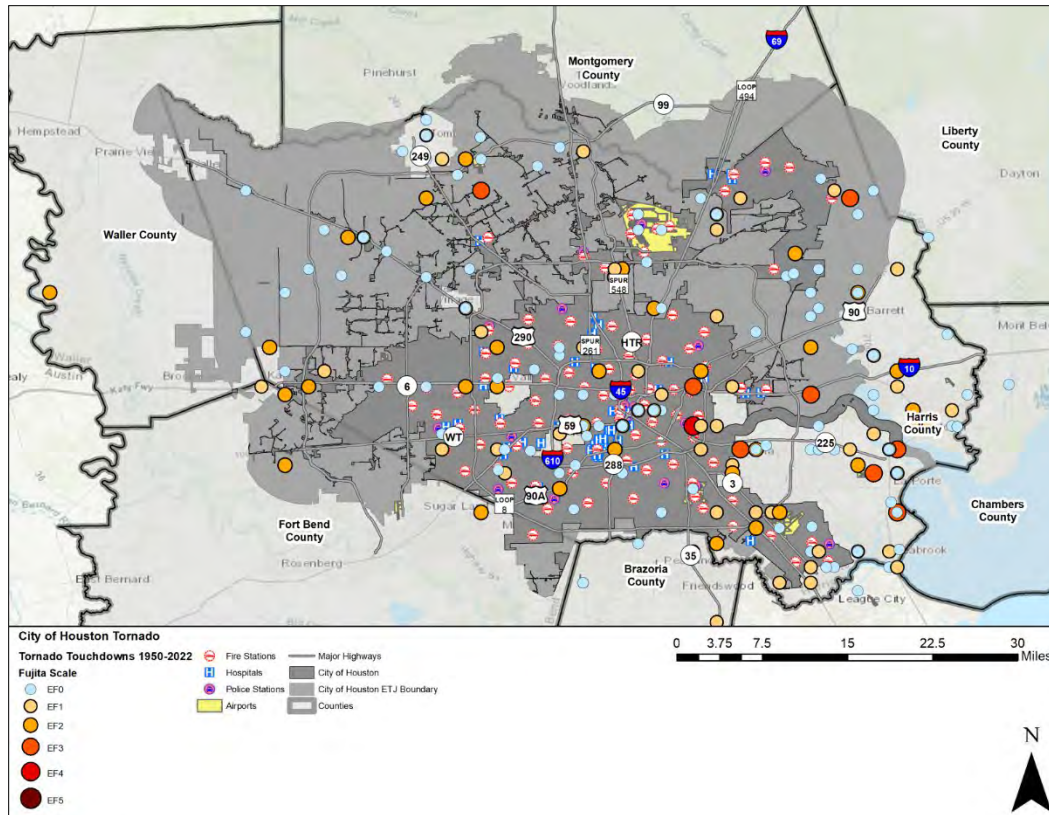


Figure 17: Historical Tornado Events, 1950-2022  
 Source: City of Houston Hazard Mitigation Plan Update 2023

Due to the randomness of tornado events, all existing and future buildings, facilities, and infrastructure in the City of Houston planning area are considered to be exposed to this hazard and could potentially be impacted. The damage caused by a tornado is typically a result of high wind velocity and wind-blown debris.

The average tornado moves from southwest to northeast, but tornadoes have been known to move in any direction. Consequently, the vulnerability of humans and property is difficult to evaluate since tornadoes form at different strengths, in random locations, and create relatively narrow paths of destruction. Although tornadoes strike at random, making all buildings vulnerable, three types of structures are more likely to suffer damage:

- Manufactured homes;
- Homes on crawlspaces (more susceptible to lift); and
- Buildings with large spans, such as shopping malls, gymnasiums, and factories.

Tornadoes can cause a significant threat to people as they could be struck by flying debris, falling trees or branches, utility lines, and poles. Blocked roads could prevent first responders from responding to calls. Tornadoes commonly cause power outages, which could cause health and safety risks to residents and visitors, as well as to patients in hospitals.

The City of Houston planning area features mobile or manufactured home parks throughout the planning area. These parks are typically more vulnerable to tornado events than typical site-built structures. In addition, manufactured homes are located sporadically throughout the planning area, which would also be more vulnerable. U.S. Census data indicates a total of 9,450 (1 percent of the total housing stock) manufactured homes located in the City of Houston, a 16 percent increase in this housing type since 2018. Another factor of manufactured homes that may



increase vulnerability is the age of installation. Inspection of manufactured home installations changed in 2011 when the process was revised statewide; therefore, manufactured homes installed prior to 2011 may be more vulnerable to damage from tornado events. In addition, 51 percent (approximately 504,772 structures) of the housing structures in the City of Houston were built before 1980. These structures would typically be built to lower or less stringent construction standards than newer construction and may be more susceptible to damage during significant tornado events.

While all citizens are at risk to the impacts of a tornado, forced relocation and disaster recovery drastically impacts low-income residents who lack the financial means to travel, afford a long-term stay away from home, and to rebuild or repair their homes. An estimated 19.5 percent of the planning area population lives below the poverty level. Renters also tend to be more vulnerable to the impacts of wind events and their ability to recover after an event. Within the city 58 percent of housing units are renter-occupied. While warning times for these type of hazard events should be substantial enough for these individuals to seek shelter, individuals who work and recreate outside are also vulnerable to the potential impacts of a tornado event.

Tornadoes have the potential to pose a significant risk to the population and can create dangerous situations. Often, providing and preserving public health and safety is difficult following a tornado event. The impact of climate change could produce larger, more severe tornado events, exacerbating the current tornado impacts. More destructive tornado conditions can be frequently associated with a variety of impacts, including:

- Individuals exposed to the storm can be struck by flying debris, falling limbs, or downed trees, causing serious injury or death.
- Structures can be damaged or crushed by falling trees, which can result in physical harm to the occupants.
- Manufactured homes may suffer substantial damage as they would be more vulnerable than typical site-built structures.
- Significant debris and downed trees can result in emergency response vehicles being unable to access areas of the community.
- Downed power lines may result in roadways being unsafe for use, which may prevent first responders from answering calls for assistance or rescue.
- Tornadoes often result in widespread power outages, increasing the risk to more vulnerable portions of the population who rely on power for health and/or life safety.
- Extended power outages can result in an increase in structure fires and/or carbon monoxide poisoning, as individuals attempt to cook or heat their home with alternate, unsafe cooking or heating devices, such as grills.
- Tornadoes can destroy or make residential structures uninhabitable, requiring shelter or relocation of residents in the aftermath of the event.
- First responders must enter the damage area shortly after the tornado passes to begin rescue operations and to organize cleanup and assessments efforts. Therefore, they are exposed to downed power lines, unstable and unusual debris, hazardous materials, and generally unsafe conditions, elevating the risk of injury to first responders and potentially diminishing emergency response capabilities.
- Emergency operations and services may be significantly impacted due to damaged facilities, loss of communications, and damaged emergency vehicles and equipment.
- City departments may be damaged or destroyed, delaying response and recovery efforts for the entire community.
- Private sector entities that the City and its residents rely on, such as utility providers, financial institutions, and medical care providers may not be fully operational and may require assistance from neighboring communities until full services can be restored.
- Economic disruption negatively impacts the programs and services provided by the community due to short and long-term loss in revenue.
- Damage to infrastructure may slow economic recovery since repairs may be extensive and lengthy.

- Some businesses not directly damaged by the tornado may be negatively impacted while roads and utilities are being restored, further slowing economic recovery.
- When the community is affected by significant property damage it is anticipated that funding would be required for infrastructure repair and restoration, temporary services and facilities, overtime pay for responders, as well as normal day-to-day operating expenses.
- Displaced residents may not be able to immediately return to work, further slowing economic recovery.
- Residential structures destroyed by a tornado may not be rebuilt for years, reducing the tax base for the community.
- Large or intense tornadoes may result in a dramatic population fluctuation, as people are unable to return to their homes or jobs and must seek shelter and/or work outside of the affected area.
- Businesses that are uninsured or underinsured may have difficulty reopening, which results in a net loss of jobs for the community and a potential increase in the unemployment rate.
- Recreation activities may be unavailable, and tourism can be unappealing for years following a large tornado, devastating directly related local businesses.

The economic and financial impacts of a tornado event on the community will depend on the scale of the event, what is damaged, costs of repair or replacement, lost business days in impacted areas, and how quickly repairs to critical components of the economy can be implemented. The level of preparedness and pre-event planning done by government, businesses, and citizens will contribute to the overall economic and financial conditions in the aftermath of a tornado event.

Tornadoes can occur at any time of year and at any time of day, but they are typically more common in the spring months during the late afternoon and evening hours. A smaller, high frequency period can emerge in the fall during the brief transition between the warm and cold seasons. According to historical records, the City of Houston can experience a tornado touchdown approximately twice every year or 46 percent annual chance of a tornado event. This frequency supports a “Highly Likely” probability of future events. A summary assessment of tornado hazard vulnerability and impacts to the community lifelines is presented in the following table.

*Table 35: Tornado Vulnerability and Consequence Summary by Lifeline*

Tornado	Vulnerability	Consequence
Safety and Security	Moderate Vulnerability	Moderate Impact to Lifeline/Services
Food, Hydration, Shelter	Moderate Vulnerability	Moderate Impact to Lifeline/Services
Health and Medical	Moderate Vulnerability	Moderate Impact to Lifeline/Services
Energy (Power and Fuel)	High Vulnerability	Significant Impact to Lifeline/Services
Communications	Moderate Vulnerability	Moderate Impact to Lifeline/Services
Transportation	Moderate Vulnerability	Moderate Impact to Lifeline/Services
Hazardous Material	Moderate Vulnerability	Moderate Impact to Lifeline/Services
Water Systems	Moderate Vulnerability	Moderate Impact to Lifeline/Services

Table 35 Source: City of Houston OEM

## Expansive Soils

Expansive soils are soils and soft rocks with a relatively high percentage of clay minerals that are subject to changes in volume as they swell and shrink with changing moisture conditions. Expansive soils contain minerals such as smectite clays that are capable of absorbing water. When these clays absorb water, they increase in volume and expand. The change in soil volume and resulting expansion can exert enough force on a building or other structure to cause damage.

Expansive soils will also lose volume and shrink when they dry. Drought conditions can cause soils to contract in response to a loss of soil moisture. A reduction in soil volume can affect the support to buildings or other structures and result in damage. Fissures in the soil can also develop and facilitate the deep penetration of water when moist conditions or runoff occurs. This produces a cycle of shrinkage and swelling that place repetitive stress on structures. The effect of expansive soil is most prevalent in regions prone to prolonged periods of drought followed by periods of moderate to high precipitation. Expansions in soil of 10 percent or more are not uncommon in the City of Houston planning area.

In Texas the most expansive soils are in a band 200 miles west from the coastline, stretching approximately from Beaumont down to Brownsville. These areas receive the most moisture and are also vulnerable to droughts, which can cause the soil to contract. In the City of Houston planning area, the problems associated with expansive soil typically occur during drought periods. Expansive soils (bentonite, smectite, or other reactive clays) expand when the soil particles attract water and can shrink when the clay dries.

Damages from expansive soils are typically associated with droughts, previous occurrences for expansive soils can be correlated with previous occurrences for drought, which are typically negligible. The City of Houston has experienced three known events. During a wet period in the summer of 2012, the ground expanded and led to cracks in the streets. Drought conditions in 2011 and 2022 caused the clay soil underground to contract and shift leading to thousands of broken water pipes. In total the City experienced 700 main water breaks a day in the summer of 2011, an increase of 200 breaks on a typical summer day.

The amount and depth of potential swelling that can occur in a clay material are, to some extent, functions of the cyclical moisture content in the soil. In drier climates where the moisture content in the soil near the ground surface is low because of evaporation, there is a greater potential for extensive swelling than in the same soil in wetter climates where the variations of moisture content are not as severe. Volume changes in highly expansive soils range between 7 and 10 percent, however under abnormal conditions, they can reach as high as 25 percent.

The City of Houston is primarily (89%) comprised of 4 major soil types. These soils present an expansion index (plasticity index) from low to moderate ranges as described in Table 41.

*Table 36: Primary Soils and Associated Plasticity Index – City of Houston*

SOIL TYPE	PLASTICITY INDEX
Lake Charles Urban Land Part	12-20
Bernard Urban Land Part	12-30
Midland Urban Land Part	12-20
Beaumont Urban Land Part	12-30

Table 36 Source: City of Houston OEM

The effects of expansive soils are most prevalent when periods of moderate to high precipitation are followed by drought and then again by periods of rainfall. Other cases of damage result from increases in moisture volume from such sources as broken or leaking water and sewer lines. Dry clays are capable of absorbing water and will increase in volume in an amount proportional to the amount of water absorbed. Soils capable of changes in volume present a hazard to structures built over them and to the pipelines buried in them. Houses and one-story commercial buildings are more apt to be damaged by the expansion of swelling clays than are multi-story buildings, which are usually heavy enough to counter swelling pressures. However, if constructed on wet clay, multi-story buildings may also be damaged by clay shrinkage when moisture levels are substantially reduced.

Cracked foundations and floors, jammed windows and doors, and ruptured pipelines are typical types of damage resulting from swelling soils. Damage to the upper floors of larger buildings can occur when motion in the structure is

significant. While all infrastructure within the City of Houston planning area is minimally vulnerable, slabs on grade structures are more likely to suffer damage from expansive soils. In addition, older structures built to less stringent building codes may also be more susceptible to damage than new construction.

Expansive soil can directly impact infrastructure and as a result indirectly create impacts on residents. The impact of climate change could produce more severe expansive soils events, exacerbating the current expansive soils impacts. The following are a summary of impacts frequently associated with expansive soils:

- Expansive soils are influenced by the seasonal precipitation-drought cycle. Most impacts on the City of Houston typically occur during extended periods of drought.
- Impacts to lightweight buildings and other infrastructure are most likely to occur. Impacts include uneven settling and shifting in structures; cracks in foundations, walls, streets, driveways, and sidewalks; ruptured pipes; and windows and doors that do not open and close properly.
- 51 percent of homes in the City of Houston were built before 1980 leading them to more susceptible to damages from expansive soils. 265 buildings and sites in the City are on the National Register of Historic Places, many of which pre-date modern building codes.
- Highways (IH-10, IH-45, US-290, US-59, IH-37, and US-83/US-284) and mass transit (METRORail) can be affected by expansive soils.
- Economic impacts are limited to uninsured damages.
- Impacts on people are indirect, with impacts related to disruption in city services such as water and sewer.
- As population grows and development increases in the City the potential risk to expansive soils will also increase.
- Limited impact anticipated to the natural environment other than changes in soil characteristics.

The impact of expansive soils experienced in the City of Houston has resulted in no injuries and fatalities, supporting a “limited” severity of impact meaning injuries and/or illnesses are treatable with first aid, shutdown of facilities and services for 24 hours or less, and less than 10 percent of property is destroyed or with major damage.

A summary assessment of expansive soils hazard vulnerability and impacts to the community lifelines is presented in the following table.

*Table 37: Expansive Soils Vulnerability and Consequence Summary by Lifeline*

Expansive soils	Vulnerability	Consequence
Safety and Security	Low Vulnerability	Low Impact to Lifeline/Services
Food, Hydration, Shelter	Moderate Vulnerability	Low Impact to Lifeline/Services
Health and Medical	Moderate Vulnerability	Low Impact to Lifeline/Services
Energy (Power and Fuel)	Low Vulnerability	Low Impact to Lifeline/Services
Communications	Low Vulnerability	Low Impact to Lifeline/Services
Transportation	Moderate Vulnerability	Low Impact to Lifeline/Services
Hazardous Material	Moderate Vulnerability	Low Impact to Lifeline/Services
Water Systems	Moderate Vulnerability	Low Impact to Lifeline/Services

Table 37 Source: City of Houston OEM

## Hail

Hailstorm events are a potentially damaging outgrowth of severe thunderstorms. During the developmental stages of a hailstorm, ice crystals form within a low-pressure front due to the rapid rising of warm air into the upper atmosphere

and the subsequent cooling of the air mass. Frozen droplets gradually accumulate into ice crystals until they fall as frozen masses of round or irregularly shaped ice typically greater than 0.75 inches in diameter. The size of hailstones is a direct result of the size and severity of the storm. High velocity updraft winds are required to keep hail in suspension in thunderclouds. The strength of the updraft is a by-product of heating on the Earth's surface. Higher temperature gradients above Earth's surface result in increased suspension time and hailstone size.

According to the National Insurance Crime Bureau (NICB), between 2018 and 2020 the State of Texas had the greatest number of hail loss claims in the United States with 605,866 loss claims (23 percent of total hail claims in the U.S.) due to hail events. In this two-year period Texas experienced a total of 584 severe hail days. In 2021, 6.8 million properties in the U.S. experienced one or more damaging hail events, resulting in a total of \$16.5 billion in insured losses. Texas had the highest number of properties affected by hail with over 1.5 million properties or 17 percent of total properties in the state affected; an increase of 80,000 properties affected between 2020 and 2021. Texas hailstorms accounted for almost a quarter of total U.S. properties affected by hail in 2021, with Harris County experiencing the most damages with an estimated 169,579 properties affected by hailstorms.

Hailstorms are an extension of severe thunderstorms that could potentially cause severe damage. As a result, they are not confined to any specific geographic location and can vary greatly in size, location, intensity, and duration. Therefore, the entire City of Houston planning area is equally at risk to hail events.

The National Weather Service (NWS) classifies a storm as "severe" if there is hail three-quarters of an inch in diameter (approximately the size of a penny) or greater, based on radar intensity or as seen by observers.

#### *Vulnerability and Impact*

Much of the damage inflicted by hail is to crops. Even relatively small hail can shred plants to ribbons in a matter of minutes. Vehicles, roofs of buildings and homes, and landscaping are most commonly damaged by hail.

Utility systems on roofs of City buildings and critical facilities would be vulnerable and could be damaged. Hail could cause a significant threat to people as they could be struck by hail and falling trees and branches. Outdoor activities and events may elevate the risk to residents and visitors when a hailstorm strikes with little warning. Portable buildings typically utilized by schools and commercial sites such as construction areas would be more vulnerable to hail events than the typical site-built structures.

The City of Houston planning area features mobile or manufactured home parks throughout the planning area. These parks are typically more vulnerable to hail events than typical site-built structures. In addition, manufactured homes are located sporadically throughout the planning area which would also be more vulnerable

Hail events have the potential to pose a significant risk to people and can create dangerous situations. The impact of climate change could produce larger, more severe hail events, exacerbating the current hail impacts. Worsening hail conditions can be frequently associated with a variety of impacts, including:

- Hail may create hazardous road conditions during and immediately following an event, delaying first responders from providing for or preserving public health and safety.
- Individuals and first responders who are exposed to the storm may be struck by hail, falling branches, or downed trees resulting in injuries or possible fatalities.
- Residential structures can be damaged by falling trees, which can result in physical harm to occupants.
- Large hail events will likely cause extensive roof damage to residential structures along with siding damage and broken windows, creating a spike in insurance claims and a rise in premiums.
- Automobile damage may be extensive depending on the size of the hail and length of the storm.
- Hail events can result in power outages over widespread areas, increasing the risk to more vulnerable portions of the population who rely on power for health and/or life safety.

- Extended power outages can result in an increase in structure fires and/or carbon monoxide poisoning, as individuals attempt to cook or heat their home with alternate, unsafe cooking or heating devices, such as grills.
- First responders are exposed to downed power lines, damaged structures, hazardous spills, and debris that often accompany hail events, elevating the risk of injury to first responders and potentially diminishing emergency response capabilities.
- Downed power lines and large debris, such as downed trees, can result in the inability of emergency response vehicles to access areas of the community.
- Hazardous road conditions may prevent critical staff from reporting for duty, limiting response capabilities.
- Economic disruption negatively impacts the programs and services provided by the community due to short- and long-term loss in revenue.
- Some businesses not directly damaged by the hail event may be negatively impacted while roads are cleared and utilities are being restored, further slowing economic recovery.
- Businesses that are more reliant on utility infrastructure than others may suffer greater damages without a backup power source.
- Hazardous road conditions will likely lead to increases in automobile accidents, further straining emergency response capabilities.
- Depending on the severity and scale of damage caused by large hail events, damage to power transmission and distribution infrastructure can require days or weeks to repair.
- A significant hail event could significantly damage agricultural crops, resulting in extensive economic losses for the community and surrounding area.
- Hail events may injure or kill livestock and wildlife.
- A large hail event could impact the accessibility of recreational areas and parks due to extended power outages or debris clogged access roads.

The economic and financial impacts of hail will depend entirely on the scale of the event, what is damaged, and how quickly repairs to critical components of the economy can be implemented. The level of preparedness and pre-event planning conducted by the community, local businesses, and citizens will contribute to the overall economic and financial conditions in the aftermath of any hail event. The frequency of historic events supports a highly likely probability of future events for the Houston area. A summary assessment of hail hazard vulnerability and impacts to the community lifelines is presented in the following table.

*Table 38: Hail Vulnerability and Consequence Summary by Lifeline*

Hail	Vulnerability	Consequence
Safety and Security	Moderate Vulnerability	Low Impact to Lifeline/Services
Food, Hydration, Shelter	Moderate Vulnerability	Low Impact to Lifeline/Services
Health and Medical	Moderate Vulnerability	Low Impact to Lifeline/Services
Energy (Power and Fuel)	Moderate Vulnerability	Low Impact to Lifeline/Services
Communications	Low Vulnerability	Moderate Impact to Lifeline/Services
Transportation	Moderate Vulnerability	Low Impact to Lifeline/Services
Hazardous Material	Moderate Vulnerability	Low Impact to Lifeline/Services
Water Systems	Moderate Vulnerability	Low Impact to Lifeline/Services

Table 38 Source: City of Houston OEM

Hail has been known to cause injury to humans and occasionally has been fatal. Overall, the average loss estimate of property and crops in the planning area is considered \$35,431,998 with an average annualized loss of \$528,836. Based on historic loss and damages, the impact of hail damages on the City of Houston planning area can be considered "Limited" severity of impact, meaning minor quality of life lost, critical facilities and services shut down for 24 hours or less, and less than 10 percent of property destroyed or with major damage.



## Wildfire

A wildfire event can rapidly spread out of control and occurs most often in the summer when the brush is dry and flames can move unchecked through a highly vegetative area. Wildfires can start as a slow burning fire along the forest floor, killing and damaging trees. The fires often spread more rapidly as they reach the tops of trees with wind carrying the flames from tree to tree. Usually, dense smoke is the first indication of a wildfire. A wildfire event often begins unnoticed and spreads quickly, lighting brush, trees, and homes on fire. For example, a wildfire may be started by a campfire that was not doused properly, a tossed cigarette, burning debris, or arson.

Texas has seen a significant increase in the number of wildfires in the past 30 years, which included wildland, interface, or intermix fires. Wildland fires are fueled almost exclusively by natural vegetation, while interface or intermix fires are urban/wildland fires in which vegetation and the built environment provide the fuel.

A wildfire event can be a potentially damaging consequence of drought conditions, lightning, or wind events if the conditions allow. Wildfires can vary greatly in terms of size, location, intensity, and duration. While wildfires are not confined to any specific geographic location, they are most likely to occur in open grasslands. The threat to people and property from a wildfire event is greater in the fringe areas where developed areas meet open grass lands, such as the Wildland Urban Interface (WUI) (Figure 22). It is estimated that 14.3 percent of the total population in the City of Houston live within the WUI. However, the entire City of Houston planning area is at some risk for wildfires.

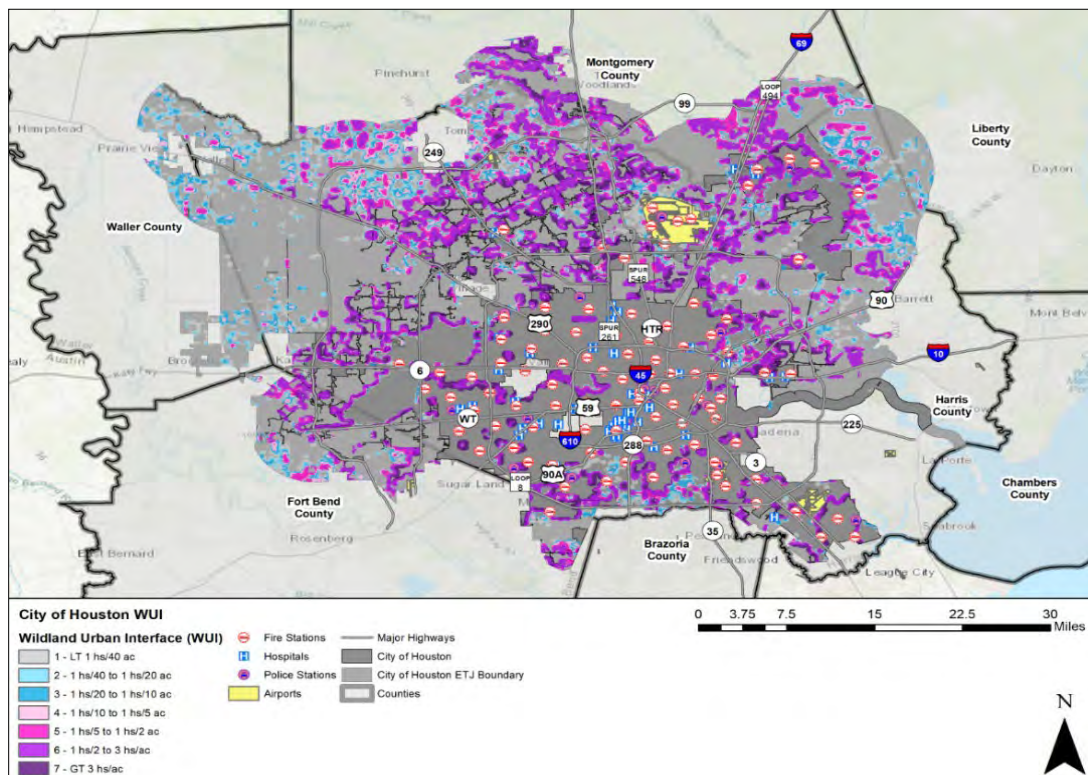


Figure 18: Windland Urban Interface Map - City of Houston

The Texas Forest Service reported 830 wildfire events between 2005 and 2021. The National Centers for Environmental Information (NCEI) did not include any wildfire events from 1996 through 2022. The Texas Forest Service (TFS) started collecting wildfire data reported by volunteer fire departments in 2005. Due to a lack of

recorded data for wildfire events prior to 2005, frequency calculations are based on a seventeen-year reporting period, using only data from recorded years.

Table 39: Historical Wildfire Events Summary, 2005 - 2021

JURISDICTION	NUMBER OF EVENTS	ACRES BURNED
City of Houston	830	2,391

Table 39 Source: City of Houston Hazard Mitigation Plan

Table 40: Historical Wildfire Events by Year

JURISDICTION	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
City of Houston	2	0	1	1	0	1	26	4	3	3	2	0	2	0	265	216	304
Total: 830																	

Table 40 Source: City of Houston Hazard Mitigation Plan

Periods of drought, dry conditions, high temperatures, and low humidity are factors that contribute to the occurrence of a wildfire event, as was experienced in 2011. Areas along railroads and people whose homes are in woodland settings have an increased risk of being affected by wildfire.

The heavily populated, urban areas of City of Houston are not likely to experience large, sweeping fires. Unoccupied buildings and open spaces that have not been maintained have the greatest vulnerability to wildfire. The overall level of concern for wildfires is located mostly along the perimeter of the study area where wildland and urban areas interface. Areas along major highways in the City have an increased vulnerability where empty lots and unoccupied areas are located.

Diminished air quality is an environmental impact that can result from a wildfire event and pose a potential health risk. The smoke plumes from wildfires can contain potentially inhaling carcinogenic matter. Fine particles of invisible soot and ash that are too small for the respiratory system to filter can cause immediate and possibly long-term health effects. The elderly or those individuals with compromised respiratory systems may be more vulnerable to the effects of diminished air quality after a wildfire event.

For the City of Houston planning area, the impact from a wildfire event can be considered "Limited," meaning injuries and/or illnesses are treatable with first aid, shutdown of facilities and services for 24 hours or less, and less than 10 percent of property is destroyed or with major damage. Severity of impact is gauged by acreage burned, homes and structures lost, injuries and fatalities.

Table 41: Impact for City of Houston

JURISDICTION	IMPACT	DESCRIPTION
City of Houston	Limited	City of Houston has an estimated 330,159 people or 14.3% of the total population that live within the Wildland Urban Interface (WUI). Average housing density is most commonly 3 houses per 1 acre. City of Houston citizens may suffer minor injuries that can be treated with first aid. Critical facilities could be shut down for 24 hours or less, and less than 10 percent of total property could be damaged.

Table 41 Source: City of Houston Hazard Mitigation Plan

A Wildfire event poses a potentially significant risk to public health and safety, particularly if the wildfire is initially unnoticed and spreads quickly. The impacts associated with a wildfire are not limited to direct damage. The impact of climate change could produce larger, more widespread wildfire events, exacerbating the current wildfire impacts. Significant wildfire events can be frequently associated with a variety of impacts, including:



- The City of Houston's urban parks include 39,501 acres of open space. Community assets including places like Memorial Park or the Armand Bayou Nature Center are vulnerable to the impacts of wildfire events. Recreation and tourism can be unappealing for years following a large wildfire, devastating directly related businesses.
- Recreation activities throughout the City's parks may be unavailable and tourism can be unappealing for years following a large wildfire event, devastating directly related local businesses and negatively impacting economic recovery
- Persons in the area at the time of the fire are at risk for injury or death from burns and/or smoke inhalation.
- First responders are at greater risk of physical injury since they are near the hazard while extinguishing flames, protecting property or evacuating residents in the area.
- First responders can experience heart disease, respiratory problems, and other long term related illnesses from prolonged exposure to smoke, chemicals, and heat.
- Emergency services may be disrupted during a wildfire if facilities are impacted, and roadways are inaccessible, or personnel are unable to report for duty.
- Critical city departments may not be able to function and provide necessary services depending on the location of the fire and the structures or personnel impacted.
- Non-critical businesses may be directly damaged, suffer loss of utility services, or be otherwise inaccessible, delaying normal operations and slowing the recovery process.
- Displaced residents may not be able to immediately return to work, further slowing economic recovery.
- Roadways in or near the WUI could be damaged or closed due to smoke and limited visibility.
- Older homes are generally exempt from modern building code requirements, which may require fire suppression equipment in the structure. 51 percent of homes in City were built before 1980. 265 buildings and sites in the City are on the National Register of Historic Places, many of which pre-date modern building codes.
- Vegetation in the City's urban parks may be destroyed in a wildfire, impacting air quality and public health.
- Some high-density neighborhoods feature small lots with structures close together, increasing the potential for fire to spread rapidly.
- Air pollution from smoke may exacerbate respiratory problems of vulnerable residents.
- Charred ground after a wildfire cannot easily absorb rainwater, increasing the risk of flooding and potential mudflows.
- Wildlife may be displaced or destroyed.
- Historical or cultural resources may be damaged or destroyed.
- Tourism can be significantly disrupted, further delaying economic recovery for the area.
- Economic disruption negatively impacts the programs and services provided by the community due to short and long- term loss in revenue.
- Fire suppression costs can be substantial, exhausting the financial resources of the community.
- Residential structures lost in a wildfire may not be rebuilt for years, reducing the tax base for the community.
- Direct impacts to municipal water supply may occur through contamination of ash and debris during the fire, destruction of aboveground delivery lines, and soil erosion or debris deposits into waterways after the fire.
- Tourism and recreational activities could be impacted and can be unappealing for years following a large wildfire, devastating directly related businesses.

The economic and financial impacts of a wildfire event on local government will depend on the scale of the event, what is damaged, costs of repair or replacement, lost business days in impacted areas, and how quickly repairs to critical components of the economy can be implemented. The level of preparedness and pre-event planning done by government, businesses, and citizens will contribute to the overall economic and financial conditions in the aftermath of a wildfire event.

A summary assessment of wildfire hazard vulnerability and impacts to the community lifelines is presented in the following table.

*Table 42: Wildfire Vulnerability and Consequence Summary by Lifeline*

Wildfire	Vulnerability	Consequence
Safety and Security	Low Vulnerability	Moderate Impact to Lifeline/Services
Food, Hydration, Shelter	Moderate Vulnerability	Moderate Impact to Lifeline/Services
Health and Medical	Low Vulnerability	Moderate Impact to Lifeline/Services
Energy (Power and Fuel)	Moderate Vulnerability	Moderate Impact to Lifeline/Services
Communications	Low Vulnerability	Significant Impact to Lifeline/Services
Transportation	Low Vulnerability	Significant Impact to Lifeline/Services
Hazardous Material	Low Vulnerability	Moderate Impact to Lifeline/Services
Water Systems	Low Vulnerability	Moderate Impact to Lifeline/Services

Table 42 Source: City of Houston OEM

Wildfires require the alignment of several factors, including temperature, humidity, and the lack of moisture in fuels, such as trees, shrubs, grasses, and forest debris. All these factors have strong direct or indirect ties to climate variability and climate change. Research shows that changes in climate create warmer, drier conditions, leading to longer and more active fire seasons. Increases in temperatures and the thirst of the atmosphere due to human-caused climate change have increased aridity of forest fuels during the fire season. Extreme heat and extended periods of drought contribute to wildfire risk in the planning area. Extreme temperatures and periods of drought destroy vegetation in the area, contributing to available fuels that spread wildfires.

## Drought

Drought is a period of time without substantial rainfall that persists from one year to the next. Drought is a normal part of virtually all climatic regions, including areas with high and low average rainfall. Drought is the consequence of anticipated natural precipitation reduction over an extended period, usually a season or more in length. Droughts can be classified as meteorological, hydrologic, agricultural, and socioeconomic. Table 48 presents definitions for these different types of droughts.

Droughts are one of the most complex of all natural hazards as it is difficult to determine their precise beginning or end. In addition, droughts can lead to other hazards such as extreme heat and wildfires. Their impact on wildlife and area farming is enormous, often killing crops, grazing land, edible plants, and even in severe cases, trees. A secondary hazard to drought is wildfire because dying vegetation serves as a prime ignition source. Therefore, a heat wave combined with a drought is a very dangerous situation.

Table 43: Drought Classification Definitions<sup>3</sup>

<b>Meteorological Drought</b>	The degree of dryness, as measured as departure of actual precipitation from an expected average or normal amount based on monthly, seasonal, or annual time scales.
<b>Hydrologic Drought</b>	The effects of precipitation shortfalls on stream flows and reservoir, lake, and groundwater levels.
<b>Agricultural Drought</b>	Soil moisture deficiencies relative to water demands of plant life, usually crops.
<b>Socioeconomic Drought</b>	The effect of demand for water exceeds the supply as a result of a weather-related supply shortfall.

Table 43 Source: City of Houston OEM

Droughts occur regularly throughout Texas and the City of Houston and are a normal condition. However, they can vary greatly in terms of their intensity and duration. The U.S. Drought Monitor, produced through a partnership between the National Drought Mitigation Center at the University of Nebraska-Lincoln, U.S. Department of Agriculture and the National Oceanic and Atmospheric Administration, shows the planning area is currently not experiencing drought conditions but has experienced a range of conditions from abnormally dry to exceptional drought conditions over the last decade. There is no distinct geographic boundary to drought; therefore, it can occur throughout the City of Houston planning area equally.

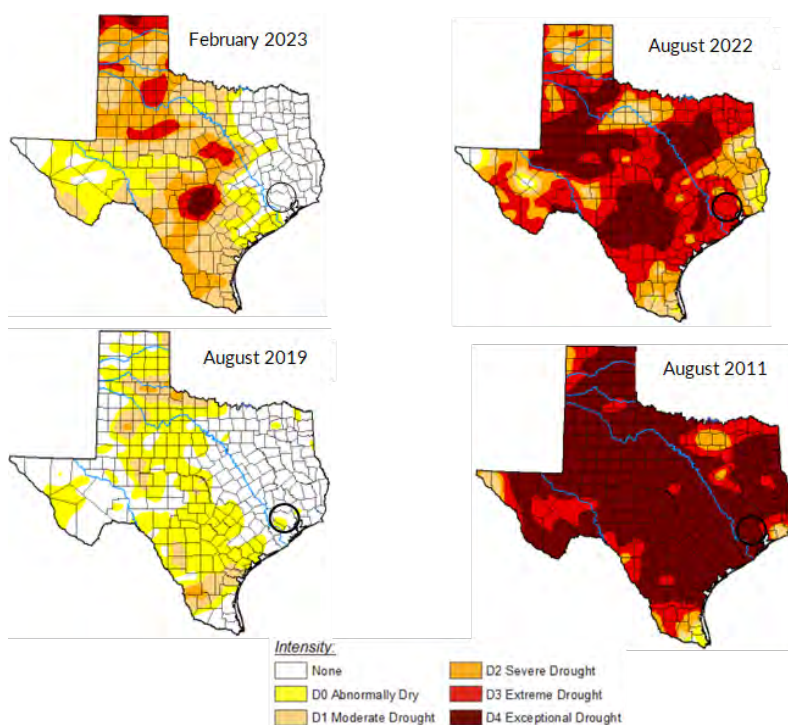


Figure 19: U.S. Drought Monitor, February 2023, August 2022, August 2019, August 2011

The City of Houston has a combination of over 1.2 billion gallons per day of reliable surface water rights and over 200 million gallons per day of available groundwater supplies.16 Houston's Drinking Water Operations (DWO) is responsible for operating and maintaining three water purification plants and 56 ground water plants. Houston's water

<sup>3</sup> Source: Multi-Hazard Identification and Risk Assessment: A Cornerstone of the National Mitigation Strategy, Federal Emergency Management Agency (FEMA).

system serves approximately 2.2 million citizens each day and spans over 600 square miles serving four counties, therefore, making it one of the most complex water systems in the nation.

Local lakes and rivers supply the City of Houston's surface water resources. The City of Houston's water supply flows from the Trinity River into Lake Livingston, and from the San Jacinto River into Lake Conroe and Lake Houston, making up 87 percent of Houston's water supply. Deep underground wells drilled into the Evangeline and Chicot aquifers currently provide the other 13 percent of the City's water supply. While the planning area relies on multiple water resources, high demand can deplete these resources during extreme drought conditions. As resources are depleted, potable water is in short supply and overall water quality can suffer, elevating health concerns for all residents but especially vulnerable populations – typically children, the elderly, and the ill. In addition, potable water is used for drinking, sanitation, patient care, sterilization, equipment, heating and cooling systems, and many other essential functions in medical facilities.

The average person will survive only a few days without potable water, and this timeframe can be drastically shortened for those people with more fragile health – typically children, the elderly, and the ill. Population over 65 in the City of Houston planning area is estimated at 11 percent of the total population and children under the age of 5 are estimated at 7 percent, or an estimated total of 420,297 potentially vulnerable residents in the planning area based on age. In addition, an estimated 19.5 percent of the planning area population live below the poverty level which may contribute to the overall health impacts of a drought.

This population is also vulnerable to food shortages when drought conditions exist, and potable water is in short supply. Potable water is used for drinking, sanitation, patient care, sterilization, equipment, heating and cooling systems, and many other essential functions in medical facilities. All residents in the City of Houston planning area could be adversely affected by drought conditions, which could limit water supplies and present health threats. During summer drought, or hot and dry conditions, elderly persons, small children, infants and the chronically ill who do not have adequate cooling units in their homes may become more vulnerable to injury and/or death.

The economic impact of droughts can be significant as they produce a complex web of impacts that spans many sectors of the economy and reach well beyond the area experiencing physical drought. This complexity exists because water is integral to our ability to produce goods and provide services. If droughts extend over a number of years, the direct and indirect economic impact can be significant.

Crop production can also suffer greatly during extreme drought conditions, limiting fresh local food supplies, driving up costs, and negatively impacting the local economy. The City of Houston has embraced community food production, from rooftop gardens to urban schoolyards. Drought conditions could adversely affect urban farming projects throughout the city.

Habitat damage is a vulnerability of the environment during periods of drought for both aquatic and terrestrial species. The environment also becomes vulnerable during periods of extreme or prolonged drought due to severe erosion and land degradation. The city's tree canopy and urban parks are also vulnerable to prolonged drought conditions as was experienced during the 2011 drought. Impact of droughts experienced in the City of Houston planning area, have not resulted injuries or fatalities supporting a "Minor" severity of impact meaning injuries and/or illnesses do not result in permanent disability, shutdown of facilities and services for more than one week, and more than 10 percent of property is destroyed or with major damage.

Drought has the potential to impact people in the City of Houston planning area. While it is rare that drought, in and of itself, leads to a direct risk to the health and safety of people in the U.S., severe water shortages could result in inadequate supply for human needs. The impact of climate change could produce longer, more severe droughts, exacerbating the current drought impacts. Severe drought conditions can be frequently associated with a variety of impacts, including:

- Dry clay soil can lead to water main lines shifting and break. Often repair to water lines includes shutting off water to multiple homes at one time.
- The number of health-related low-flow issues (e.g., diminished sewage flows, increased pollution concentrations, reduced firefighting capacity, cross-connection contamination), will increase as the drought intensifies.
- Public safety issues from forest/range/wildfires will increase as water availability and/or pressure decreases.
- Respiratory ailments may increase as the air quality decreases.
- There may be an increase in disease due to wildlife concentrations (e.g., rabies, Rocky Mountain spotted fever, Lyme disease).
- Jurisdictions and residents may disagree over water use/water rights, creating conflict.
- Residents may disagree with the City over water use/water rights, creating conflict.
- Political conflicts may increase between municipalities, counties, states, and regions.
- Water management conflicts may arise between competing interests.
- Increased law enforcement activities may be required to enforce water restrictions.
- Severe water shortages could result in inadequate supply for human needs as well as lower quality of water for consumption.
- During drought, there is an increased risk for wildfires and dust storms.
- The community may need increased operational costs to enforce water restrictions or rationing.
- Prolonged drought can lead to increases in illness and disease related to drought
- Firefighters may have limited water resources to aid in firefighting and suppression activities, increasing risk to lives and property.
- Utility providers can see decreases in revenue as water supplies diminish.
- Utilities providers may cut back energy generation and service to their customers to prioritize critical service needs.
- Hydroelectric power generation facilities and infrastructure would have significantly diminished generation capability. Dams simply cannot produce as much electricity from low water levels as they can from high water levels.
- Fish and wildlife food and habitat will be reduced or degraded over time during a drought and disease will increase, especially for aquatic life.
- Wildlife will move to more sustainable locations, creating higher concentrations of wildlife in smaller areas, increasing vulnerability and further depleting limited natural resources.
- Severe and prolonged drought can result in the reduction of a species or cause the extinction of a species altogether.
- Plant life will suffer from long-term drought. Wind and erosion will also pose a threat to plant life as soil quality will decline. The urban tree canopy, including city parks, are vulnerable to the impacts of prolonged drought.
- Dry and dead vegetation will increase the risk of wildfire.
- Recreational activities that rely on water may be curtailed, such as canoeing at the Armand Bayou Nature Center, resulting in fewer tourists and lower revenue.
- Drought poses a significant risk to annual and perennial crop production and overall crop quality, leading to higher food costs.
- Drought related declines in production may lead to an increase in unemployment.
- Drought may limit livestock grazing resulting in decreased livestock weight, potential increased livestock mortality, and increased cost for feed.
- Negatively impacted water suppliers may face increased costs resulting from the transport of water or developing supplemental water resources.
- Long-term drought may negatively impact future economic development.
- Unlikely to have an impact on continuity of operations until prolonged severe or extreme levels are reached.
- Government functionality may be questioned and challenged if planning, response, and recovery are not timely and effective, impacting public confidence.

The overall extent of damage caused by periods of drought is dependent on its extent and duration. The level of preparedness and pre-event planning done by the government, businesses, and citizens will contribute to the overall economic and financial conditions in the aftermath of a drought event.

A summary assessment of drought hazard vulnerability and impacts to the community lifelines is presented in the following table.

*Table 44: Drought Vulnerability and Consequence Summary by Lifeline*

Drought	Vulnerability	Consequence
Safety and Security	High Vulnerability	Low Impact to Lifeline/Services
Food, Hydration, Shelter	High Vulnerability	Low Impact to Lifeline/Services
Health and Medical	Moderate Vulnerability	Low Impact to Lifeline/Services
Energy (Power and Fuel)	High Vulnerability	Low Impact to Lifeline/Services
Communications	Low Vulnerability	Low Impact to Lifeline/Services
Transportation	Low Vulnerability	Low Impact to Lifeline/Services
Hazardous Material	Low Vulnerability	Low Impact to Lifeline/Services
Water Systems	Moderate Vulnerability	Low Impact to Lifeline/Services

Table 44 Source: City of Houston OEM

With the range of factors influencing drought conditions, it is impossible to make quantitative statewide projections of drought trends; however, many factors point toward increased drought severity. Drought will continue to be driven largely by precipitation variability over multiple decades, with long-term precipitation trends expected to be relatively small. Other factors affecting drought impacts, such as increased temperatures and improved plant water use efficiency, decrease water availability but will cause drought impact trends to be highly sector-specific, with the impacts possibly smaller for agriculture than for surface water supply.

According to the Houston Climate Impact Assessment 2.0, the City of Houston will experience an increased likelihood of droughts in the future due to an estimated increase in the number of dry days in the City of Houston area. In addition, it is projected that future changes to the City of Houston will include increased temperatures, longer multi-day heatwaves and greater variability in precipitation, with an expected decrease in precipitation in the summer and increase in the fall.

## Dam Failure

Dams are water storage, control, or diversion structures that impound water upstream in reservoirs. Dam failure can take several forms, including a collapse of or breach in the structure. While most dams have storage volumes small enough that failures have few or no repercussions, dams storing large amounts can cause significant flooding downstream. Dam failures can result from any one or a combination of the following causes:

- Prolonged periods of rainfall and flooding, which cause most failures;
- Inadequate spillway capacity, resulting in excess overtopping of the embankment;
- Internal erosion caused by embankment or foundation leakage or piping;
- Improper maintenance, including failure to remove trees, repair internal seepage problems, or maintain gates, valves, and other operational components; Improper design or use of improper construction materials;
- Failure of upstream dams in the same drainage basin;
- High winds, which can cause significant wave action and result in substantial erosion;
- Destructive acts of terrorism; and,

## Hazard Mitigation Plan Excerpt

- Earthquakes, which typically cause longitudinal cracks at the tops of the embankments, leading to structural failure.

Benefits provided by dams include water supplies for drinking; irrigation and industrial uses; flood control; hydroelectric power; recreation; and navigation. Dams in Texas serve many purposes, some of which include recreation, flood mitigation, irrigation, water supply, and fire protection

Texas has 7,413 dams, all regulated by the Texas Commission on Environmental Quality (TCEQ). The National Dam Safety Review Board (in coordination with FEMA) and the National Inventory of Dams (NID) lists a total of five dams that pose a risk to the City of Houston planning area including one dam three miles outside of the city limits that is owned by the City of Houston. Each of these dams were analyzed individually by location, volume, elevation, and condition (where available) when determining the risk, if any, for each dam. Each dam site was further analyzed for potential risks utilizing FEMA's National Flood Hazard Layer (where available) to map locations and fully understand development near the dam and topographical variations that may increase risk.

Two of the dams listed were embankments for typically dry detention drainage areas. These types of structures are utilized for flood control and do not pose a dam failure risk. Dams that were deemed to pose no past, current, or future risk to the planning area are not profiled in the plan as no loss of life or impact to critical facilities or infrastructure is expected in the event of a breach. Based on this analysis, the planning team was able to determine that only 3 of the 5 dams identified pose a risk to the planning area (Table 45). Figure 20 illustrates general locations for each dam posing a potential risk to the planning area.

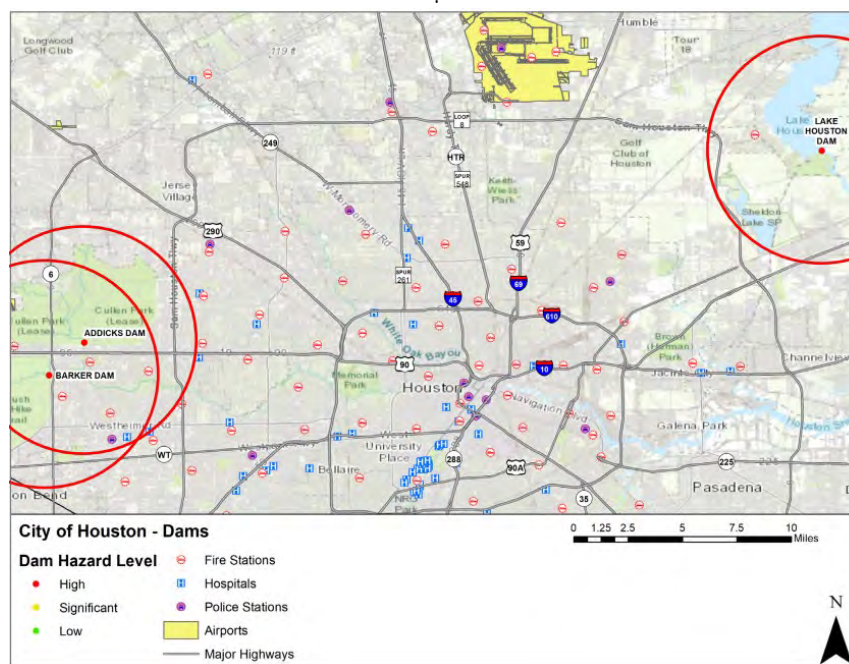


Figure 20: Dams with Potential Risk to the City of Houston

Table 45: City of Houston Dam Survey

Location	Dam Name	Classification	Height (Ft.)	Max Storage (Acre Ft.)	Dam Type	Condition	Owner	EAP	Profiled
Houston	Barker Dam	High	42	209,000	Earth	Unsatisfactory	Federal	Yes	Yes
Houston	Addicks Dam	High	52	200,800	Earth	Unsatisfactory	Federal	Yes	Yes
Magnolia Gardens	Lake Houston Dam	Not Available	66	281,800	Earth	Satisfactory	City of Houston	Yes	Yes

Table 45 Source: City of Houston OEM



While inundation maps are not available for the profiled dams, an estimated inundation radius has been included on the location map for each profiled dam (indicated by the red circle). For dams with a maximum storage capacity of 100,000 acre-feet or more, all structures within five miles are considered to be at risk to potential dam failure hazards. For dams with a maximum storage capacity between 10,000 and 100,000 acre-feet, all structures within three miles are considered to be at risk to potential dam failure hazards. For dams with a maximum storage capacity of less than 10,000 acre-feet, all structures within one mile are considered to be at risk to potential dam failure hazards.

Table 46: Extent Summaries Per Profiled Dam

PROFILED DAM	EXTENT (Flow Depth)	LEVEL OF INTENSITY TO MITIGATE
Barker Dam	0-15 Feet	While extensive damages and impacts to critical facilities or infrastructure are not anticipated in the event of a failure, as a High Hazard classified dam the consequences of a potential failure will likely cause loss of life as a result of a failure event.
Addicks Dam	0-15 Feet	While extensive damages and impacts to critical facilities or infrastructure are not anticipated in the event of a failure, as a High Hazard classified dam the consequences of a potential failure will likely cause loss of life as a result of a failure event.
Lake Houston Dam	0-25 Feet	While extensive damages and impacts to critical facilities or infrastructure are not anticipated in the event of a failure, as a High Hazard classified dam the consequences of a potential failure will likely cause loss of life as a result of a failure event.

Table 46 Source: City of Houston OEM

There have been no major dam failures that have affected the City of Houston planning area in the past. However, Hurricane Harvey did have impacts on the dams within the City. In the aftermath of Hurricane Harvey, it was determined to allow a controlled release of both Addicks and Barker Dams. According to Harris County Flood Control District the combined rate of controlled release was 4,000 cubic feet per second. Water was released into concrete-armored spillways which is preferable to overtopping the dams. Neighborhoods both upstream and downstream experienced additional flooding as a result from this controlled release. Upstream experienced flooding because of the overflow in the reservoirs that were backing up behind the dams. Downstream the water was released into Buffalo Bayou which was already experiencing flooding.<sup>4</sup>

The Texas Tribune states the Army Corp of Engineers believes if there was a failure the damage could exceed 60 million dollars and nearly 1 million residents could be impacted. While homes and business flooded, the damage sustained was less than what an over capped dam would do to the community of Houston. Evacuations were considered voluntary and were not mandated during the controlled release. Approximately 53 neighborhoods are located within the Addicks Watershed and 40 within Barker Dam.<sup>5</sup>

There are 5 dams in the City of Houston planning area (including one dam three miles outside of the City limits that is owned by the City of Houston). All dams were evaluated in-depth to determine the risk, if any, associated with each dam. This analysis indicated 3 of the dams identified present a risk to structures or infrastructure in the planning area. These dams will be reevaluated in the next planning process to confirm if risk has changed. As development increases in the City there is the potential for dams classified as low hazard to be reclassified as development and populations near these dams increase.

<sup>4</sup> Source: Harris County Flood Control District <https://www.hcfcd.org/hurricane-harvey/flooding-impacts-in-connection-with-the-reservoirs/>

<sup>5</sup> Source: Texas Tribune: <https://www.texastribune.org/2017/08/29/q-why-houstons-reservoirs-arent-going-fail/>



Flooding is the most prominent effect of dam failure. If the dam failure is extensive, a large amount of water would enter the downstream waterways forcing them out of their banks. There may be significant environmental effects, resulting in flooding that could disperse debris and hazardous materials downstream that can damage local ecosystems. If the event is severe, debris carried downstream can block traffic flow, cause power outages, and disrupt local utilities, such as water and wastewater, which could result in school closures.

Any individual dam has a very specific area that will be impacted by a catastrophic failure. Dams identified as high or significant hazard can directly threaten the lives of individuals living or working in the inundation zone below the dam. The impact from any catastrophic failure would be similar to that of a flash flood. The impact of climate change could produce greater risk of dam failure due to larger more frequent floods, exacerbating the current dam failure impacts. Dam failure threats can be associated with a variety of impacts, including:

- Addicks and Barker Dams are classified as high hazard potential dams and would result in lives lost in the event of a failure.
- Future development downstream of dams has the potential to increase dam classification to significant or high hazard potential.
- Injuries from debris carried by the floodwaters are possible.
- Swift-water rescue of individuals trapped by the water puts the immediate responders at risk for their own lives.
- Individuals involved in the cleanup may be at risk from the debris left behind.
- Continuity of operations for any jurisdiction outside the direct impact area could be very limited.
- Roads and bridges downstream of a dam failure could be destroyed.
- Homes and businesses downstream of a dam could be damaged or destroyed.
- Emergency services may be temporarily unavailable.
- Disruption of operations and the delivery of services in the impacted area.
- A large dam with a high head of water could effectively scour the terrain below it for miles, taking out all buildings and other infrastructure.
- Scouring force could erode soil and any buried pipelines.
- Scouring action of a large dam will destroy all vegetation in its path.
- Wildlife and wildlife habitats caught in the flow will likely be destroyed.
- Fish habitat will likely be destroyed.
- Topsoil will erode, slowing the return of natural vegetation.
- The destructive high velocity water flow may include substantial debris and hazardous materials, significantly increasing the risks to life and property in its path.
- Debris and hazardous material deposited downstream may cause further pollution of areas far greater than the inundation zone.
- Destroyed businesses and homes may not be rebuilt, reducing the tax base and impacting long term economic recovery.
- Historical or cultural resources may be damaged or destroyed. There are 265 buildings and sites in the City that are listed on the National Register of Historic Places.
- Recreational activities and tourism may be temporarily unavailable or unappealing, slowing economic recovery.

The economic and financial impacts of dam failure on the area will depend entirely on the location of the dam, scale of the event, what is damaged, and how quickly repairs to critical components of the economy can be implemented. The level of preparedness and pre-event planning done by the government, community, local businesses, and citizens will also contribute to the overall economic and financial conditions in the aftermath of any dam failure event.

A summary assessment of dam failure hazard vulnerability and impacts to the community lifelines is presented in the following table.

*Table 47: Dam Failure Vulnerability and Consequence Summary by Lifeline*

Dam Failure	Vulnerability	Consequence
Safety and Security	Moderate Vulnerability	Significant Impact to Lifeline/Services
Food, Hydration, Shelter	Moderate Vulnerability	Significant Impact to Lifeline/Services
Health and Medical	Moderate Vulnerability	Significant Impact to Lifeline/Services
Energy (Power and Fuel)	Moderate Vulnerability	Significant Impact to Lifeline/Services
Communications	Moderate Vulnerability	Significant Impact to Lifeline/Services
Transportation	Moderate Vulnerability	Significant Impact to Lifeline/Services
Hazardous Material	Moderate Vulnerability	Significant Impact to Lifeline/Services
Water Systems	Moderate Vulnerability	Significant Impact to Lifeline/Services

Table 47 Source: City of Houston OEM

## Winter Storms

A severe winter storm event is identified as a storm with snow, ice, or freezing rain. This type of storm can cause significant problems for area residents. Winter storms are associated with freezing or frozen precipitation such as freezing rain, sleet, snow, and the combined effects of winter precipitation and strong winds. Wind chill is a function of temperature and wind. Low wind chill is a product of high winds and freezing temperatures.

Winter storms that threaten the City of Houston planning area usually begin as powerful cold fronts that push south from central Canada. Although the City is at risk to ice hazards, extremely cold temperatures, and snow, the effects and frequencies of winter storm events are generally mild and short-lived.

Winter storm events are not confined to specific geographic boundaries. Therefore, all existing and future buildings, facilities, and populations in the City of Houston are considered to be exposed to a winter storm hazard and could potentially be impacted.

While the entire City of Houston is vulnerable to winter storm events, the areas of the City that reported the highest percentage of damages after Winter Storm Uri in February 2021, were concentrated in the central and eastern areas of the city. The hardest-hit areas tended to be in low-income neighborhoods with older homes built before 1985 and higher shares of renter households.

### *Vulnerability and Impact*

During periods of extreme cold and freezing temperatures, water pipes can freeze and crack, and ice can build up on power lines, causing them to break under the weight or causing tree limbs to fall on the lines. These events can disrupt electric service for long periods. An economic impact may occur due to increased consumption of heating fuel, which can lead to energy shortages and higher prices. House fires and resulting deaths tend to occur more frequently from increased and improper use of alternate heating sources. Fires during winter storms also present a greater danger because water supplies may freeze and impede firefighting efforts.

People and animals are subject to health risks from extended exposure to cold air. Elderly people are at greater risk of death from hypothermia during these events, especially in the neighborhoods with older housing stock. Of all occupied housing units in the city, 65 percent depend on electricity to heat their homes.

The population over 65 in the City of Houston is estimated at 11 percent of the total population or an estimated total of 255,522, potentially vulnerable residents in the planning area based on age. An estimated 19.5 percent of the planning area population live below the poverty level. Older homes tend to be more vulnerable to the impacts of winter storm events. Half of all housing units (51 percent) in the City were built before 1980. Of occupied housing units, 58 percent are renter occupied. Renters can face more challenges with recovery following an event including home repairs or implementing personal mitigation measures before an extreme cold event.

Table 48: Populations at Greater Risk of Winter Storm Events

JURISDICTION	YOUTH (UNDER 5)	ELDERLY (OVER 65)	POPULATION BELOW POVERTY LEVEL
City of Houston	164,775	255,522	453,395

Table 48 Source: City of Houston Hazard Mitigation Plan

The greatest risk from a winter storm hazard is public health and safety. The impact of climate change could produce longer, more intense winter storm events, exacerbating the current winter storm impacts. Worsening winter storm conditions can be frequently associated with a variety of impacts, including:

- Vulnerable populations, particularly the elderly (11 percent of total population) and children under 5 (7 percent of total population), can face serious or life-threatening health problems from exposure to extreme cold including hypothermia and frostbite.
- Loss of electric power or other heat sources can result in increased potential for fire injuries or hazardous gas inhalation because residents burn candles for light and use fires or generators to stay warm.
- Response personnel, including utility workers, public works personnel, debris removal staff, tow truck operators, and other first responders are vulnerable to injury or illness resulting from exposure to extreme cold temperatures.
- Response personnel would be required to travel in potentially hazardous conditions, elevating the life safety risk due to accidents, and potential contact with downed power lines.
- Operations or service delivery may experience impacts from electricity blackouts due to winter storms.
- Power outages are possible throughout the City of Houston due to downed trees and power lines and/or rolling blackouts.
- Critical facilities without emergency backup power may not be operational during power outages.
- Emergency response and service operations may be impacted by limitations on access and mobility if roadways are closed, unsafe, or obstructed.
- Hazardous road conditions will likely lead to increases in automobile accidents, further straining emergency response capabilities.
- Depending on the severity and scale of damage caused by ice and snow events, damage to power transmission and distribution infrastructure can require days or weeks to repair.
- A winter storm event could lead to tree, shrub, and plant damage or death.
- Severe cold and ice could significantly damage agricultural crops.
- Older structures built to less stringent building codes may suffer greater damage as they are typically more vulnerable to impacts of winter storm events. 51 percent of homes in City were built before 1980. 265 buildings and sites in the City are on the National Register of Historic Places, many of which pre-date modern building codes.
- Schools may be forced to shut early due to treacherous driving conditions.
- Exposed water pipes may be damaged by severe or late season winter storms at both residential and commercial structures, causing significant damages.

The economic and financial impacts of winter weather on the community will depend on the scale of the event, what is damaged, and how quickly repairs to critical components of the economy can be implemented. The level of

preparedness and pre-event planning done by government, businesses, and citizens will also contribute to the overall economic and financial conditions in the aftermath of a winter storm event.

Climate change is expected to reduce the number of extreme cold events statewide but increase in the variability of events. Extreme cold events will continue to be possible but overall winters are becoming milder, and the frequency of extreme winter weather events are decreasing due to the warming of the Arctic and less extreme cold air coming from that region. A trend that is expected to continue with winter extremes estimated to be milder by 2036 compared to extremes in the historic record.

A summary assessment of winter storm hazard vulnerability and impacts to the community lifelines is presented in the table below.

*Table 49: Winter Storm Vulnerability and Consequence Summary by Lifeline*

Winter Storm	Vulnerability	Consequence
Safety and Security	Moderate Vulnerability	Moderate Impact to Lifeline/Services
Food, Hydration, Shelter	High Vulnerability	Significant Impact to Lifeline/Services
Health and Medical	Moderate Vulnerability	Moderate Impact to Lifeline/Services
Energy (Power and Fuel)	High Vulnerability	Significant Impact to Lifeline/Services
Communications	Moderate Vulnerability	Moderate Impact to Lifeline/Services
Transportation	High Vulnerability	Significant Impact to Lifeline/Services
Hazardous Material	Moderate Vulnerability	Moderate Impact to Lifeline/Services
Water Systems	High Vulnerability	Significant Impact to Lifeline/Services

Table 49 Source: City of Houston OEM

## Sea Level Rise

According to NOAA, the sea level around Galveston, Texas has risen 18 inches since 1950. The speed of rise has accelerated over the last 10 years and is now rising by nearly 1 inch every year. Scientists have determined these figures by measuring the sea level every 6 minutes using equipment like satellites, floating buoys off the coast, and tidal gauges to accurately measure the local sea level as it accelerates and changes.

By 2050, the Galveston Pleasure Pier can expect to see up to 22 inches of additional rise. The NOAA sea level rise viewer, a web-mapping tool designed to view potential impacts from coastal flooding or sea level rise, provides a range of local scenarios. One of these scenarios is an intermediate-high scenario for Galveston that shows increased water levels in the San Jacinto River and Buffalo Bayou watersheds, as well as severe impacts in the far southeastern reaches of Houston.

The City of Houston considers sea level rise in climate action planning as well as mitigation planning, though it often appears in conjunction with hurricane and flood hazard mitigation due to the inland nature of most of the City.

A summary assessment of hazard vulnerability and impacts to the community lifelines related to sea level rise is presented in the table below.

*Table 50: Sea Level Rise Vulnerability and Consequence Summary by Lifeline*

Sea Level Rise	Vulnerability	Consequence
Safety and Security	Low Vulnerability	Significant Impact to Lifeline/Services
Food, Water, Sheltering	Low Vulnerability	Significant Impact to Lifeline/Services
Communications	Low Vulnerability	Low Impact to Lifeline/Services
Transportation	Low Vulnerability	Moderate Impact to Lifeline/Services
Health and Medical	Low Vulnerability	Significant Impact to Lifeline/Services
Hazardous Material (Mgmt)	Low Vulnerability	Significant Impact to Lifeline/Services
Energy (Power and Fuel)	Low Vulnerability	Significant Impact to Lifeline/Services

Table 50 Source: City of Houston OEM

## Mitigation Needs Assessment Conclusion

This mitigation needs assessment reviewed the characteristics and impacts of current and future hazards. The risk of thunderstorm winds and hurricanes in Houston is high, and the potential severity of the risk is substantial, which was fully realized after the Derecho in mid-May and Hurricane Beryl in early July.

## Appendix 7: Citizen Participation Plan

CITY OF HOUSTON

# CITIZEN PARTICIPATION PLAN FOR DISASTER RECOVERY

2024 DERECHO AND HURRICANE BERYL

## Introduction

The City of Houston Housing and Community Development department (HCD) administers the Citizen Participation Plan on behalf of the City of Houston. The purpose of the Citizen Participation Plan for Disaster Recovery - 2024 Derecho and Hurricane Beryl (CPP-DR24) is to establish a means by which residents of the City of Houston (City), public agencies, and other interested parties can actively participate in the implementation and assessment of documents related to CDBG-DR24 activities and reflects the alternative requirements as specified by the Universal Notice 90 FR 1754 and Federal Register 90 FR 4759 and is implemented according to federal regulations (US Department of Housing and Urban Development (HUD) Regulations 24 CFR Part 91.105).

The CPP-DR24 is a separate, distinct, and tailored plan based upon and consistent with the City's Citizen Participation Plan, which describes public participation related to the consolidated planning process and entitlement grants. The City encourages citizen participation that emphasizes the involvement of low- and moderate-income residents, minority populations, persons with limited English proficiency, and persons with disabilities.

## Availability and Accessibility of Documents

During the term of the CDBG-DR24 grant, the City will provide citizens and other interested parties with reasonable and timely access to information and records relating to the Action Plan and the grantee's use of grant funds. This Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl and associated amendments and performance reports will be made available on HCD's website, and upon request, from HCD. Additionally, these documents are available in a format accessible to individuals with disabilities and those with limited English proficiency upon request.

## Public Website

The City of Houston will maintain a public website that provides information accounting for how all grant funds are used, managed, and administered, including links to all disaster recovery action plans, action plan amendments, program policies and procedures, performance reports, citizen participation requirements, and activity and program information described in this plan, and details of all contracts and ongoing procurement processes.

These items are made available through <https://houstontx.gov/hcdrecovery/dr24/>.

Specifically, the City of Houston *will make the following items available*:

- the Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl (including all amendments)
- each Quarterly Performance Report (as created using the DRGR system)
- the Citizen Participation Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl; procurement policies and procedures
- all executed contracts that will be paid with CDBG-DR funds as defined in 2 CFR 200.22 (including subrecipients' contracts)
- a summary including the description and status of services or goods currently being procured by the grantee or the subrecipient (e.g., phase of the procurement, requirements for proposals, etc.)

Contracts and procurement actions that do not exceed the micro-purchase threshold, as defined in 2 CFR 200.67, are not required to be posted to a grantee's website.

Additionally, the City will maintain a comprehensive website detailing all disaster recovery activities assisted by these funds. The website will be updated on time to reflect the most up-to-date information about the use of funds and any changes in policies and procedures, as necessary. At a minimum, updates will be made monthly.



## Amendments

Over time, recovery needs will change. Thus, the City of Houston will amend the disaster recovery action plan as often as necessary to best address our long-term recovery needs and goals. This plan describes proposed programs and activities. As programs and activities develop over time, an amendment may not be triggered if the program or activity is consistent with the descriptions provided in this plan.

Amendments to this Action Plan are divided into two categories: Substantial amendments and non-substantial Amendments. As amendments occur, both types of amendments are numbered sequentially and posted on HCD's Disaster Recovery webpage, <https://www.houstontx.gov/hcdrecovery/>. Copies of amendments are available upon request to: [hcdplanning@houstontx.gov](mailto:hcdplanning@houstontx.gov) or 832.394.6200. Changes in amendments will be identified at the beginning of each amendment.

The most current version of the entire Action Plan will be accessible for viewing as a single document. Each amendment will have highlighted changes, and the beginning of the amendment will include:

- Section identifying exactly what content is added, deleted, or changed
- Revised budget allocation table that reflects all funds and illustrates where funds are coming from and moving to, as amended and applicable
- Description of how the amendment is consistent with the mitigation needs assessment

## Substantial Amendment

A change to this action plan is a substantial amendment if it meets the following criteria:

- A change in program benefit or eligibility criteria,
- The addition or deletion of an activity,
- A proposed reduction in the overall benefit requirement,
- A new allocation or a reallocation with an increase or decrease of more than 25 percent in an activity's program budget, and/or
- An update to the submitted initial Action Plan, if the original submission was incomplete.

Substantial amendments are subject to a citizen participation process and require formal action by the City Council and submission to HUD. The City announces substantial amendments to the public through a public notice published in one or more newspapers of general circulation for 30 days, to provide an opportunity for public review and comment regarding proposed substantial amendments. Notices will be available in English and may also be available in Spanish and other languages, as feasible. The City will consider all written and/or oral comments or views concerning proposed substantial amendments that are received during the comment period in accordance with 24 CFR 91.105(c)(3). A summary of these comments and views, including comments or views not accepted, and the reason why, shall be submitted with each Substantial Amendment.

In conjunction with a substantial amendment, the City will evaluate the need to update the impact and unmet needs assessment section of the Plan, as required by HUD.

When the City of Houston pursues the substantial amendment process, the amendment will be posted here at <https://houstontx.gov/hcdrecovery/dr24/> for a 30-day public comment period. The City of Houston will review and respond to all public comments received and submit them to HUD for approval.

## Non-Substantial (Minor) Amendment

A non-substantial (minor) amendment is an amendment to the plan that includes technical corrections, clarifications, and a budget increase or decrease by less than twenty-five percent (25%). These require the signature of the City's HCD Director or designated representative, but do not require a public comment period or City Council approval. The

City will notify HUD five (5) business days before the change is effective. All amendments will be numbered sequentially and posted to the website as one final, consolidated plan.

### Public Hearings and Comments

Public hearings will be held at times and locations convenient to potential and actual beneficiaries, with accommodation for persons with disabilities and appropriate auxiliary aids and services to ensure effective communication, by providing CART services and advertising that accommodation is available upon request. If a significant number of non-English speaking residents are expected at a public hearing or an interpreter is requested within a reasonable time, HCD will make interpretation services available. Additional accommodation may be made upon advance request. Public hearings shall be held after a minimum of fourteen (14) days' notice, where practicable, in at least one newspaper of general circulation. Notices will be available in English and may also be available in Spanish and other languages, as feasible.

HCD held three public meetings to inform the public and outline the Action Plan priorities: three virtual meetings held on June 10, 12, and 17, 2025. The public meetings provided opportunities for attendees to voice questions and concerns following the presentation in a public comment section and a question-and-answer section. These questions and concerns were addressed within the Plan, and information about the public hearings was distributed through public notices, social media, and email blasts.

Public comments will be published in the Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl and/or any substantial amendments after the conclusion of a public comment period and public hearings.

### Application Status and Transparency

As applicable, the City of Houston will provide multiple methods of communication to provide applicants with timely information to determine the status of their application for assistance, including by phone, by mail, and in person. Written complaints from the public related to the Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl (or its amendments), QPRs, or the City's activities or programs funded with CDBG-DR24, will receive careful consideration and will be answered in writing, or other effective methods of communication, within 15 business days, where practicable.

### Complaints and Appeals

To promote transparency and partnership with communities where HCD operates, HCD responds to all complaints and appeals in a timely and equitable manner consistent with HUD requirements. An appeal is a communication from an applicant of any of HCD's programs who wishes to overturn a decision made regarding either the applicant's application or the resulting case. A complaint is a communication from a member of the public to a City official or employee that includes a concern or grievance regarding the operations of the City or any party acting on behalf of the City.

#### Complaints

Complaints alleging violation of fair housing laws will be directed to HUD for immediate review. HCD maintains a dedicated website (<https://houston.tx.gov/hcdrecovery/fraud/>) that provides information about identifying, reporting fraud, waste, and abuse. Complaints regarding fraud, waste, or abuse can be reported through the following methods to ensure accessibility and convenience.

#### HUD OIG Fraud Hotline

1-800-347-3735

[hotline@hudoig.gov](mailto:hotline@hudoig.gov)

**City of Houston Office of the Inspector General Fraud Hotline**

832-393-3542

[Secure Online Portal](#)

**HCD**

[housingfraud@houstontx.gov](mailto:housingfraud@houstontx.gov)

HCD program areas will make concerted efforts to resolve concerns at the earliest stage, if possible. However, anyone may file a complaint at any time, in writing or verbally. Complaints may be filed in person, by mail, by email, or through HCD's dedicated hotline for complaints.

Housing & Community Development Department.

ATTN: Complaints and Appeals

2100 Travis Street, 9<sup>th</sup> Floor

Houston, TX 77002

Hotline: 832-394-6200 ext. 1

[hcddcomplaintsappeal@houstontx.gov](mailto:hcddcomplaintsappeal@houstontx.gov)

Business Hours: Monday – Friday, 8:00 AM – 5:00 PM

All complaints related to this Action Plan (or its amendments), QPRs, or the City's activities or programs funded with CDBG-DR24 will receive careful consideration and will be responded to in writing within 15 business days, as practicable. For more information, please refer to the HCD website, [www.houstontx.gov/housing/complaints.html](http://www.houstontx.gov/housing/complaints.html) or <https://houstontx.gov/hcdrecovery/complaints/>.

## Appeals

All program applicants have the right to appeal a determination made by HCD. Applicants have the right to appeal decisions made on their program file based on the following:

- Denial of services or award through any of HCD's programs
- Program eligibility determination
- Program award calculation
- Program determination of Moderate or Substantial damage leading to Rehabilitation or Reconstruction
- Procedural error where the application was not processed by program staff in accordance with the program guidelines
- Affirmatively Furthering Fair Housing

Appeal requests are accepted in writing via email at [HCDDComplaintsAppeal@houstontx.gov](mailto:HCDDComplaintsAppeal@houstontx.gov), mailed or delivered letter, online Appeal Request form, or using the paper form at the HCD office.

Appeal Requests must be submitted within 30 days of the notice of determination. To be considered complete, an appeal request must contain the following information:

- Name
- Property Address
- Mailing Address (if different from Property Address)
- Phone
- Application number (if applicable)
- Email Address
- Reason for Appeal

Appeals will be responded to in writing within 30 calendar days. Appeals are accepted in writing via email, mailed or delivered letter, or [online submission form](#).

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For more information regarding the Appeal Submission or Appeal Review process, please refer to the HCD website <https://houstontx.gov/hcdrecovery/complaints/> or <https://houstontx.gov/hcdrecovery/appeals/> or call 832-394-6200 ext. 1.

## Appendix 8: Public Notices

### Public Notice

The City of Houston's (City) Housing and Community Development Department (HCD) anticipates \$314,645,000.00 in funding to support long-term recovery and resilience efforts following qualifying major disasters that occurred in 2023 and 2024, through the U.S. Department of Housing and Urban Development's (HUD) Office of the Assistant Secretary for Community Planning and Development, HUD. The 2024 Community Development Block Grant-Disaster Recovery (CDBG-DR 24) funding is designed to address needs after all other assistance has been exhausted after the Derecho and Hurricane Beryl. This plan details how funds will be allocated. The following table shows the estimated budgeted activities for CDBG-DR 24 funds.

Community Development Block Grant - Disaster Recovery 2024 (CDBG-DR 24) Proposed Budget		
Planning	\$ 200,000.00	0.06%
Administration	\$ 15,732,250.00	5.00%
Infrastructure - Power Generation Resilience Program	\$ 151,291,150.00	48.08%
Infrastructure - Emergency Response/ Public Safety Program	\$ 56,540,000.00	17.97%
Infrastructure - FEMA Public Assistance Local Cost Share	\$ 8,800,000.00	2.80%
Public Services - Public Services - Homelessness Program	\$ 41,040,600.00	13.04%
Mitigation - Debris Repository Acquisition Development Project	\$ 32,791,000.00	10.42%
Mitigation - Vegetation Management/Debris Removal Program	\$ 8,250,000.00	2.62%
<b>TOTAL</b>	<b>\$ 314,645,000.00</b>	<b>100.00%</b>

### Public Hearings and Public Comment Period

View the Draft Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl at the following locations:

- Online at <https://houston.tx.gov/hcdrecovery/dr24/>
  - HCD – 2100 Travis Street, Houston, TX 77002
- (Copies may also be obtained at this location)

The public may comment on the Draft Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl (Draft Plan) during the 30-day comment period extending from Friday, May 23, 2025, to Sunday, June 22, 2025. These long-term disaster recovery funds will be available to address the impacts of Derecho and Hurricane Beryl on Houston communities and residents and to enhance the City's resilience in future disaster events.

The City will host two Virtual Public Hearings for public comments. The meeting will be available both in English (<https://bit.ly/dr2024-ph25E>) and in Spanish (<https://bit.ly/dr2024-ph25S>). To access the virtual meeting by telephone for audio only, call US (Toll): 1-936-755-1524 and use code 308 697 888# for English and code 644 947 962# for Spanish.

#### Meeting #1

Tuesday, June 10, 2025

11:00 AM - 1:00 PM

English: <https://bit.ly/dr2024-ph25E>

Spanish: <https://bit.ly/dr2024-ph25S>

Or call in (audio only) 1-936-755-1521

Phone Conference ID# (English) 39776584#, (Español) 687420275#

#### Meeting #2

Thursday, June 12, 2025

3:00 PM - 5:00 PM

English: <https://bit.ly/dr2024-2ph25E>

Spanish: <https://bit.ly/dr2024-2ph25S>

Or call in (audio only) 1-936-755-1521

Phone Conference ID# (English) 320557522#, (Español) 61737009#

Public comments from both hearings will be added and responded to in the Final Action Plan.

Upon completion of the thirty-day public comment period, the City's Housing and Community Development Department will take this item to City Council for approval and then submit Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl to HUD. Written comments may be submitted by email to [HCDPlanning@houston.tx.gov](mailto:HCDPlanning@houston.tx.gov)

For any information about our Complaints and Appeals Process, please access the following: <https://houston.tx.gov/housing/complaints.html> and <https://houston.tx.gov/housing/appeals.html>. For more information about HCDD and its programs, please access HCDD's website at [www.houston.tx.gov/housing](http://www.houston.tx.gov/housing)

#### Aviso Público

El Departamento de Vivienda y Desarrollo Comunitario (HCD, por sus siglas en inglés) de la Ciudad de Houston (Ciudad) anticipa \$314,645,000.00 en fondos para apoyar los esfuerzos de recuperación y resiliencia a largo plazo después de los desastres mayores calificados que ocurrieron en 2023 y 2024, a través de la Oficina del Subsecretario de Planificación y Desarrollo Comunitario (HUD, por sus siglas en inglés) del Departamento de Vivienda y Desarrollo Urbano de los Estados Unidos (HUD, por sus siglas en inglés). Los fondos de la Subvención en Bloque para el Desarrollo Comunitario-Recuperación de Desastres 2024 (CDBG-DR 24) están diseñados para abordar las necesidades después de que se haya agotado toda la demás asistencia después del Derecho y el huracán Beryl. Este plan detalla cómo se asignarán los fondos. La siguiente tabla muestra las actividades presupuestadas estimadas para los fondos CDBG-DR 24.

Subvención en Bloque para el Desarrollo Comunitario- Recuperación por Desastre 2024 (CDBG-DR 24) Propuesta de presupuesto		
Planificación	\$200,000.00	0.06%
Administración	\$15,732,250.00	5.00%
Infraestructura - Programa de Resiliencia de Generación de Energía	\$151,291,150.00	48.08%
Infraestructura - Programa de Respuesta a Emergencias/Seguridad Pública	\$56,540,000.00	17.97%
Infraestructura - Asistencia Pública de FEMA Costos Compartidos Locales	\$8,800,000.00	2.80%
Servicios Públicos - Servicios Públicos - Programa para Personas sin Hogar	\$41,040,600.00	13.04%
Mitigación - Proyecto de Desarrollo de Adquisición de Repositorios de Escombros	\$32,791,000.00	10.42%
Mitigación - Programa de Manejo de Vegetación/Remoción de Escombros	\$8,250,000.00	2.62%
<b>TOTAL</b>	<b>\$314,645,000.00</b>	<b>100.00%</b>

#### Audiencias Públicas y Periodo de Comentarios Públicos

Vea el Borrador del Plan de Acción para la Recuperación de Desastres - 2024 Derecho y el Huracán Beryl en los siguientes lugares:

- En línea en <https://houston.tx.gov/hcdrecovery/dr24/>
- HCD - 2100 Travis Street, Houston, TX 77002 (También se pueden obtener copias en esta ubicación)

El público puede comentar sobre el Borrador del Plan de Acción para la Recuperación de Desastres - 2024 Derecho y el Huracán Beryl (Borrador del Plan) durante el periodo de comentarios de 30 días que se extiende desde el viernes 23 de mayo de 2025 hasta el domingo 22 de junio de 2025. Estos fondos de recuperación de desastres a largo plazo estarán disponibles para abordar los impactos de Derecho y el huracán Beryl en las comunidades y residentes de Houston, y para mejorar la resiliencia de la Ciudad en futuros eventos de desastre.

La Ciudad organizará dos audiencias públicas virtuales para comentarios públicos. La reunión estará disponible tanto en inglés (<https://bit.ly/dr2024-ph25E>) como en español (<https://bit.ly/dr2024-ph25S>). Para acceder a la reunión virtual por teléfono solo para audio, llame a EE. UU. (con cargo): 1-936-755-1524 y use el código 308 697 888# para inglés y el código 644 947 962# para español.

#### Reunión #1

Martes, 10 de junio de 2025

11:00 a.m. - 1:00 p.m.

Inglés: <https://bit.ly/dr2024-ph25E> Español: <https://bit.ly/dr2024-ph25S> O llame (solo audio) al 1-936-755-1521

Teléfono Conferencia ID# (Inglés) 39776584#, (Español) 687420275#

#### Reunión #2

Jueves, 12 de junio de 2025

15:00 - 17:00

Inglés: <https://bit.ly/dr2024-2ph25E> Español: <https://bit.ly/dr2024-2ph25S> O llame (solo audio) al 1-936-755-1521

Teléfono Conferencia ID# (Inglés) 320557522#, (Español) 61737009#

Los comentarios públicos de ambas audiencias se agregarán y responderán en el Plan de Acción Final.

Una vez finalizado el periodo de comentarios públicos de treinta días, el Departamento de Vivienda y Desarrollo Comunitario de la Ciudad llevará este tema al Concejo Municipal para su aprobación y luego presentará el Plan de Acción para la Recuperación de Desastres - 2024 Derecho y el Huracán Beryl a HUD. Los comentarios por escrito pueden enviarse por correo electrónico a [HCDPlanning@houston.tx.gov](mailto:HCDPlanning@houston.tx.gov)

Para obtener información sobre nuestro Proceso de Quejas y Apelaciones, acceda a lo siguiente: <https://houston.tx.gov/housing/complaints.html> y <https://houston.tx.gov/housing/appeals.html>. Para obtener más información sobre HCD y sus programas, visite el sitio web de HCD en [www.houston.tx.gov/housing](http://www.houston.tx.gov/housing)



### Public Notice

On Friday, May 23, 2025, The City of Houston's (City) Housing and Community Development Department (HCD) issued a public notice announcing the Draft Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl (Draft Plan), the 2024 Community Development Block Grant-Disaster Recovery (CDBG-DR 24) proposed budget, and two Virtual Public Hearings for public comments.

The City is issuing a correction that revises the activity category for the Emergency Response / Public Safety Program from Public Facilities to Public Services, as reflected in the table below. There are no changes to the funding amount.

Community Development Block Grant - Disaster Recovery 2024 (CDBG-DR 24) Proposed Budget		
Planning	\$200,000.00	0.06%
Administration	\$ 15,732,250.00	5.00%
Infrastructure - Power Generation Resilience Program	\$ 151,291,150.00	48.08%
Infrastructure - FEMA Public Assistance Local Cost Share	\$ 8,800,000.00	2.80%
Public Services - Emergency Response/ Public Safety Program	\$ 56,540,000.00	17.97%
Public Services - Public Services - Homelessness Program	\$ 41,040,600.00	13.04%
Mitigation - Debris Repository Acquisition Development Project	\$ 32,791,000.00	10.42%
Mitigation - Vegetation Management/ Debris Removal Program	\$ 8,250,000.00	2.62%
<b>TOTAL</b>	<b>\$ 314,645,000.00</b>	<b>100.00%</b>

Additionally, the City will be hosting a **third** Virtual Public Hearing for public comments on June 17, 2025, from 5:30 PM to 7:30 PM. The meeting will be available both in English (<https://bit.ly/dr2024-3ph25E>) and in Spanish (<https://bit.ly/dr2024-3ph25S>). To access the virtual meeting by telephone for audio only, call US (Toll): 1-936-755-1524 and use code 821 913 11# for English and code 207 364 185# for Spanish.

Public comments from all hearings will be added and responded to in the Final Action Plan.

This does not alter the original 30-day comment period. The 30-day comment period extends from Friday, May 23, 2025, to Sunday, June 22, 2025. For additional information on this item, contact HCD Planning at [HCDDPlanning@houston.tx.gov](mailto:HCDDPlanning@houston.tx.gov) or by mail: HCD, ATTN: Planning, 2100 Travis Street, 9th Floor, Houston, TX 77002.

For any information about our Complaints and Appeals Process, please access the following: <https://houston.tx.gov/housing/complaints.html> and <https://houston.tx.gov/housing/appeals.html>. For more information about HCD and its programs, please access HCD's website at [www.houston.tx.gov/housing](http://www.houston.tx.gov/housing).



**Public Notice**

On Friday, May 23, 2025, The City of Houston's (City) Housing and Community Development Department (HCD) issued a public notice announcing the Draft Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl (Draft Plan), the 2024 Community Development Block Grant-Disaster Recovery (CDBG-DR 24) proposed budget, and two Public Hearings for public comments. Additionally, on June 13, 2025, a correction public notice was issued that added a third Public Hearing and revised the activity category for the Emergency Response / Public Safety Program from Public Facilities to Public Services.

The City is now issuing a correction to revise the proposed budget to include housing activities – Multifamily Housing Program and Single Family Housing Program – as reflected in the table below. There are no changes to the total funding amount.

<b>Community Development Block Grant – Disaster Recovery 2024 (CDBG-DR 24) Proposed Budget</b>	
Planning	\$ 200,000.00
Administration	\$ 15,732,250.00
<b>Multifamily Housing Program</b>	<b>\$ 30,000,000.00</b>
<b>Single Family Housing Program</b>	<b>\$ 20,000,000.00</b>
Infrastructure - Power Generation Resilience Program	\$ 151,291,150.00
Public Services - Emergency Response/Public Safety Program	\$ 15,340,000.00
Public Services - Public Services – Homelessness Program	\$ 41,040,600.00
Mitigation - Debris Repository Acquisition Development Project	\$ 32,791,000.00
Mitigation - Vegetation Management/ Debris Removal Program	\$ 8,250,000.00
<b>TOTAL</b>	<b>\$ 314,645,000.00</b>

This does not alter the original 30-day comment period. The 30-day comment period extended from Friday, May 23, 2025, to Sunday, June 22, 2025. For additional information on this item, contact HCD Planning at [HCDDPlanning@houstontx.gov](mailto:HCDDPlanning@houstontx.gov) or by mail: HCD, ATTN: Planning, 2100 Travis Street, 9<sup>th</sup> Floor, Houston, TX 77002.

For any information about our Complaints and Appeals Process, please access the following: <https://houstontx.gov/housing/complaints.html> and <https://houstontx.gov/housing/appeals.html>. For more information about HCD and its programs, please access HCD's website at [www.houstontx.gov/housing](http://www.houstontx.gov/housing).

## Appendix 9: Public Comments

## Summary of Virtual and Written Public Hearing Comments

The following is a summary of virtual and written comments, with responses provided by the City of Houston (City). During the 30-day public comment period—from Friday, May 23, 2025, to Sunday, June 22, 2025—residents had the opportunity to participate by attending and providing comments during virtual meetings or by submitting written feedback regarding the City’s Draft Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl (Plan) which describes the proposed use of the City’s Community Development Block Grant (CDBG) - Disaster Recovery (DR) allocation.

### Virtual Public Hearing Comments

(June 10, 12, 17, 2025)

#### Add/Increase Housing in the Plan

The Plan budget did not include an allocation for housing. Comments advocating for housing and adding/increasing housing in the Plan budget are summarized below.

#### Comments:

- The speaker emphasized the critical need for the City to allocate a substantial portion of disaster recovery funds toward new affordable housing. The speaker stated that storms disproportionately had an impact on the most vulnerable residents, and housing, unlike infrastructure, should be prioritized in recovery efforts, especially given the current shortage of affordable units and rising costs.
- The speaker emphasized the critical need for housing funding in the proposed Plan and reiterated that a Plan excluding housing is incomplete. The speaker also questioned how unused funds, particularly those allocated for emergency services and homelessness, would be redirected.
- The speaker expressed concern that the current funding proposal fails to prioritize housing, despite it being one of Houstonians' top concerns, as reinforced by surveys like those from the Kinder Institute. They emphasized that recent disasters like Beryl and Derecho caused major damage to homes, yet no funds in the \$300 million proposal are allocated for housing.
- The speaker is concerned that the recovery funds seem primarily focused on single-family homes and asks if multi-family and low-income housing, such as apartment complexes and townhomes, will also receive funding for repairs. They also inquire whether infrastructure maintenance, like pipes, utilities, and sewage damaged by recent storms, is being considered in the allocation.
- The speaker is concerned that the current Plan does not include a dedicated housing set-aside and questions whether the City has a contingency plan if federal housing funds are reduced or eliminated. They also raise concerns about the City’s Plan to exceed public service funding guidelines and ask about the likelihood and timing of necessary HUD waivers that could affect the Plan. They invite a follow-up for further clarification.
- The speaker voiced strong concern about the Plan’s lack of line items for housing unmet needs and stated they would oppose any submission to HUD without it. The speaker also urged investment in power generators for the Sunnyside Multi-Service Center to serve as a shelter during storms, more high-water rescue vehicles for vulnerable residents, and a roof replacement program for low- to moderate-income homeowners whose properties were previously damaged by substandard City-funded repairs.
- The speaker urges the City to allocate disaster recovery funds based strictly on the official needs assessment, prioritizing housing and economic revitalization where the greatest unmet needs were

## Summary of Virtual and Written Public Hearing Comments

identified. The speaker also emphasizes that ignoring the assessment and misallocating funds wastes a critical opportunity to address long-standing needs in the community.

- The speaker stressed that the Plan must prioritize significant investment in affordable housing and home repairs to address the City's largest unmet needs and prevent homelessness. The speaker urges reallocating at least \$100 million from less urgent items to fund housing and drainage infrastructure, which are critical for long-term stability and resilience against future storms.
- The speaker appreciates the mayor's initial \$50 million for housing repairs but urges to increase the total to \$100 million to prioritize home repairs for vulnerable families. The speaker recommends reallocating funds by cutting emergency response vehicles and reducing homeless program budgets to prevent homelessness through home repair.
- The speaker urges increasing affordable housing funding from \$50 million to at least \$100 million and insists disaster survivors must have a meaningful role in the recovery process. They also highlight the need for more accessible, community-based outreach beyond virtual meetings in English to truly include the most impacted residents in planning and decision-making.
- The speaker emphasized that the \$50 million currently allocated for housing repairs after Hurricane Beryl and the derecho is only a fraction of the \$200 million+ in damage and should not be diverted to purchase emergency vehicles. They strongly urge that all available funds be used for repairing homes and supporting residents, especially those still recovering from previous disasters like Hurricane Harvey, rather than funding police or fire department needs that should be covered by the City's regular budget.
- The speaker emphasized the urgent need for more funding for housing aligned with the disaster needs assessment, especially for single-family affordable homes. They urged the City to adopt resilient building practices like making homes generator-ready and using sustainable materials, and to support innovative housing types such as cottage and missing middle housing for long-term affordability and disaster preparedness.
- The speaker stressed the overwhelming damage caused by the derecho and Hurricane Beryl, emphasizing that nonprofit efforts alone cannot meet the extensive home repair needs in her community. They urge as much funding as possible, at least \$100 to \$120 million, to be allocated specifically for home repairs and infrastructure in marginalized areas still struggling with damage.
- The speaker appreciates the Mayor's \$50 million allocation but insists that significantly more funding is needed to support home repairs for the large number of affected residents. The speaker also suggests that the Mayor should help provide generators to assist people during emergencies. More funding is urgently needed for home repairs and emergency preparedness, like generators, and allocated funds must be used specifically for those purposes.

### Response:

Based on feedback received through the public engagement process, the City of Houston has revised the Draft Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl to include \$100 million for housing. This funding will provide for single family home repair and multifamily housing program options. The budget can be viewed at <https://houstontx.gov/hcdrecovery/dr24/>. The changes reflect the City's consideration of all input received during the public engagement process to arrive at a comprehensive and inclusive Plan for all residents.

## Summary of Virtual and Written Public Hearing Comments

### Allocation of Infrastructure Funding for Generators

Comment:

- The speaker raised concerns about how generator infrastructure funds will be allocated, urging that they prioritize public-facing facilities in disaster-prone areas like Houston's East End and North Side. They also questioned the use of disaster recovery funds for solid waste facilities, asking how those resources will be utilized outside of active disaster periods.

Response:

As the City moves forward to implementing the Power Generation Resilience Program, additional information/details will become available on specific City-owned facility locations. Information regarding any procurements / RFPs for this program, which may include some program information/details, can be found on the City of Houston's website [www.houstontx.gov/obo/current\\_contracting\\_opportunities.html](http://www.houstontx.gov/obo/current_contracting_opportunities.html). Additionally, contracts for the provision of services to support this program will be presented to City Council.

### Community Involvement / Engagement

Comments:

- The speaker expressed frustration with the City's leadership and HUD for failing to invest in local communities, collaborate with professionals, and include residents in building resilient, equitable infrastructure. The core concern is systemic neglect of community involvement and sustainable development.
- The speaker emphasizes that true community healing and resilience come from engaging residents and faith groups in underserved neighborhoods to create neighborhood-driven solutions rather than top-down developer incentives. They call for better access to elected officials and collaborative problem-solving groups to address long-standing needs and improve the quality of life in these areas.

Response:

The City is committed to a transparent and inclusive recovery planning process. There was a 30-day public comment period for the Plan, from May 23 to June 22, 2025, including a resident and agency survey, to assess the direct needs of the community. Additionally, three virtual public hearings were held, during which City leadership was present to listen to comments and respond to questions. The City remains committed to continuous improvement, increasing transparency, and encouraging greater participation from residents directly affected by the disasters.

### Disaster Preparedness Coordination

Comment:

- The speaker worries that utility companies have not fully prepared for storm resiliency, especially regarding infrastructure for internet and phone services. They emphasize the need for coordinated leadership and comprehensive maintenance to protect the entire community from storm-related disruptions.

Response:

The City's Office of Emergency Management has conducted a thorough assessment of disaster preparedness, working closely with stakeholders and leadership to identify critical services needed during storms. The City is committed to identifying opportunities for collaboration in its disaster planning and preparedness activities.

## Summary of Virtual and Written Public Hearing Comments

### Funding for Multi-Service Centers

#### Comments:

- The speaker emphasized the critical role of the West Gray Multi-Service Center as a safe, accessible community hub for thousands in central Houston during extreme weather, emergencies, and daily activities. They highlighted its importance as a cooling/heating center, key voting location, and gathering place for diverse groups, while noting the facility's outdated infrastructure and urgent need for repairs and upgrades. They urged consideration of funding to support this vital resource.
- The speaker highlighted security concerns at the West Gray Community Center, especially regarding the safety of special needs children participating in programs there. They emphasize the need for renovations that include improved security measures, in addition to the planned installation of generators, to better protect the community and children using the facility.
- The speaker advocated for funding the Metropolitan Service Center, which serves as a crucial emergency hub for people with disabilities in Houston, especially in Council Member Kamin's district. Supporting multi-service centers Citywide is essential to ensure vulnerable populations receive necessary assistance during emergencies.

#### Response:

We recognize that multi-service centers are vital community anchors in offering reliable access to resources and support during emergencies, severe weather, and routine daily life. Currently, the City does not anticipate additional disaster recovery funding for multi-service centers beyond the planned installation of permanent emergency power generators at selected multi-service centers.

### Funding for Places of Worship

#### Comment:

- The speaker emphasizes that the Plan fails to adequately address direct property damage assistance and debris removal for places of worship, which serve as vital community anchors. They urge expanding support for these institutions and recommend growing the homeless service program to include services provided by places of worship.

#### Response:

The City has prioritized funding for permanent emergency power generators at the most critical locations, including multi-service centers, fire stations, and other designated City-owned facilities equipped to support the community during emergencies.

### Funding Towards the Homeless Population

#### Comments:

- The speaker expressed support for funding allocated to address homelessness and emphasized the importance of actively reaching out to unhoused individuals where they are. They urged the City to go beyond shelters and help people secure permanent housing by directly engaging them in the community.
- The speaker thanked the mayor for the \$50 million allocated for home repairs, but highlighted that after surveying 100,000 people post-Beryl, many still have significant unmet repair needs. They requested

## Summary of Virtual and Written Public Hearing Comments

reallocating \$30 million from multi-dwelling repairs to single-family home repairs to better prevent homelessness.

- This speaker thanks Mayor Whitmire and the Houston Housing Department for increasing housing funds but agrees that more investment is needed to address homelessness, which is partly caused by a lack of quality affordable housing. They emphasize that affordable housing developments funded by the 9% Housing Tax Credit not only serve low-income households but also reserve units for homeless residents, urging the use of homeless housing funds to support these developments.
- The speaker emphasizes the urgent need for both short-term and long-term housing and services for unhoused populations, especially in Houston's East End. They also highlight the critical importance of improving language access to disaster relief resources for non-English speakers to ensure equitable recovery.

Response:

Based on feedback received through our public engagement process, the City has revised the Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl to include \$100 million for housing. Increased funding for affordable rental housing strategically aligns with efforts to address homelessness and improve housing access for Houston's most vulnerable residents.

## Redirect Funding Towards Other Activities

Comments:

- The speaker expressed concern that too much funding is directed toward the homeless population, stating the homeless population does not contribute through taxes, and suggested that other areas, like the storm-damaged NRG Park, should receive support instead. They highlighted the difficult working conditions at the park and argued for a more balanced allocation of resources.
- The speaker representing The Houston Democracy Project urges the City to cut emergency vehicle funding, which already dominates the budget, and redirect those funds toward other urgent community needs. They call on politically powerful police and fire unions to help the City by supporting budget efficiencies instead of demanding more resources.
- The speaker strongly opposes using CDBG-DR funds for vehicles, urging more transparency about generator allocations for fire stations and multi-service centers. They emphasize the urgent need to prioritize increased funding for drainage infrastructure and home repairs in vulnerable communities, warning that without substantial investment, recovery will remain out of reach. The majority of CDBG-DR funds must be dedicated to drainage improvements and home repairs to support Houston's most disaster-affected communities, rather than purchase vehicles.
- The speaker criticizes CenterPoint Energy for poor planning and communication that contributed significantly to hurricane damage and urges holding CenterPoint Energy accountable, emphasizing that funds should prioritize housing repairs, support for vulnerable populations, and neighborhood infrastructure rather than emergency vehicles, with community centers and libraries better equipped for emergencies. CenterPoint must be held responsible for infrastructure failures, and disaster recovery funds should focus on housing repairs and strengthening neighborhood support systems, not on police and emergency vehicles.
- The speaker urges the City to prioritize direct disaster recovery efforts like home repairs and infrastructure improvements instead of funding public safety equipment that doesn't address storm damage, emphasizing the need for neighborhood resilience, climate-conscious investments, and better support for vulnerable residents to prevent homelessness and improve storm preparedness. The City must prioritize funding for



## Summary of Virtual and Written Public Hearing Comments

home repairs, infrastructure resilience, and clean energy solutions to directly support disaster recovery and prevent homelessness, rather than spending on public safety equipment unrelated to storm response.

Response:

Based on feedback received through our public engagement process, the City has revised the Draft Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl to include \$100 million for housing. This funding will provide for single family home repair and multifamily housing program options. This change resulted in a reduction in the amount budgeted for Emergency Response/Public Safety Program, a reduction in the amount budgeted for the Emergency Power Generation Program, and the elimination of the budget line item for FEMA Local Cost Share. Further budget changes in the Plan are not anticipated at this time.

### Technical Difficulties

Comment:

- (June 17, 2025): The speaker reported significant technical issues with accessing the virtual meeting, including broken links and lack of audio, which prevented many members from participating. They highlighted that these recurring technical problems during public meetings need urgent attention to ensure proper community engagement. Persistent technical difficulties are preventing meaningful public participation in virtual meetings and must be addressed promptly.

Response:

The City understands how frustrating technology issues can be and recognizes the importance of reliable access, when conducting virtual public meetings, to facilitate meaningful public participation. While some technical challenges are beyond the City's immediate control due to platform or connectivity limitations, we are actively working to improve the virtual meeting experience by working with IT staff and ensuring predetermined work arounds are developed in the event such issues arise in the future. The City has posted recordings of all three virtual meetings on the City's website at <https://houstontx.gov/hcdrecovery/public-hearing/>.



# Summary of Virtual and Written Public Hearing Comments

## Written Comments

(May 23, 2025 - June 22, 2025)

### Add/Increase Housing in the Plan

As noted in the virtual public hearing comments section, the Plan budget did not include an allocation for housing. Comments advocating for housing and adding/increasing housing in the Plan budget are summarized below.

Comments:

- The commenter focuses on the lack of investment in disaster-resilient, affordable housing and emphasizes the importance of using recovery funds specifically for housing to protect residents and their homes.
- The commenter appreciates the City of Houston's revised Plan for prioritizing housing, especially the \$50 million allocated for multifamily development and home repairs, and they express their commitment to supporting its successful implementation.
- The commenter urges that at least \$100 million be allocated to help families repair storm-damaged homes from recent disasters, including the winter storm of 2021, and opposes using disaster relief funds for police vehicles unless they are specifically for disaster rescue purposes.
- The commenter urges that all funds be spent on single-family homes, arguing that privately owned multifamily apartments should not receive money because they already have sufficient insurance, and it's unfair to double-dip their resources.
- The commenter focuses on the urgent need for disaster recovery funds to prioritize home repairs and rebuilding for residents whose homes were damaged by recent storms, emphasizing that current funding plans under-serve disaster survivors and allocate too much toward infrastructure and homelessness programs unrelated to the storms.
- The commenter urges the City of Houston to reconsider allocating more CDBG-DR funding toward housing recovery, especially for vulnerable populations such as seniors, people with disabilities, and low-income residents affected by disasters like Hurricane Beryl. They express concern that no funds were initially slated for housing, while millions were directed toward public safety generators, which they feel will not directly benefit the broader community. They call for a more equitable distribution of recovery funds to meet urgent housing and neighborhood needs.
- The commenter urges the City of Houston to prioritize housing recovery in the Plan, emphasizing the urgent need for assistance among disaster-impacted residents, particularly seniors in underserved neighborhoods like East Sunnyside. They express frustration over unmet promises for housing funding and call for a reallocation of funds from programs like public services and power generation to directly support community recovery, which they believe is the true intent of the federal disaster relief funding.
- The commenter indicated that proposed budget does not tie back to storm damage and advocated for the inclusion of funding to support housing recovery.
- The commenter urges the City of Houston to allocate at least \$100 million of the \$315 million in federal disaster relief funds toward home repairs, emphasizing that many families are still suffering from storm damage and deserve meaningful support for recovery.
- The commenter focuses on increasing funding for housing repairs—both single-family and multi-family. The commenter references storm damage, vulnerable residents, and the importance of resilient housing and mentions infrastructure and homelessness, the emphasis is on housing repair.

## Summary of Virtual and Written Public Hearing Comments

- The commenter discusses the need to increase the housing budget for disaster recovery and mentions residential damage and the need for decent living environments. The commenter also addresses infrastructure issues like crumbling streets, poor drainage systems, and debris removal, which fall under infrastructure/public works.

Response:

Based on feedback received through the public engagement process, the City of Houston has revised the Draft Action Plan for Disaster Recovery – 2024 Derecho and Hurricane Beryl to include \$100 million for housing. This funding will provide for single family home repair and multifamily housing program options. You can view the revised budget at <https://houstontx.gov/hcdrecovery/dr24/>. The changes reflect the City's consideration of all input received during the public engagement process to arrive at a comprehensive and inclusive Plan for all residents.

### Allocation of Disaster Recovery Funds for Public Service

- The commenter is asking detailed questions about infrastructure spending, including allocations for public services like drinking water, wastewater, police, fire departments, community centers, and libraries. While some of these services may indirectly support housing stability, the focus is on public infrastructure and service accountability, not direct housing assistance.
- The commenter addresses concerns about funding allocation for emergency vehicles, generators, and public safety infrastructure. The commenter emphasizes avoiding duplication of funding for capital projects and urges transparency and proper use of disaster recovery funds.

Response:

Thank you for your comments. We understand the importance of ensuring transparency, accountability, and non-duplication in the use of disaster recovery funds. While certain infrastructure investments—such as emergency generators and public facilities—are not direct housing assistance, they play a vital role in supporting overall community resilience and housing stability, especially during and after disasters. The City is committed to aligning all funded activities with federal guidelines and ensuring that investments are targeted where they will have the greatest long-term impact.

### Allocation of Disaster Recovery Funds for Residential Generators

- The commenter is proposing that funds be allocated to homeowners for residential standby generator installations, which directly involves improvements to private homes — a core aspect of housing support.

Response:

The City has elected to place permanent stand-by generators at strategically located City-owned facilities. This approach ensures that, during emergencies, the broader community can access essential services and safe spaces. These placements are designed to maximize community benefit and resilience in future disasters. At this time, stand-by generators are not planned for owner-occupied single family residences.

### CDBG-DR Requirements

- The commenter indicates that Plan is inconsistent with appropriating legislation and with the requirements of the CDBG-DR program and funding should be used for unmet recovery needs.

## Summary of Virtual and Written Public Hearing Comments

- The commenter indicated that CDBG-DR funding must be used for direct impacts from the storms.

Response:

CDBG-DR funding is intended to support both long-term recovery and resilience and may support direct and indirect impacts from the 2024 Derecho and Hurricane Beryl. More information on allowable uses of CDBG-DR funding can be found in the associated Universal Notice at <https://www.federalregister.gov/documents/2025/01/08/2024-31621/common-application-waivers-and-alternative-requirements-for-community-development-block-grant>.

### Community Oversight and Participation in Decision-Making

- The commenter recommends that the City should institutionalize community input and oversight through the Citizen Advisory Group suggested by the Universal Notice.

Response:

The City continues to evaluate program implementation and further public engagement opportunities. To stay informed about the latest news from the City's Housing and Community Development Department, including any further opportunities for public engagement related to the City's recovery efforts, you can subscribe to our mailing list by visiting [www.houstontx.gov/housing](http://www.houstontx.gov/housing).

### Connection Between Needs Assessments and Proposed Programs

- The commenter raises concerns regarding the connection between City's needs assessments and proposed programs and processes and a reasonably proportionate allocation of resources relative to areas and categories.

Response:

The City believes that the revised Plan shows a greater balance between recovery and resilience and is in greater alignment with both direct and indirect unmet needs.

### Generator Power Source

- The commenter recommended using solar/battery storage to power generators rather than natural gas.

Response:

While the City acknowledge concerns raised related to the intent to utilize natural gas-powered generators in the Power Generation Resilience Program, reliability during short- and long-term power outages at large facilities was a key determinant in the pathway to power the generators.

### Power Generation Resilience Program

- The commenter is seeking additional details on costs and specific facilities that will receive generators under the Power Generation Resilience Program.

Response:

## Summary of Virtual and Written Public Hearing Comments

As the City moves forward to implementing the Power Generation Resilience Program, additional information/details will become available. Information regarding any procurements/RFPs for this program can be found on the City of Houston's website [www.houstontx.gov/obo/current\\_contracting\\_opportunities.html](http://www.houstontx.gov/obo/current_contracting_opportunities.html). Contracts for the provision of services for this program to support this program will be presented to City Council.

### Street Drainage Improvements

- The commenter recommends the City create an infrastructure program that addresses street drainage improvements.

Response:

Unfortunately, recovery and resilience need far exceed available disaster recovery funding. The City will continue to seek opportunities for collaboration and leveraging to identify funding for additional needs such as street drainage improvements, however, further Plan budget/program changes are not anticipated at this time.

### Using CDBG-DR Funding to Replace Local Funding

- The commenter suggests that the City's Capital Improvement Plan shows funding for similar activities budgeted in the Plan. The City cannot supplant general operating expenses with CDBG-DR funding.

Response:

HUD rules prohibit the use of Community Development Block Grant Disaster Recovery funding to replace local funds that have been committed for the same activity. This funding will not pay for any items for which funding has been committed in the CIP. The City's CDBG-DR allocation will not pay for any items where funding has already been committed by the City.

## Appendix 10: HUD's Allocation of CDBG-DR funds for 2023/2024 Disasters Brief



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Allocation of CDBG-DR funds for 2023/2024 Disasters

This document describes the allocation for **Houston, TX** under Public Law No: 118-158 on 12/21/2024 (The Disaster Relief Supplemental Appropriations Act) for Community Development Block Grant Disaster Recovery funds (CDBG-DR). The funds are specified to be used for:

“disaster relief, long-term recovery, restoration of infrastructure and housing, economic revitalization, and mitigation in the “most impacted and distressed” (MID) areas resulting from a qualifying major disaster that occurred in 2023 or 2024”

The basic formula for allocating these funds is to calculate for each disaster meeting a minimum “most impacted and distressed” damage threshold a formula that uses an estimate of unmet needs for housing, economic revitalization, and infrastructure plus 15 percent more for mitigation. The unmet needs and mitigation are slightly greater than the amount to be allocated, so the amount allocated reflects the unmet needs and mitigation less a 1.2488 percent pro-rata reduction.

**Section 1** shows the allocation as per the AAN (90 FR 4759) published on 16 Jan 2025.

Table1. CDBG-DR Allocations for CY 2023/2024 Most Impacted and Distressed Qualifying Disasters

State	Grantee	Disaster	Allocation Award
Texas	Houston, TX	4781; 4798	\$314,645,000

**Section 2** provides detailed information of the component parts of data used to determine the formula allocation.

Table 2. Components of Unmet Need for the **State of Texas** by disaster.

Disaster Number	Disaster Description	Homes with Serious Unmet Housing Needs	Housing Serious Unmet Needs	Business Serious Unmet Needs	Infrastructure Unmet Needs	Total HUD Formula Unmet Needs
4781	Flood	5,350	\$333,277,069	\$33,327,707	\$38,586,676	\$405,191,452
4798	Hurricane	5,452	\$350,394,711	\$35,039,471	\$35,039,471	\$420,473,653

Table 3. Components of Unmet Housing Need for **Houston, TX**.

Grantee	Disaster Number	Homes with Serious Unmet Housing Needs	Percentage of State	Unmet Housing Need	Total Unmet Need	Mitigation (15%)	Disaster Total (Need + MIT)
Houston, TX	4781; 4798	3,965	34%	\$229,415,935	\$277,064,000	\$41,560,000	\$318,624,000

Total HUD Formula Unmet Needs + 15 % Mitigation – pro-rata reduction = **\$314,645,000**



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The HUD “unmet needs” formula has three key components:

1. Serious unmet housing needs in most impacted areas. Two data sources inform this calculation, FEMA Individual Assistance registrants with a FEMA inspection as well as applicants for SBA Disaster Recovery Home Loans. The FEMA data generally capture the universe of homeowners who are uninsured for a disaster. They also capture the renters who are very low-income (or below poverty) and whose units experienced damage. While we do not know the extent landlords have insurance, we assume that rental units occupied by very low-income tenants and seriously damaged will not be affordable if they are repaired or replaced, thus creating a need for creating affordable rental units.

FEMA’s inspections give a general sense of how serious a home is damaged but usually not the likely cost to repair to code. SBA data inform us both how much homes of different levels of damage for a specific disaster are generally requiring for repair to code and how many households are addressing their need with SBA assistance.

HUD calculates total housing unmet needs at the county and zip code level. The formula only allocates housing resources for counties with \$10 million or more in unmet needs. For areas outside of these “most impacted counties”, zip codes with \$2 million or more in damage are included as “most impacted zips”. Combined, these are described as most impacted areas.

2. Serious unmet business needs. Unmet business needs are calculated based on the applications denied for SBA Disaster Loans and estimated cost to repair/replace both the structure and contents of the properties seriously damaged.

Because many of the larger disasters of 2023 and 2024 occurred recently and business need data remain incomplete for many disasters, no disaster in 2023 or 2024 receives for business unmet need less than 10 percent of their unmet housing need.

3. Unmet infrastructure need. Unmet infrastructure needs are calculated as the FEMA estimated local cost share for its Public Assistance permanent construction categories – Categories C to G.

Because many of the larger disasters of 2023 and 2024 occurred recently and infrastructure need data remain incomplete for many disasters, no disaster in 2023 or 2024 receives for infrastructure unmet need of less than 10 percent of their unmet housing need.



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APPENDIX 1. STATUTE

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

COMMUNITY PLANNING AND DEVELOPMENT

COMMUNITY DEVELOPMENT FUND

(INCLUDING TRANSFERS OF FUNDS)

For an additional amount for “Community Development Fund”, \$12,039,000,000, to remain available until expended, for the same purposes and under the same terms and conditions as funds appropriated under such heading in title VIII of the Disaster Relief Supplemental Appropriations Act, 2022 (Public Law 117–43), except that such amounts shall be for major disasters that occurred in 2023 or 2024 and the fourth, tenth, 15th, 16th, 20th, and 21<sup>st</sup> provisos under such heading in such Act shall not apply: Provided, That the Secretary of Housing and Urban Development shall allocate all funds provided under this heading in this Act for the total estimate for unmet needs including additional mitigation for qualifying disasters and publish such allocations in the Federal Register no later than January 15, 2025: Provided further, That the amount obligated for each qualifying disaster area shall be no less than the amounts specified in such Federal Register publication, unless such allocation is rejected by the grantee: Provided further, That a grantee shall submit a plan to the Secretary for approval detailing the proposed use of all funds, including criteria for eligibility and how the use of these funds will address long-term recovery and restoration of infrastructure and housing, economic revitalization, and mitigation in the most impacted and distressed areas: Provided further, That unobligated balances remaining as of the date of enactment of this Act included under Treasury Appropriation Fund Symbol 86 X 0162 from Public Laws 108–324, 109–148, 109–234, 110–252, 110–329, 111–212, 112–55, and 113–2 shall also be available for the purposes authorized under this heading in this Act (except that the amount for each setaside provided herein shall not be exceeded), notwithstanding the purposes for which such amounts were appropriated: Provided further, That of the amounts made available under this heading in this Act, \$45,000,000 shall be transferred to “Department of Housing and Urban Development—Management and Administration—Program Offices” for salaries and expenses of the Office of Community Planning and Development for necessary costs, including information technology costs, of administering and overseeing the obligation and expenditure of amounts made available for activities authorized under title I of the Housing and Community Development Act of 1974 (42 U.S.C. 5301 et seq.) related to disaster relief, long-term recovery, restoration of infrastructure and housing, economic revitalization, and mitigation in the most impacted and distressed areas resulting from a major disaster in this, prior, or future Acts (“this, prior, or future disaster Acts”): Provided further, That of the amounts made available under this heading in this Act, \$1,850,000 shall be transferred to “Department of Housing and Urban Development—Information Technology Fund” for the disaster recovery data portal: Provided further, That of the amounts made available under this heading in this Act, \$7,000,000 shall be transferred to “Department of Housing and Urban Development—Office of Inspector General” for necessary costs of overseeing and auditing amounts made available in this, prior, or future disaster Acts: Provided further, That of the amounts made available under this heading in this Act, \$25,000,000 shall be made available for capacity building and technical assistance, including assistance on contracting and procurement processes, to support recipients of allocations from this, prior, or future disaster Acts: Provided further, That amounts made available





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under this heading in this Act may be used by a grantee to assist utilities as part of a disaster-related eligible activity under section 105(a) of the Housing and Community Development Act of 1974 (42 U.S.C. 5305(a)): Provided further, That recipients of funds made available in this, prior, or future disaster Acts that use such funds to supplement other Federal assistance may adopt, without review or public comment, any environmental review, approval, or permit performed by a Federal agency, and such adoption shall satisfy the responsibilities of the recipient with respect to such environmental review, approval or permit, so long as the actions covered by the existing environmental review, approval, or permit and the actions proposed for these supplemental funds are substantially the same: Provided further, That the Secretary or a State may, upon receipt of a request for release of funds and certification, immediately approve the release of funds for any activity or project if the recipient has adopted an environmental review, approval or permit under the previous proviso or if the activity or project is categorically excluded from review under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), notwithstanding section 104(g)(2) of the Housing and Community Development Act of 1974 (42 U.S.C. 5304(g)(2)): Provided further, That such amount and amounts repurposed under this heading that were previously designated by the Congress as an emergency requirement pursuant to a concurrent resolution on the budget or the Balanced Budget and Emergency Deficit Control Act of 1985 are designated by the Congress as being for an emergency requirement pursuant to section 251(b)(2)(A)(i) of the Balanced Budget and Emergency Deficit Control Act of 1985.

