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DOCKET NO. 57579

APPLICATION OF CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC FOR APPROVAL OF ITS 2026-2028 TRANSMISSION AND DISTRIBUTION SYSTEM RESILIENCY PLAN	**§ § § § §**	**PUBLIC UTILITY COMMISSION OF TEXAS**

DIRECT TESTIMONY OF

MUSSADIQ AKRAM

ON BEHALF OF

CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC

JANUARY 2025

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND CURRENT POSITION.

A. My full legal name is Mussadiq Akram Arain, but I conduct business as Mussadiq (or Muss) Akram. I am the Vice President of Utility Strategy for CenterPoint Energy, Inc. ("CenterPoint" or "CNP"), the parent company of CenterPoint Energy Houston Electric, LLC ("CenterPoint Houston" or "the Company").

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL AND WORK BACKGROUND.

A. I hold a Bachelor of Science in Chemical Engineering and a Bachelor of Arts in International Relations from Syracuse University. I hold a Masters of Engineering in Chemical Engineering with a specialization in Energy Economics and Engineering from Cornell University. I joined CenterPoint in my current role in September 2023. Prior to joining CenterPoint I was a Senior Director in the Utilities Practice at EY-Parthenon, Ernst & Young's global strategy consulting arm. Prior to that, I worked in the North American energy practice at Oliver Wyman, a global consultancy and part of the Marsh McLennan Group. I also worked for PwC's Strategy& and for its predecessor, Booz & Company. Collectively, I have spent nearly 15 years working with utilities across the United States on strategic issues including planning, solution development, analytics, and transactions.

Q. WHAT ARE YOUR CURRENT RESPONSIBILITIES AT CNP?

A. I currently oversee the long-term growth of our business, with a focus on three things: how new electric power and natural gas loads may materialize, what the resulting impacts will be on the Company's capital planning requirements, and the

impact to customers. I also work across operations, customer, and business support groups to incorporate innovative processes and solutions into our operations to make our businesses more efficient and increase value to customers. Lastly, I am currently responsible for the separation of our Louisiana and Mississippi natural gas utilities and corresponding assets, which we announced the sale of in Q1 of 2024, with an anticipated closing date by end of Q1 2025. The sale of these assets provides the Company greater financing flexibility to invest in critical investments to improve resiliency and reliability in our Houston Electric service territory by deploying proceeds from the sale and reallocating the capital previously associated with those businesses. This transaction is the Company's fourth efficient recycling of capital over the last three years.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of CenterPoint Houston.

Q. HAVE YOU TESTIFIED PREVIOUSLY?

A. No.

Q. WHAT EXHIBITS HAVE YOU INCLUDED WITH YOUR TESTIMONY?

A. I have included 2 exhibits as part of my testimony. Acronyms and capitalized terms in my testimony will have the same meaning as that in Exhibit MA-1, the Glossary of Acronyms.

Q. WAS YOUR TESTIMONY PREPARED BY YOU OR BY OTHERS WORKING UNDER YOUR DIRECTION AND CONTROL?

A. Yes.

II. OVERVIEW OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My testimony provides an overview of how the Company's 2026-2028 T&D SRP will affect customer bills and the benefits customers can expect from the planned investments. I present historic trends for CenterPoint Houston's rates compared to our peer utilities, service area median incomes, and service area total electric rates (energy and T&D charges). I present the projected bill impact from the resiliency investments and compare that against the expectations for the people of the greater Houston area. Finally, I address the benefits of the SRP including the reduction in storm restoration costs and the individual, economic, and social benefits of decreased outages.

III. HISTORIC TRENDS AND FUTURE BILL MITIGANTS

Q. HOW HAVE CENTERPOINT HOUSTON'S RATES CHANGED OVER THE PAST 10 YEARS?

A. CenterPoint Houston's rates have increased, but only a small amount when compared to inflation. From 2014 - 2023, CenterPoint Houston's portion of the customer electric bill has grown by 3%, substantially lower than multiple inflation metrics. For example, Texas total electricity prices (commodity and T&D charges together) have increased by 22% and the Consumer Price Index for the greater Houston region has increased by 25% over the same period. Figure MA-1 below shows CenterPoint Houston's 10-year growth in T&D rates next to various measures of inflation and price increases.

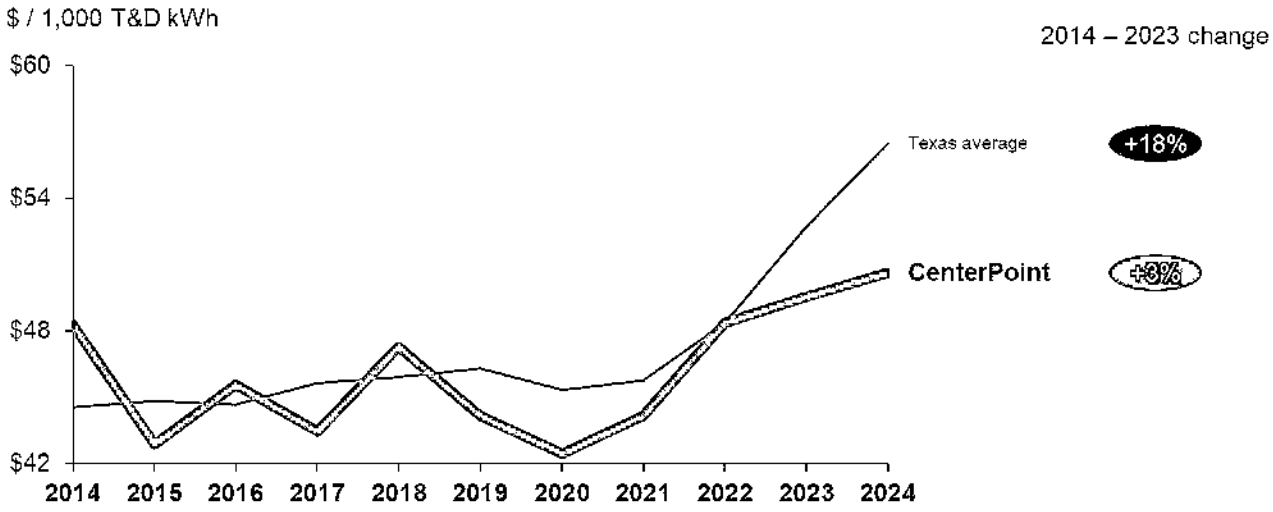
Figure MA-1
2014 - 2023 CenterPoint Houston T&D Rates and Inflation Measurements

CenterPoint Houston T&D rates	+3%
National CPI	+27%
National primary energy	+24%
National electricity	+28%
Houston CPI	+25%
Texas total electricity	+22%
Texas electric energy charges	+35%
Houston median income	+37%

Q. HOW DO CENTERPOINT HOUSTON'S T&D RATES COMPARE TO ITS PEERS, SERVICE AREA MEDIAN INCOMES, AND SERVICE AREA TOTAL ELECTRIC RATES?

A. CenterPoint Houston's rates are historically and comparatively affordable. This holds true across several measurements. For nominal T&D rates and rate changes, CenterPoint Houston's rates were the lowest in 2024 and have increased the least in Texas since 2014. According to T&D rates archived by the PUCT, Texas utilities' T&D rates increased only 18% from 2014 to 2023, significantly beating inflation. Over that same period, CenterPoint Houston's T&D rates increased by a mere 3%. Figure MA-2 below compares CenterPoint Houston's rates to the straight-line average rates across all Texas utilities. For this figure, Texas utilities' archived T&D rates for both March and September are averaged together to calculate the annual rate per 1000 kWh.

Figure MA-2
CenterPoint Houston T&D Rates and Average Texas T&D Rates



As a share of median income and total electric bills, the T&D charges in the CenterPoint Houston service territory are low both compared to the past and compared to the rest of Texas. The CenterPoint Houston service territory has seen the most significant improvement in T&D charges compared to both median incomes and total electric bills. From 2014-2023, CenterPoint Houston's T&D charges' share of median income dropped 25% and its share of total electric bills dropped 29%. This was the greatest reduction of all Texas utilities for both metrics, who averaged a reduction of 12.5% for share of median income and a reduction of 17.5% for share of total electric bills. Figure MA-3 compares the share of service territory median income to the T&D charges of a 1000 kWh / month residential customer for CenterPoint Houston and takes a straight-line average for all Texas T&D companies. Figure MA-4 does the same for total electric bills.

Figure MA-3
CenterPoint Houston and Average Texas T&D Share of Median Income

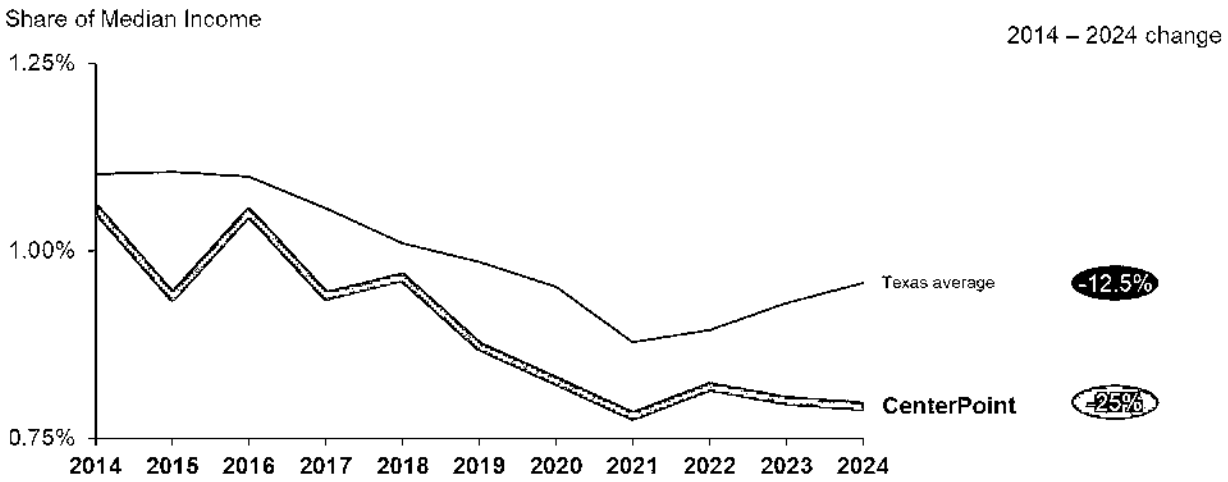
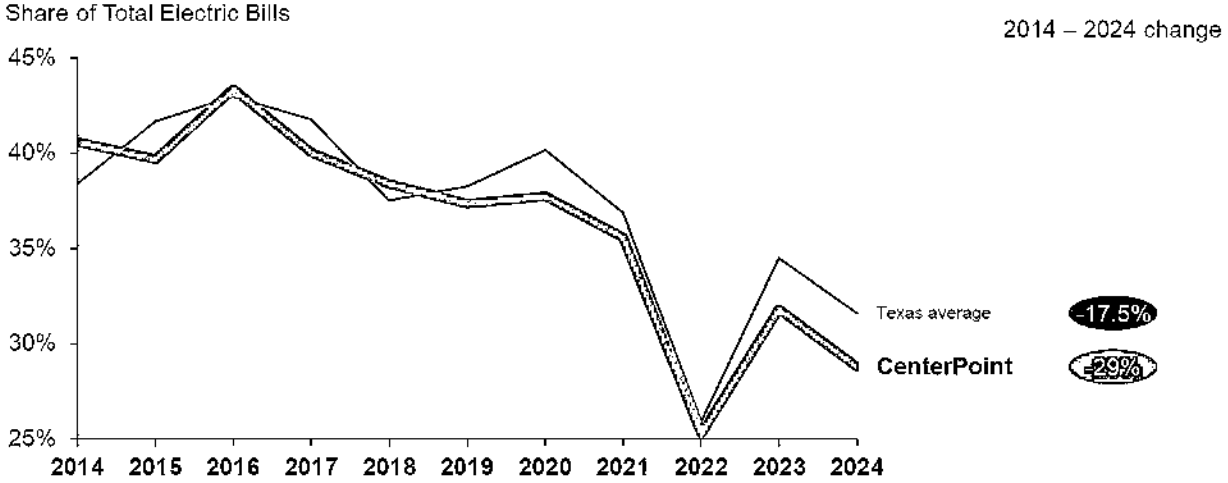


Figure MA-4
CenterPoint Houston and Average Texas T&D Share of Total Electric Bills



The CenterPoint Houston territory currently has the lowest T&D charge both as a share of median income and as a share of the total electric bill. About 0.8% of median income is needed for a 1000 kWh a month bill in the CenterPoint Houston territory, which is 20% below the Texas average of about 1%. The CenterPoint Houston territory share of the total electric bill is about 29%, compared to approximately 32% for the Texas average.

With the lowest T&D rates, the lowest rate growth, the lowest share of median income, the greatest reduction in share of median income, the lowest share of total electric bills, and the greatest reduction in share of total electric bills: CenterPoint Houston's T&D rates are historically and comparatively affordable in Texas.

Q. HOW HAS CENTERPOINT BEEN ABLE TO KEEP BILLS RELATIVELY FLAT FOR CUSTOMERS AND SHOULD THAT TREND BE EXPECTED TO CONTINUE?

A. Organic customer growth and the retirement of various charges have helped keep customer rates relatively flat in the past. Although there are no charges retiring in the future, organic growth is expected to continue to help reduce upward pressure on customer bills.

Organic customer growth in the Greater Houston area has helped contain customer bill impacts by allowing the Company to spread capital investments across a larger customer base. The Company expects organic growth to continue to help customer bills, as discussed in the direct testimony of Company witness Nathan Brownell.

In the past, capital increases also came at a time when various transition and storm recovery charges were being retired. These retirements significantly helped offset the impact of customer rate increases due to the investments needed to provide safe and reliable service. The last transition charge ended in October 2024 and there are no more transition charges left to retire to help offset the impacts of future necessary investments. With the system restoration charges associated with

Hurricane Beryl and the May storms potentially being included on customer bills starting in 2025, additional charges will actually start impacting customer bills rather than stop. While these securitizations increase total charges, they reduce overall rates due to their financial structure and recovery timeline.

Q. WHAT EFFORTS WILL CENTERPOINT HOUSTON MAKE IN THE FUTURE TO REDUCE THE FINANCIAL IMPACT TO CUSTOMERS?

A. The Company has worked to identify and pursue opportunities to obtain federal funding to offset the cost of its resiliency investments. The Company details in the SRP which resiliency interventions the company has applied for grants towards and will continue to do so as available in the future.

IV. PROJECTED BILL IMPACT AND CUSTOMER EXPECTATIONS

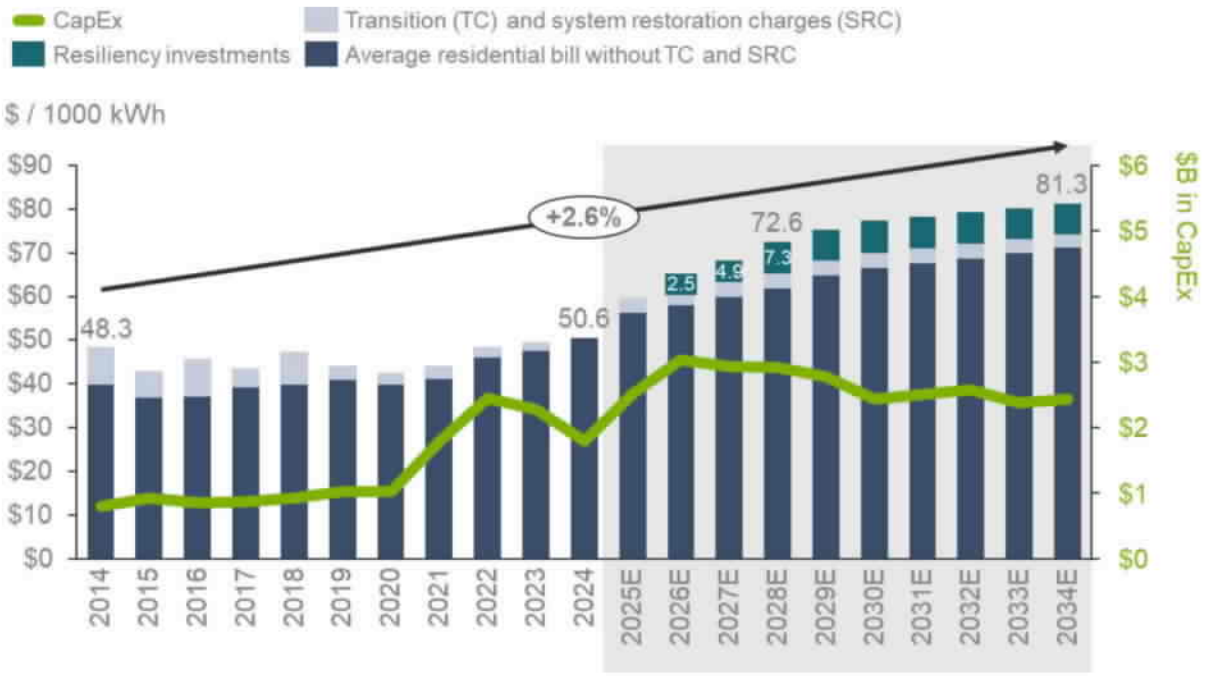
Q. HOW WILL CUSTOMER BILLS CHANGE AS A RESULT OF THIS SYSTEM RESILIENCY FILING?

A. With the Company's proposed $5.5 billion in system resiliency capital investment between 2026 and 2028, bills will increase by approximately $7.33 per month over that three-year period. Based on publicly available capital plans of other Texas T&D utilities, the per year growth is projected to be in line with peers on a percentage basis, reflecting a change that impacts all utilities. Additionally, this outlook does not account for the potential positive impacts that resiliency spending may have on bills in the future. Over the long term, we expect bill increases to follow inflation. Note that adjustments to the capital plan and other variables, like those coming out of the latest rate case, may continue to be made over the course

of time. With these caveats in mind, Figure MA-5 projects the residential customer bill impact of the resiliency plan on a 1000 kWh / month household.

Figure MA-5

CenterPoint Houston Historical and Projected Residential T&D Portion of Electric Bills



Q. WHAT DO WE KNOW ABOUT CUSTOMER EXPECTATIONS FOR COST AND RESILIENCY AND HOW WELL DOES THE SYSTEM RESILIENCY PLAN ADDRESS THEM?

A. Available data suggests that customers today expect a more resilient grid rather than a less expensive one. Two independent sources of data confirm this. First, in a recent University of Houston survey[1], 36% of Harris County voters listed electric service reliability as a top three concern for the county today, leading all concerns

[1] Exhibit MA-2 – University of Houston Texas Votes 2024 Harris County

listed in the survey, including housing affordability, crime, and school quality. Second, in early 2024, ERCOT conducted a VOLL survey that indicated a 40% increase in willingness to pay for increased resiliency over the rate set previously in the year.

VOLL and projected storm recovery savings show that the additional cost is well worth it from the perspective of our customers. Guidehouse projects the system resiliency plan will reduce CMI by 629M minutes per year and have a BCA ratio of 5.4, meaning the benefits of the SRP over the next 10 years are worth 5.4 times the cost.

V. CUSTOMER BENEFITS OF THE SRP

A. CUSTOMER BENEFITS OVERVIEW

Q. HOW WILL THE INVESTMENT IN RESILIENCY MEASURES BRING VALUE TO CUSTOMERS?

A. Customers will benefit from the system resiliency plan due to a reduction in resiliency event costs as well as a reduction in lost load. Only a portion of these benefits, the decreased costs of resiliency events, will directly offset the bill impacts of the resiliency plan. The remainder of the benefits will reduce CMI and therefore the cost of lost load.

B. BENEFITS TOWARDS FUTURE CUSTOMER BILLS

Q. HOW WILL THE RESILIENCY PLAN PROVIDE A BENEFIT FOR FUTURE CUSTOMER BILLS?

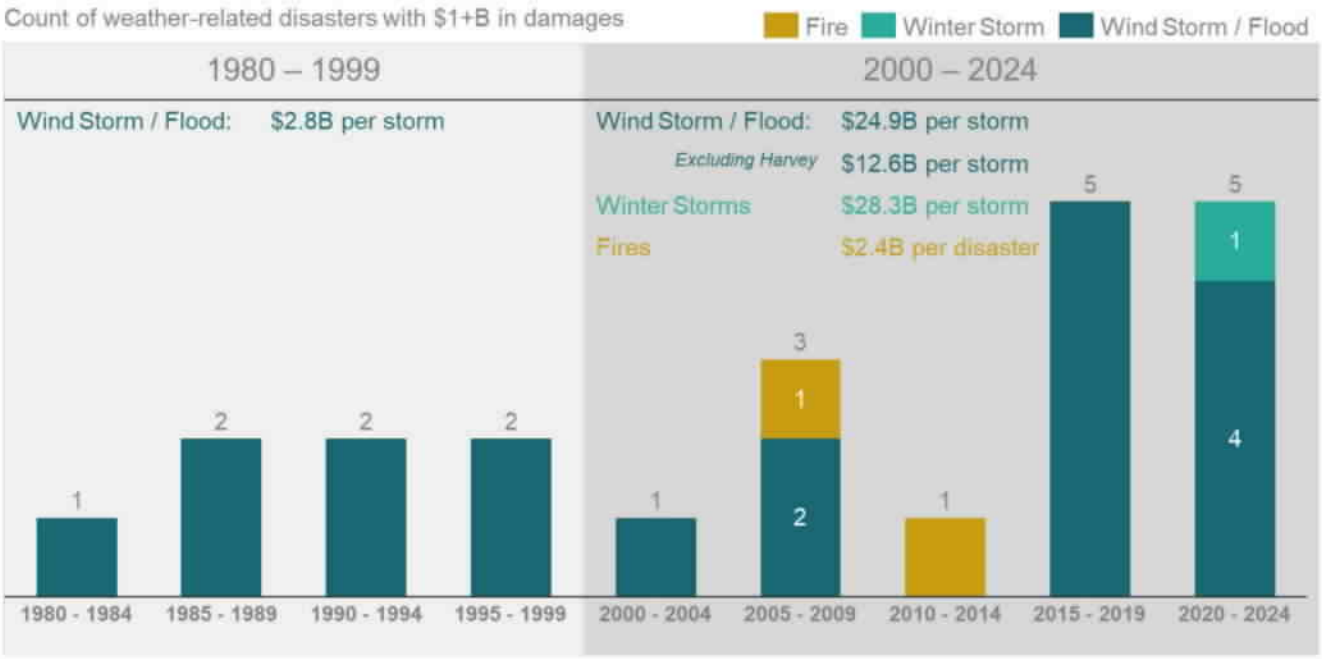
A. The resiliency plan will meaningfully reduce the costs of restoring the system due to resiliency events, like major storms. According to an independent third-party

analysis conducted by Guidehouse, the resiliency plan is expected to save $43M in storm restoration per year. Applying a simple spread across 2.8M customers, that equates to a projected long term savings of approximately $1.28 / month.

Q. HOW HAS THE FREQUENCY AND INTENSITY OF MAJOR STORMS EVOLVED AND HOW IS IT FORECASTED TO CHANGE?

A. Major storms have increased in intensity and frequency, and that trend is forecasted to continue. These storms constitute a significant portion of historical storm recovery costs. Since 2019, major storms like Hurricane Beryl and the May Derechos have constituted about $1.7B of the approximately $2.0B spent by the Company on storm recovery. These costly storms have become more common in Houston. 19 major wind storm / flood disasters, each causing $1+B in inflation adjusted economic damages, have impacted counties that CenterPoint Energy Houston Electric operates in since 1980. 12 of those storms happened since the year 2000 and 9 of those storms happened since the year 2015. These storms have also become more intense, causing more damage. Between 1980 and 2000, the average economic damages were $2.8B per storm. Between 2000 and 2024, the average economic damages were $24.9B per storm. Figure MA-6 charts the major storms and disasters that impacted counties CenterPoint Houston operates in since 1980.

Figure MA-6
$1+B Disasters to Impact a County CenterPoint Houston Operates in Since 1980



Additional information about the company's current resiliency event risks can be found in the SRP.

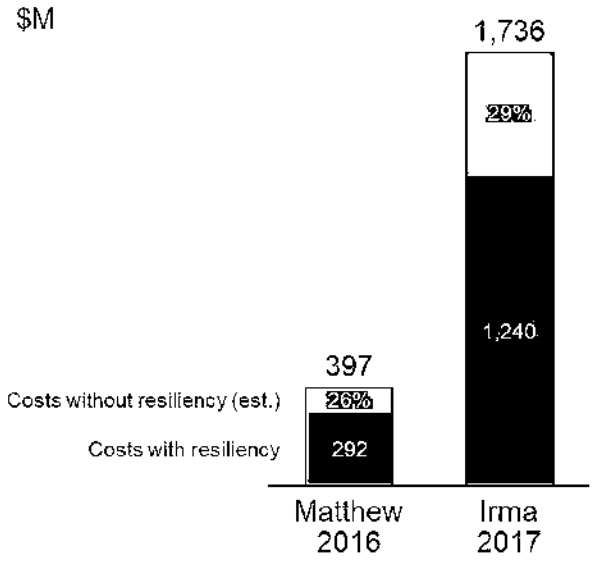
It is expected that these storms will become more common and more intense. Section 4.2 in Guidehouse's report covers various natural disaster forecasts.

Q. HAVE OTHER UTILITIES MADE SIMILAR INVESTMENTS AND SEEN STORM RECOVERY BENEFITS?

A. Yes. Other utilities, such as Florida Power and Light (FPL), have seen significant storm related savings from resiliency efforts. Between 2006 and 2017, FPL spent approximately $3.7B inflation adjusted dollars on transmission and distribution related resiliency programs. Their system was tested in 2016 and 2017 by Hurricanes Matthew and Irma. FPL estimates that storm recovery for Hurricane

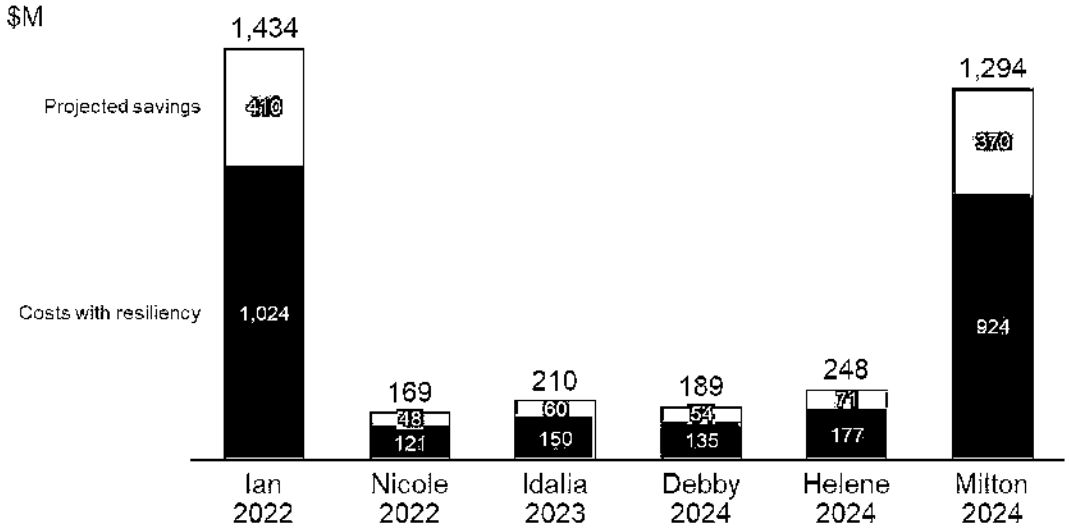
Irma would have cost 40% more, or a 29% savings on the potential amount, if not for their resiliency efforts. Figure MA-7 shows FPL's storm recovery costs and estimates of storm savings for Hurricanes Matthew and Irma.

Figure MA-7
FPL's Storm Recovery Costs and Estimates of Storm Recovery Savings



Further investments have been made and FPL's system has been tested several times, generating additional savings. Since 2017, FPL spent approximately an inflation adjusted $9B on resiliency, and between 2022 and 2024 their system was tested again by several hurricanes. Given the investments, the conservative estimate for resiliency related savings on these storms is at the same rate seen in 2017. If that rate of savings is applied to the storm recovery costs of hurricanes since 2017, FPL has saved $1+B in storm recovery costs on Hurricanes alone. Figure MA-8 charts the storm recovery costs of hurricanes that impacted FPL since 2022 and estimates storm recovery savings.

Figure MA-8
Projected FPL Storm Recovery Savings Since 2022



Additional information about how CenterPoint Houston's resiliency plan aligns with the resiliency plans of other utilities can be found in Appendix A of Guidehouse's report.

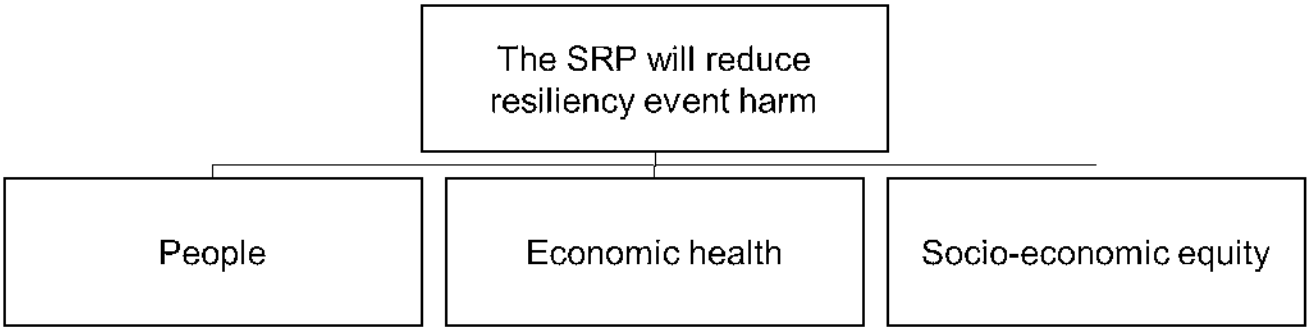
C. OVERVIEW OF NON-BILL BENEFITS

Q. WHAT ADDITIONAL BENEFITS SHOULD BE CONSIDERED THAT WILL NOT SHOW UP ON THE CUSTOMER BILL?

A. Significant benefits for customers come from reducing lost load caused by resiliency events. While the types of resiliency events may be diverse, the resulting outage related harm is largely the same. The system resiliency plan will help mitigate against the risks posed, and by extension the outage related harm to the people, economic health, and socio-economic equity of the Greater Houston Area. Though the mitigation of these harms will neither result in lower electric bills nor eliminate the harm entirely, the SRP will provide tangible differences in outcomes through the reduction of CMI. The indirect costs and effects outlined in the rest of

my testimony give additional definition to the concept of VOLL, especially for the residential customer.

Figure MA-9
Types of resiliency event harm reduced



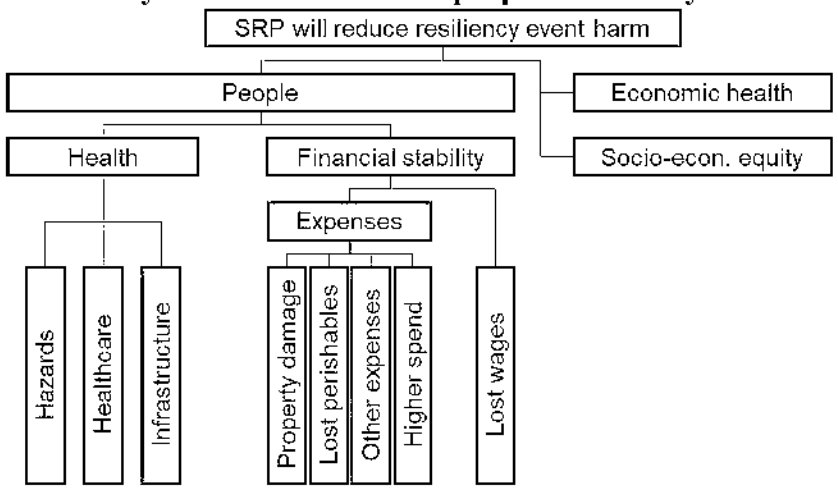
In addition to the avoided CMI, the system resiliency plan will result in direct economic activity in the greater Houston area.

D. NON-BILL BENEFITS FOR THE PEOPLE OF HOUSTON

Q. HOW WILL THE SYSTEM RESILIENCY PLAN PROVIDE ADDITIONAL BENEFITS FOR THE PEOPLE OF THE GREATER HOUSTON AREA?

A. For the people of the greater Houston area, the system resiliency plan will reduce outage related harm to health and safety and financial stability caused by a resiliency event.

Figure MA-10
Resiliency event-based harm to people reduced by the SRP

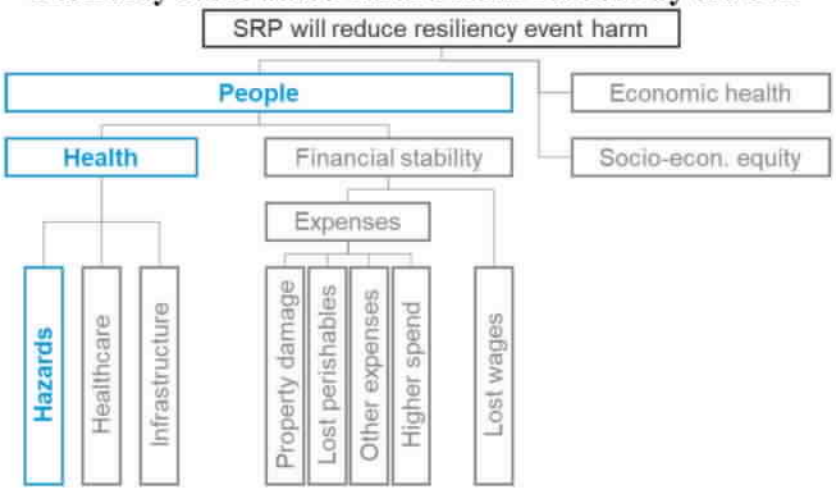


Outage related hazards, a reduction in healthcare quality, and public infrastructure degradation are types of personal harm that will be mitigated by the resiliency plan. For harm to a person's financial stability, unexpected expenses along with lost wages can occur at the same time, creating a financial pinch that is felt the most by those in low-income households.

Q. HOW WILL THE SYSTEM RESILIENCY PLAN REDUCE HAZARD RELATED HARM TO INDIVIDUALS?

A. The system resiliency plan will reduce outage related hazards, including illnesses and injuries.

Figure MA-11
Resiliency event-based hazard harm reduced by the SRP



Illnesses such as heat stroke can quickly turn dangerous during a resiliency event in the summer months where AC and clean water may not be available due to an outage. Houston's chief medical officer noted a 300% increase in hospital visits for heat related illnesses compared to a typical day in July in the days following Hurricane Beryl.[2] Heat also inequitably affects our elderly population.[3]

Illness, food, and other poisoning can occur due to improperly set up generators or eating spoiled food out of non-functioning refrigerators. Following Hurricane Beryl, 212 carbon monoxide poisoning calls due to improper generator use occurred, which was 70 times the number during the same period in 2023.[4] [5]

For food poisonings, the FDA advises that all food be thrown out of non-functioning refrigerators after four hours, leaving families with the hard choice of

[2] https://www.houstonchronicle.com/news/houston-texas/article/beryl-sends-houstonians-flocking-emergency-rooms-19567476.php
[3] https://www.houstonchronicle.com/news/houston-texas/article/beryl-sends-houstonians-flocking-emergency-rooms-19567476.php
[4] https://www.houstonchronicle.com/neighborhood/conroe/article/power-outage-montgomery-county-911-19567066.php
[5] https://www.houstonpublicmedia.org/articles/news/hurricane/2024/09/26/501147/hurricane-beryls-death-toll-rises-to-40-in-houston-area/

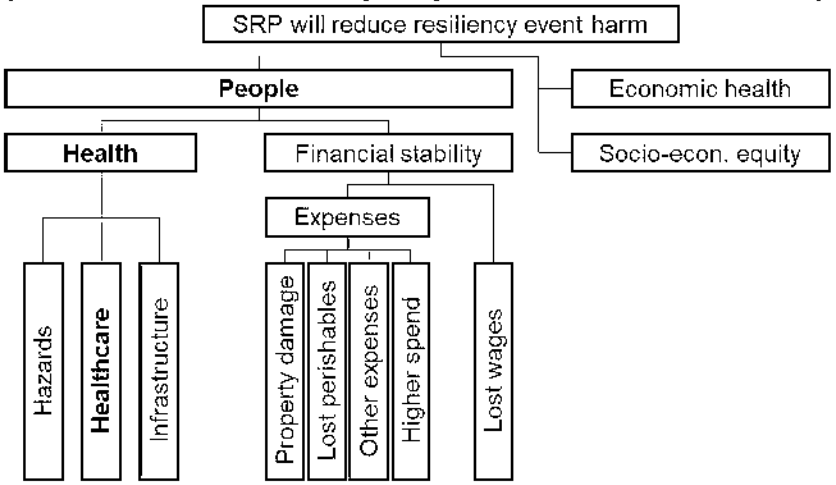
spending the money to replace their groceries, going hungry, or eating potentially tainted food.[6] There are historical examples implying that people choose to run the risk of eating the food. After the 2003 New York City blackouts, there was a 70% increase in patient visits for diarrheal syndrome than expected.[7]

The lack of light indoors can create trip and fall hazards, especially for vulnerable populations like seniors and people with limited mobility.

Q. HOW WILL THE SYSTEM RESILIENCY PLAN REDUCE OUTAGE RELATED HARM TO HEALTHCARE QUALTITY FOR INDIVIDUALS?

A. By reducing outages, the system resiliency plan will reduce harm to healthcare quality during a resiliency event for both in and out-patients.

Figure MA-12
Resiliency event-based healthcare quality reduction harm reduced by the SRP



Medical devices, perishable medicine, and emergency response can be degraded for outpatients due to an outage. Life-sustaining medical devices, such as oxygen machines, can run out of battery and stop functioning. About 3,000 households in

[6] https://www.foodsafety.gov/food-safety-charts/food-safety-during-power-outage#:~:text=Discard%20refrigerated%20perishable%20food%20such,in%20Doubt%2C%20Throw%20it%20Out

[7] https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2004.061358

Houston have at least one member dependent on electric powered medical devices.[8] Degraded medicines can also negatively impact healthcare quality. Medicines such as Augmentin can degrade in unrefrigerated environments, resulting in a choice between a financial hit or potentially negative health outcomes.[9] Emergency response, like EMT response times, can be degraded due to an outage.[10]

In hospitals, outages can degrade healthcare quality due to delays in emergency and scheduled care. Delays to emergency care occurred during Hurricane Beryl due to an increase in emergency visits, many of which were outage related, and slower patient treatment. Harris Health Ben Taub and UTMB saw a 35 to 50% increase in daily visits in the days following Hurricane Beryl.[11] Once admitted, patient healthcare was slowed by outage related connectivity issues, disrupting patient medical records access and the ordering of various tests.[12] Once treated, patient discharge was slowed because their medical condition necessitated their home have air conditioning before they returned. This combination of higher volumes and slower treatment times led to overcrowding in waiting rooms, delays in admission for medical emergencies, and the need for overflow beds to be set up

[8] https://apnews.com/article/power-outages-medically-vulnerable-texas-electricity-grid-60154dbd83ad162f3bb57d757b96e464

[9] https://www.vumc.org/poison-control/toxicology-question-week/oct-3-2005-what-stability-refrigerated-medications-room-temperature

[10] Firefighter's Handbook: Essentials of Firefighting, Chapter 25, Disaster and Large Incident Response ("Power outages can adversely affect fire stations and fire department resources.") found at https://slideplayer.com/slide/7636988/.

[11] Houston ERs 'jam packed' after Hurricane Beryl

[12] https://www.texastribune.org/2024/07/10/texas-hospitals-beryl-power-outages/

in an indoor stadium by city officials.[13] Some ambulances waited three hours to offload their patients due to overcrowding in the waiting room.[14]

The system resiliency plan will reduce delays to scheduled care due to outages as well. Over 30 medical facilities were closed due to outages after Hurricane Beryl, including some belonging to MD Anderson Cancer Center and Texas Children's Hospital, deferring scheduled visits and procedures.[15] Resiliency Events and the power outages they cause can disrupt scheduled care such as dialysis treatment.[16]

Q. HOW WILL THE SYSTEM RESILIENCY PLAN REDUCE HARM TO INDIVIDUALS RELATED TO INFRASTRUCTURE DEGRADATION?

A. The system resiliency plan will reduce outage related degradations to the water system and traffic signals, ultimately preventing harm to individuals.

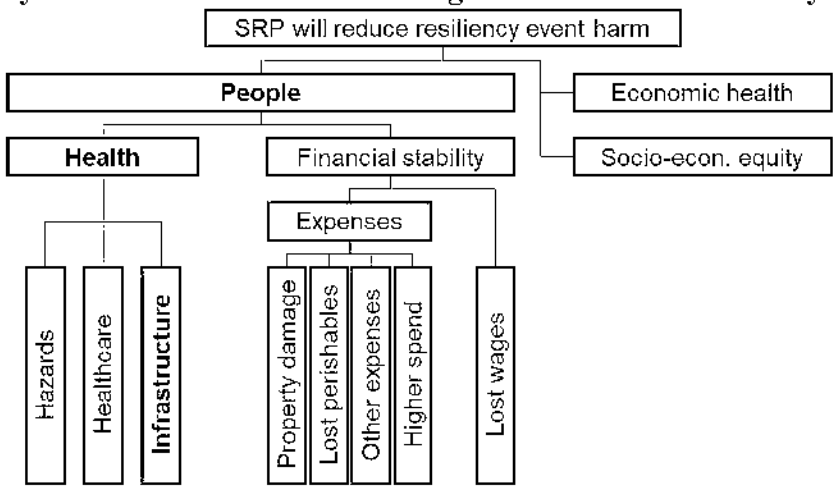
[13] https://www.cnn.com/2024/07/12/weather/houston-texas-power-outages-heat-friday/index.html

[14] https://www.houstonpublicmedia.org/articles/news/health-science/healthcare/2024/07/15/493483/houston-hospitals-overcrowded-after-beryl-causing-delays-in-discharges-and-treatment/

[15] https://www.houstonchronicle.com/health/article/houston-hospitals-hurricane-beryl-closings-19562637.php

[16] National Kidney Foundation, "Planning for Emergencies—A Guide for People with Kidney Disease," viewed at https://www.kidney.org/kidney-topics/planning-emergencies-guide-people-kidney-disease on January 27, 2025.

Figure MA-13
Resiliency event-based infrastructure degradation harm reduced by the SRP



Water pressure may not be able to be maintained during an outage within buildings and throughout the system, resulting in the unavailability of flowing water or the issuance of boil notices. This can result in an inability to make meals, bathe, use the toilet, or access drinking water at home. At the building level, power outages during the Derecho in May 2024 caused the failure of water pumps in apartment buildings in the Houston area.[17] At the system level, power outages in Richmond Virginia in January 2025 caused the water treatment plant pumps to fail, resulting in the halt of flowing water.[18] Over 160 boil notices impacting over 100,000 Houston area residents were issued in the aftermath of Hurricane Beryl due to outage related loss of water pressure.[19,20]

The system resiliency plan will reduce outage related harm caused by traffic accidents. During an outage, traffic lights go dark and accidents increase.

[17] https://www.click2houston.com/news/local/2024/05/23/apartment-complex-left-without-electricity-and-water-for-a-week-straight
[18] https://www.washingtonpost.com/dc-md-va/2025/01/07/richmond-water-outage-general-assembly-session/
[19] https://www.newsweek.com/drinking-water-warnings-issued-thousands-texas-1924714

Approximately 1,300 calls about traffic light outages were made to Houston Public Works following Hurricane Beryl. In the week following Hurricane Beryl, a 68% increase in accidents and a 40% increase in accident injuries occurred at traffic lights in the Houston Metro area.[21]

Q. HOW WILL THE SYSTEM RESILIENCY PLAN REDUCE HARM TO PERSONAL FINANCIAL STABILITY DUE TO ADDITIONAL EXPENSES?

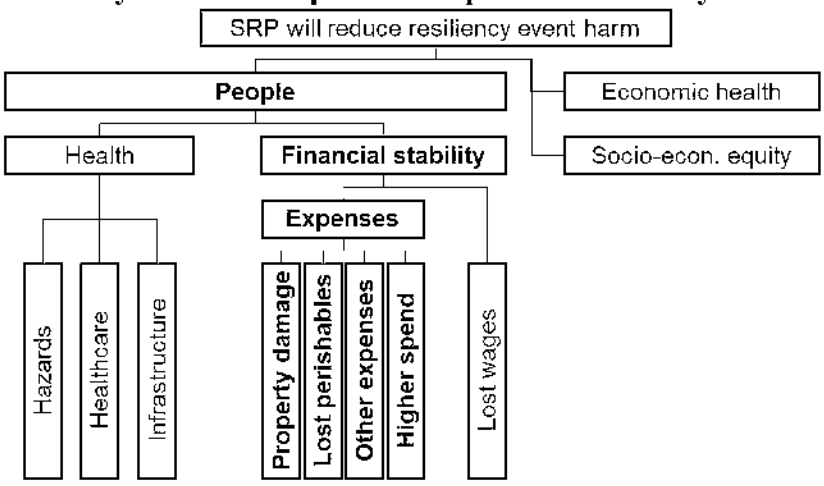
A. The system resiliency plan will reduce resiliency related expenses for individuals. These significant expenses can include property damage, lost perishables, other unexpected spending, and higher spend on essentials. Utility customers bear the brunt of these expenses, because utility tariffs, which are approved by the Public Utility Commission and have the force of law, do not permit recovery of such expenses from utilities except in cases of gross negligence or willful misconduct.[22]

[20] https://www.khou.com/article/news/local/harris-county/southeast-texas-boil-water-notices-beryl/285-f552d9a8-1680-485e-bbb9-0375b8c4a089

[21] https://houstonlanding.org/data-traffic-crashes-injuries-at-stoplights-spiked-in-houston-area-after-hurricane-beryl/#:~:text=During%20the%20same%20stretch%2C%20which,62%20such%20crashes%20were%20reported.

22 Tex. Admin. Code § 25.214(d), Form of Tariff for Retail Electric Delivery Service, Section 5.2 (Limits on Liability).

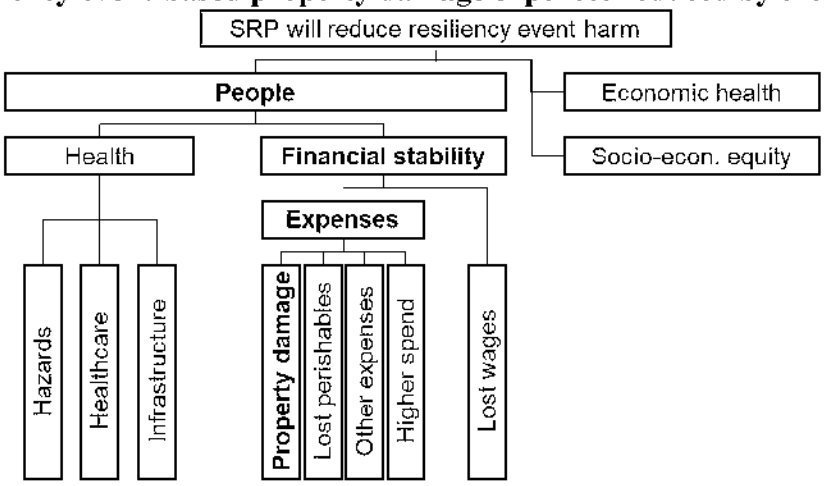
Figure MA-14
Resiliency event-based personal expenses reduced by the SRP



Q. HOW WILL THE SYSTEM RESILIENCY PLAN REDUCE EXPENSES CAUSED BY PROPERTY DAMAGE?

A. The system resiliency plan will harden the infrastructure, preventing outage-related repairs.

Figure MA-15
Resiliency event-based property damage expenses reduced by the SRP



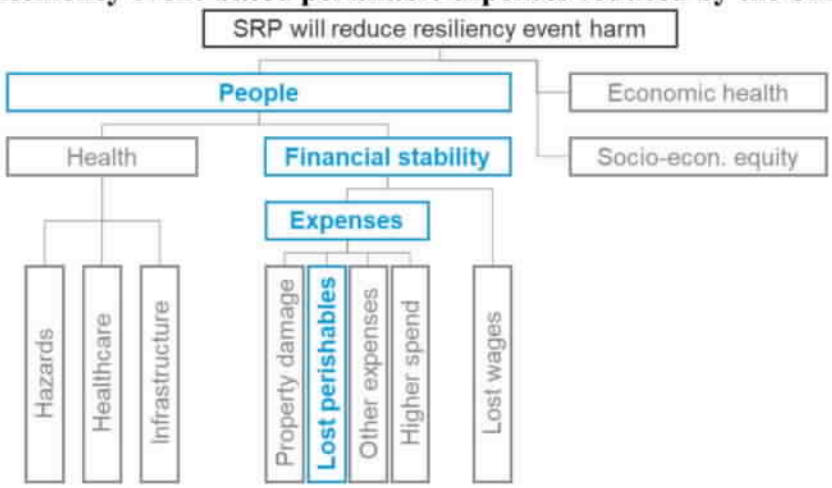
Electrical fires caused property damage following Hurricane Beryl. Electrical fires occurred as people used unsafe ways to get power into their homes from neighbors and portable generators by "daisy chaining" extension cords. In the week following

Hurricane Beryl, there were twice the number of fires reported compared to the week prior.[23] Putting aside the personal physical harm that can occur, fixing such property damage can be expensive.

Q. HOW WILL THE SYSTEM RESILIENCY PLAN REDUCE EXPENSES CAUSED BY LOST PERISHABLES?

A. The system resiliency plan will reduce expenses related to replacing lost perishable food, breastmilk, and medicine.

Figure MA-16
Resiliency event-based perishable expenses reduced by the SRP



Perishable items may need to be replaced, like refrigerated and frozen items after a certain outage duration. A family of two with a week's worth of groceries in their refrigerator and freezer would lose about $160 after a 4-hour outage.[24] Breastmilk is another perishable, high effort or high expense item often stored in large

[23] https://dmwilson.info/Home/Search?FromDate=07%2F08%2F2024&ToDate=07%2F14%2F2024&types=8&types=33&types=60&types=119&types=15&types=293&types=65&types=21&types=68&types=90&types=7&types=26&types=52&types=10&types=298&types=44&types=49&types=97&types=38&types=113&types=230&types=62&types=29&types=4&types=54&types=50&types=115&types=72&types=133&types=143&types=99&types=98&types=86&types=145&types=35&types=53&types=30&types=46&types=136&types=165&types=247&types=51&types=47&ItemsPerPage=ALL&Page=1

[24] https://www.fns.usda.gov/research/cnpp/usda-food-plans/cost-food-monthly-reports

quantities in refrigerators of many households. Often donated to pre-term babies or mothers with low milk supply, breastmilk will similarly need to be discarded after four hours in a non-functioning refrigerator.[25] Despite being donated, breastmilk can cost $3-5 per ounce and babies can consume between 32 and 48 ounces per day.[26] Taking the middle of both ranges, that means the value at risk for a week's supply for one baby is $1,120. 966,000 customers lost power for over four hours following the May 16th Derecho. During Hurricane Beryl, about 2 million customers lost power for over four hours.

Expensive medicines can also expire or lose potency due to a loss of power to a refrigerator. While medicines like insulin will last up to 28 days at room temperature, resiliency events often occur over the summer, when temperatures in un-air-conditioned indoor areas will soar well above room temperature. Insulin can lose potency at higher temperatures. Over 100,000 people in the Houston area are estimated to depend on insulin, which typically has a $25 co pay.[27,28,29,30]

Q. HOW WILL THE SYSTEM RESILIENCY PLAN REDUCE OTHER UNEXPECTED EXPENSES?

A. The system resiliency plan will reduce the potential need for other unexpected expenses relating to various types of care and additional items needed to help deal with outages.

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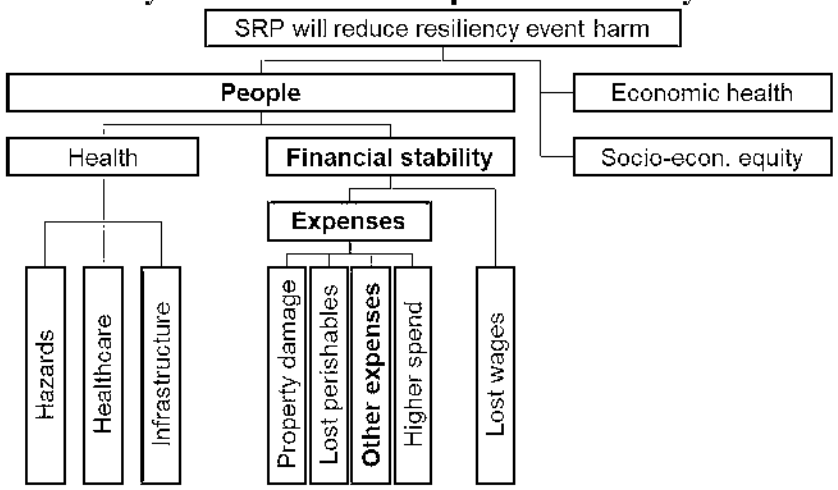
[25] https://www.cdc.gov/breastfeeding/breast-milk-preparation-and-storage/handling-breastmilk.html
[26] https://www.ncsl.org/state-legislatures-news/details/donor-human-milk-more-valuable-than-gold#:~:text=The%20average%20cost%20is%20%243,it%20can%20be%20less%20expensive.
[27] https://www.understandinghouston.org/topic/health/health-outcomes#overview
[28] https://diabetes.org/newsroom/american-diabetes-association-announces-support-for-insulin-act-at-senate-press-conference
[29] https://pubmed.ncbi.nlm.nih.gov/37930742/#:~:text=Eli%20Lilly%20and%20Company%20provided,environmental%20conditions%20and%20insulin%20pumps.
[30] https://diabetes.org/tools-resources/affordable-insulin/state-insulin-copay-caps

Figure MA-17
Resiliency event-based other expenses reduced by the SRP



The system resiliency plan will reduce the cost of medical care associated with an outage as well as the cost of unanticipated family care required to replace care providers shut down by a power outage. Medical treatment is expensive, costing about $650 – 900 per in network emergency room visit, which affects people hospitalized during the aftermath of a hurricane or other Resiliency Event.[31] Finding care for other family members may be necessary to get to work and is also expensive. Childcare, elderly care, and disabled care can cost more than $300 per 8-hour shift.[32,33,34,35]

For additional items needed to help deal with the outage, people may be required to purchase items to deal with the outage, like bottled water, candles, and batteries for flashlights. While costs for these items individually may not be high

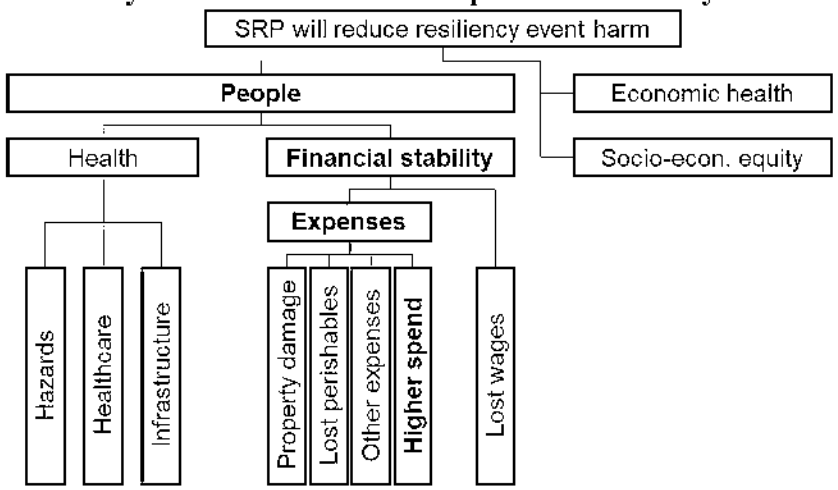
[31] https://www.chron.com/neighborhood/article/Average-Houston-emergency-room-bills-comparison-13785654.php
[32] https://www.care.com/cost/caregivers/houston-tx?_qs=1
[33] https://www.care.com/cost/babysitters/houston-tx?_qs=1
[34] https://www.care.com/c/special-needs-care-for-adult-children-cost-of-care/
[35] https://www.abetlife.com/cost-of-home-care-in-houston-explained

compared to other outage related costs, they compound on top of the financial pressures discussed previously.

Q. HOW WILL THE SYSTEM RESILIENCY PLAN REDUCE HIGHER SPEND ON ESSENTIALS?

A. The system resiliency plan will reduce the outage related need for higher spend on essentials like food and gasoline.

Figure MA-18
Resiliency event-based elevated expenses reduced by the SRP



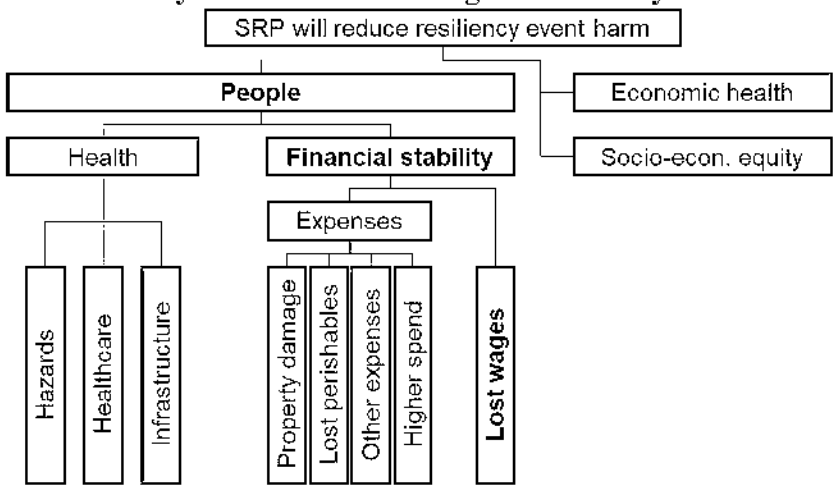
For food, people may need to spend more on meals by buying more food from restaurants if they are unable to cook at home due to a lack of edible food, non-functioning electric stovetop, or lack of clean, running water. A typical adult fast-food meal costs approximately three times more than what it would cost to make an equivalent meal at home. Additionally, people may spend more money on gas as they run their vehicles to get AC, charge their devices, or drive across town to check up on loved ones. Idling a vehicle can burn 0.2 – 0.5 gallons per hour and

Houston gas prices the week after Beryl were about $3/gallon.[36,37] While $0.60 - $1.50 per hour spend on fuel is small compared to other costs associated with outages, it still adds to the financial pressures, similar to spend on items like bottled water.

Q. HOW WILL THE SYSTEM RESILIENCY PLAN MITIGATE AGAINST HARM CAUSED BY LOST WAGES?

A. The system resiliency plan will help prevent financial harm caused by lost wages by reducing outage related workplace closures and barriers to showing up for work.

Figure MA-19
Resiliency event-based lost wages reduced by the SRP



Workplaces can shut down if they cannot operate without power or maintain safe conditions, impacting wages for hourly workers. During the aftermath of Beryl, 68.8% of businesses reported temporarily halting operations, impacting an estimated 1.3M hourly workers.[38]

[36] https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=EMM_EPMRR_PTE_Y44HO_DPG&f=W

[37] https://afdc.energy.gov/files/u/publication/which_is_greener.pdf

[38] https://www.houstonpublicmedia.org/articles/news/hurricane/2024/08/13/496407/beryl-cost-houston-billions-but-was-a-fraction-of-ike-or-harveys-impact/

Even if the business is open, people may not be able to show up to work due to care needs and accessibility issues. For care, people may not be able to go to work because they need to care for a family member, especially if care is not available or too expensive. Inoperable public transit, a lack of available gasoline, or a lack of charge for devices and internet access can make work access impossible. All of these reasons can result in workers not being able to show up to work. After Hurricane Beryl, 91.3% of businesses surveyed reported they had employees who were unable to show up to work. 77.5% reported that it took 3-7 days to return to normal staffing levels.[39] These lost wages can occur at the same time as increased expenses, which creates a financial pinch felt the most by low-income households.

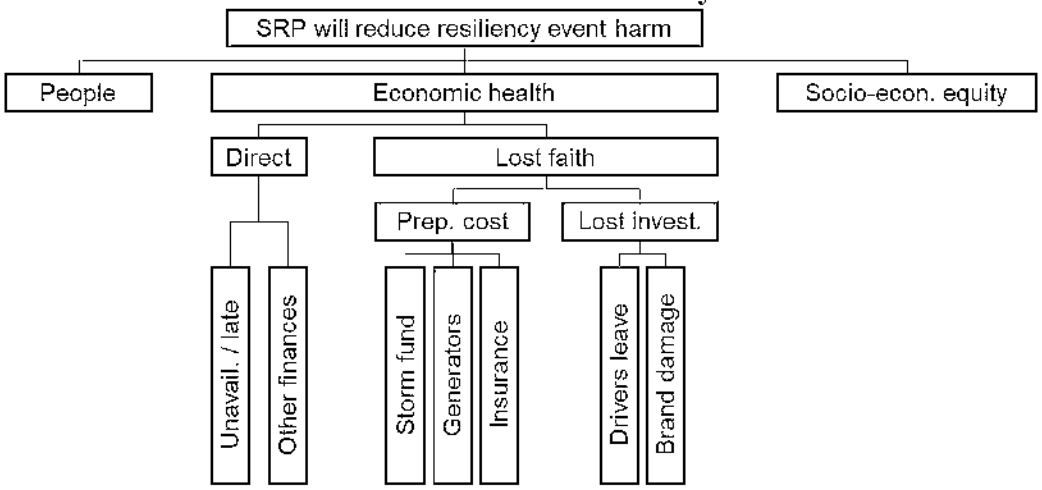
E. NON-BILL BENEFITS FOR THE REGIONAL ECONOMY

Q. HOW WILL THE SYSTEM RESILIENCY PLAN PROVIDE ADDITIONAL BENEFITS FOR THE ECONOMIC HEALTH OF THE GREATER HOUSTON AREA?

A. The system resiliency plan will help reduce outage related harm to the economic health of the greater Houston area.

[39] https://www.houston.org/houston-data/economy-glance-august-2024

Figure MA-20
Harm to economic health reduced by the SRP

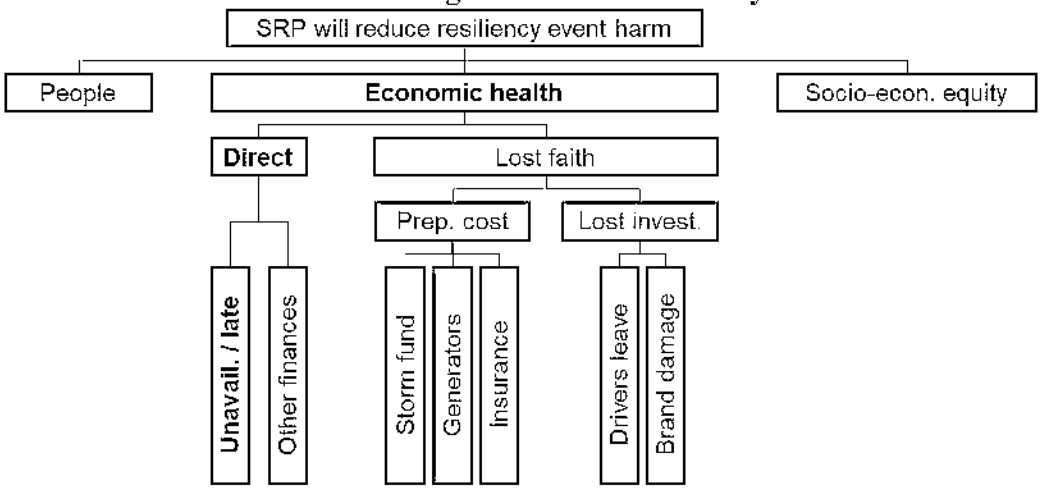


The harm reduced includes direct regional economic disruption and the cost of lost faith in the region's infrastructure. The system resiliency plan will reduce direct economic disruption by reducing the unavailability of goods, late deliveries, and other harm to business finances. For the costs of lost faith in the region's infrastructure, the system resiliency plan will help mitigate against businesses outage preparedness costs and depressed regional investment.

Q. HOW WILL THE SYSTEM RESILIENCY PLAN REDUCE UNAVAILABLE GOODS AND LATE DELIVERIES?

A. The system resiliency plan will reduce unavailable goods and late deliveries by reducing outage related temporary business closures, logistical delays, and production delays. These problems can disrupt Houston's economic engine, valued at over $2B per day.

Figure MA-21
Unavailable and late goods harm reduced by the SRP



The system resiliency plan will reduce harm to the people of Houston caused by the unavailability of needed goods and services. Aside from business and medical disruptions mentioned earlier in testimony, gas stations can also be closed. These closures can prevent people from being able to get to work, reaching loved ones, or charging their devices. During Hurricane Isaac in 2012, "almost all gas stations were without electricity and backup generators."[40]

Logistical delays can cause stock outs of needed goods at stores as well as late deliveries to customers of Houston based businesses. Hurricanes are a tremendous threat to shipping trade, and can shut down operations in an impacted port, like the Port of Houston, for 4-5 days.[41] During Hurricane Beryl, the Port of

[40] Federal Emergency Management Agency, "Power Outage: Keep Vehicles Fueled," viewed at https://community.fema.gov/ProtectiveActions/s/article/Power-Outage-Keep-Vehicles-Fueled on January 27, 2025, quoting Scott B. Miles et al., "Hurricane Isaac Power Outage Impacts and Restoration," Journal of Infrastructure Systems 22, no. 1.

41 Destia, "Hurricanes: The Greatest Rival to North American Trade," viewed at https://desteia.com/2024/04/22/hurricanes-trade/ on January 27, 2025.

Houston was shut down for 48 hours, disrupting about $1.2B in export trade value and 340,000 tons of cargo.[42,43,44]

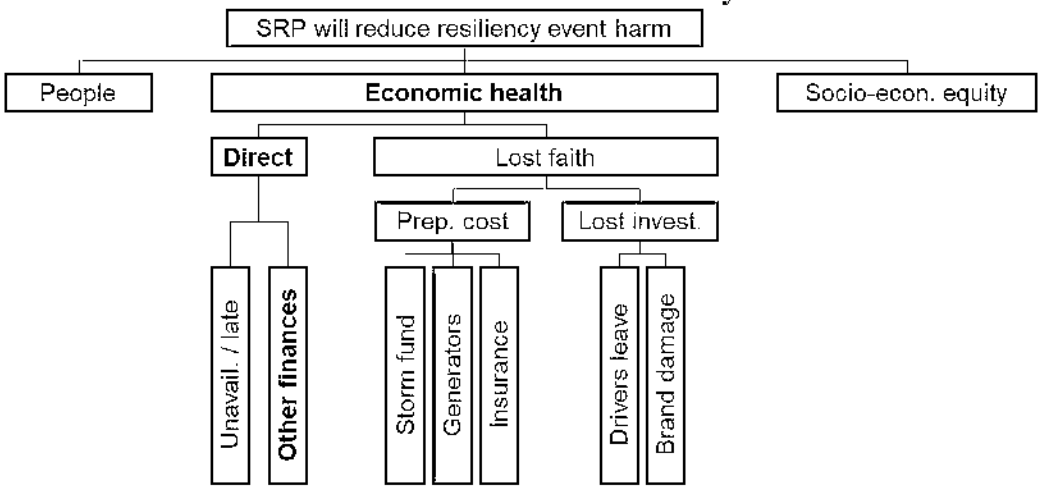
Production delays can occur due to plant shut downs, also potentially resulting in stock outs or late deliveries. These plants may need to be shut down in the event of an outage and can take a long time to start back up, potentially constricting supply for a prolonged duration. During winter storm Uri, chemicals facilities needed to be taken offline. Two months later, 18% of chemicals production capacity was still offline and some facilities took a year to resume full capacity.[45]

Q. HOW WILL THE SYSTEM RESILIENCY PLAN REDUCE FINANCIAL HARM TO BUSINESSES?

A. The system resiliency plan will reduce outage related financial harm to businesses by reducing lost revenues and lost inventories.

[42] https://www.houston.org/houston-data/economy-glance-august-2024
[43] https://porthouston.com/wp-content/uploads/2024/05/PHA_Other_Foreign-Trade_2023-1.pdf
[44] https://porthouston.com/wp-content/uploads/2025/01/12-December-24-PHA-Comparative-Stats.pdf
[45] https://ihsonline.org/Portals/0/Tech%20Papers/McEntire_Impact_of_Winter_Storm_Uri_on_Chemical_Facilities.pdf

Figure MA-22
Financial harm to businesses reduced by the SRP



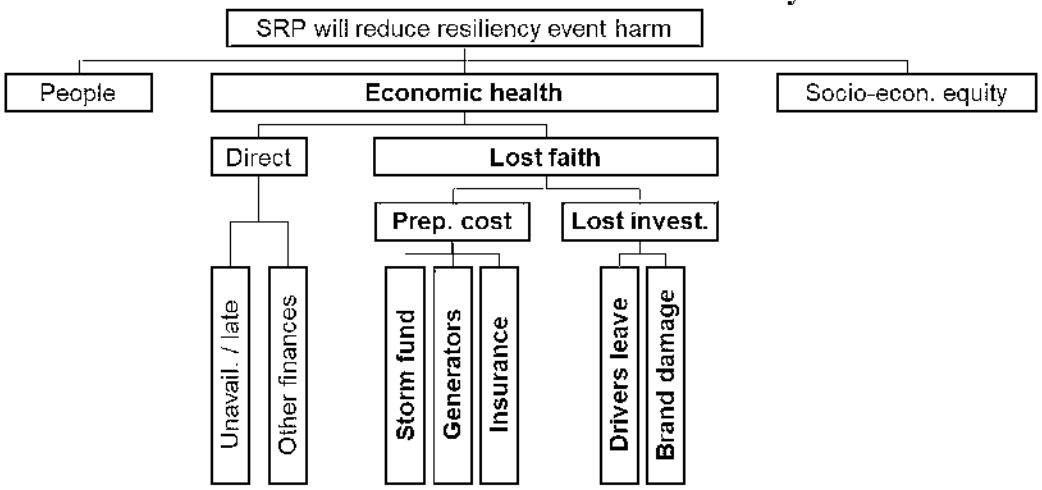
Following Hurricane Beryl, 41.3% of businesses reported losing sales or revenues .[46] In the same survey, 10% of businesses reported inventory losses following Hurricane Beryl.[47] Over a longer period, the negative impacts of resiliency events can join a host of other issues that have lasting impacts on businesses, including cutting staff or completely going out of business. These impacts can be especially damaging to the small business ecosystem, as they typically do not have the means to absorb these financial impacts.

Q. HOW WILL THE SYSTEM RESILIENCY PLAN REDUCE THE COSTS OF A LOST FAITH IN THE REGION'S INFRASTRUCTURE?

A. The system resiliency plan will reduce the costs of a lost faith in the region's infrastructure by reducing businesses' outage preparedness costs and lost regional investment.

[46] https://www.houstonpublicmedia.org/articles/news/hurricane/2024/08/13/496407/beryl-cost-houston-billions-but-was-a-fraction-of-ike-or-harveys-impact/
[47] https://www.houstonpublicmedia.org/articles/news/hurricane/2024/08/13/496407/beryl-cost-houston-billions-but-was-a-fraction-of-ike-or-harveys-impact/

Figure MA-23
Costs of lost faith in the infrastructure reduced by the SRP

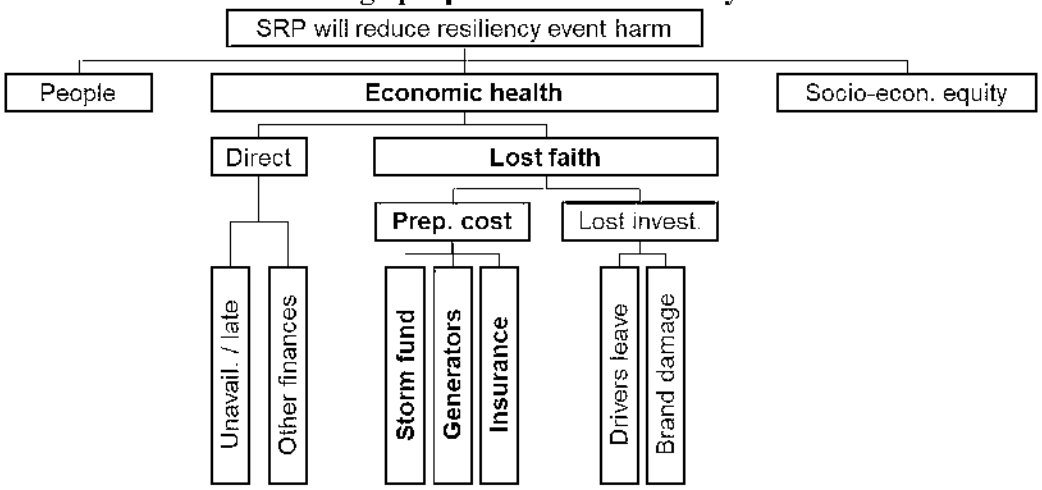


In the Houston area, businesses incur higher costs to protect themselves from outage related losses. Lower regional investment can occur due to economic drivers shifting out of the area along with regional brand damage depressing investment coming to the area. All of these things combined can result in higher prices, less jobs, and lower growth for both GDP and population.

Q. HOW WILL THE SYSTEM RESILIENCY PLAN REDUCE THE COSTS ASSOCIATED WITH A BUSINESS'S NEED TO BE READY FOR AN OUTAGE?

A. By reducing outages, the system resiliency plan will reduce costs associated with resiliency event preparedness for businesses. These costs include maintaining a storm fund, self-assured resiliency, and insurance.

Figure MA-24
Costs of outage preparedness reduced by the SRP

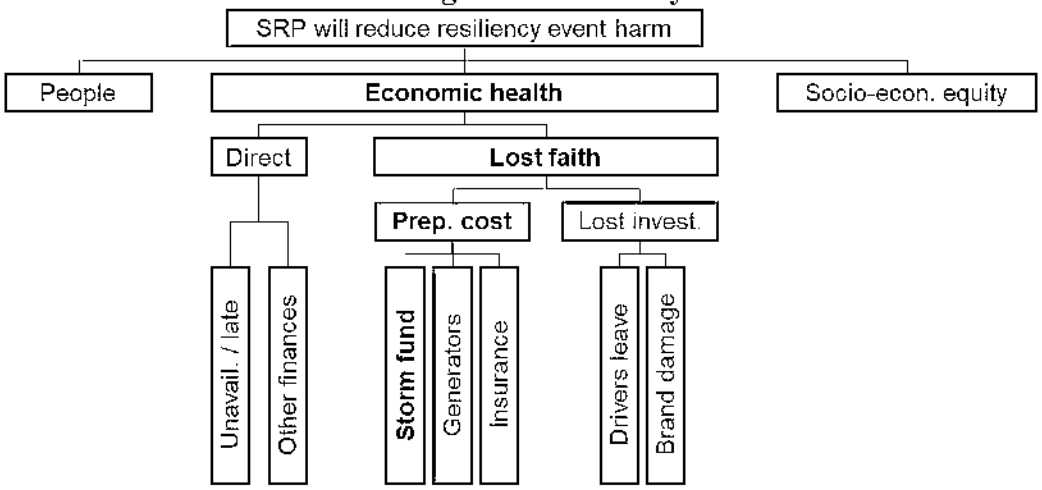


Businesses need to account for potential losses and times during the year that they cannot earn revenue. Businesses may lose perishable items and there are costs that continue even when the business is closed. The result is that businesses need to spend money or forgo investment to prevent harm from a resiliency event. While the system resiliency plan will reduce these costs, it may take time to see the benefits throughout the economic ecosystem as businesses and insurers slowly adjust their expectations.

Q. HOW WILL THE SYSTEM RESILIENCY PLAN REDUCE THE COSTS ASSOCIATED WITH A BUSINESS'S NEED TO HOLD CASH ON HAND?

A. The system resiliency plan will reduce a business's need for emergency cash.

Figure MA-25
Costs of holding cash reduced by the SRP



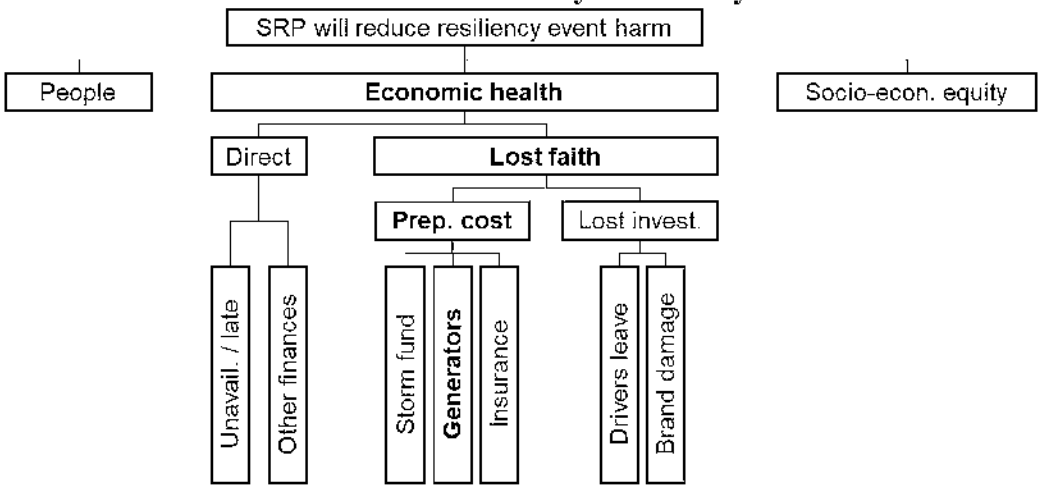
Businesses may incur expenses even if they are not operating and earning revenue. Given how quickly these expenses need to be paid off, it may be that insurance coverage or government relief will not come quickly enough to pay bills on time. Being able to survive a resiliency event may mean a business has to constantly keep cash on hand until a resiliency event occurs.[48] This "storm fund" of cash can mean a small business is unable to invest in growth because they need to hold the cash for a potential event, creating an opportunity cost associated with investments not made. The existence of storm funds also implies that a business has room in their margins to replenish the storm fund after a resiliency event, meaning prices may be higher in the area due to lower resiliency of the grid.

[48] https://www.houstonchronicle.com/food-culture/restaurants-bars/article/houston-restaurants-no-power-19569393.php

Q. HOW WILL THE SYSTEM RESILIENCY PLAN REDUCE THE COSTS ASSOCIATED WITH A BUSINESS'S SELF-ASSURED RESILIENCY?

A. By reducing outages, the system resiliency plan will reduce the need for a business to own and operate a generator to stay open.

Figure MA-26
Costs of self-assured resiliency reduced by the SRP



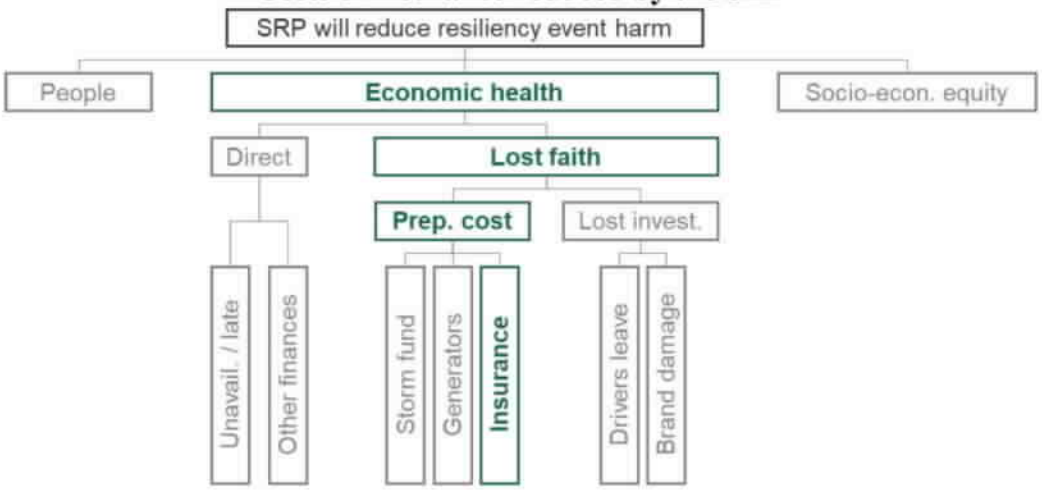
These generators can be expensive, ultimately resulting in higher capital and operating costs, and may not even be available for the space that a business rents. Small businesses with a need for a 10-20 kW generator could spend over $10,000. Larger commercial and industrial generators get even more expensive, with 500+kW generators costing over $300,000.[49] Maintenance and fuel expenses associated with this equipment are ongoing and compound on the upfront costs.

[49] https://www.wpowerproducts.com/blog/backup-power/genset-install-commercial-buildings/#:~:text=For%20large%20or%20industrial%20businesses,correctly%20determine%20your%20power%20requirements

Q. HOW WILL THE SYSTEM RESILIENCY PLAN REDUCE THE COSTS ASSOCIATED WITH A BUSINESS'S INSURANCE NEEDS?

A. The system resiliency plan will reduce insurance costs by reducing claims made against insurance for perishable inventory and business interruption.

Figure MA-27
Costs of insurance reduced by the SRP



A study by the Lawrence Berkeley National Laboratory found that grid reliability is a substantial source of insurance claims.[50] After winter storm Uri, 5,448 business interruption claims totaling $310M were made in Texas.[51] These increased claims due to power outages can cause insurance premiums to increase, or even for insurance companies to pull out of geographies entirely as was the case in California and Florida.[52,53,54] One Houston restaurant saw an 8.6% increase in insurance premiums from 2023 to 2024 and expects another increase after having

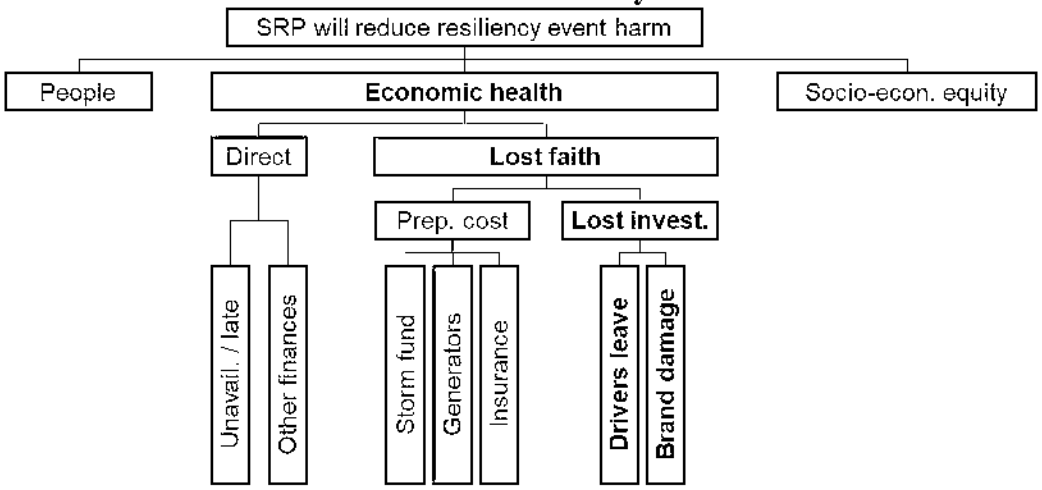
[50] https://www.researchgate.net/publication/304340187_An_Insurance_Perspective_on_US_Electric_Grid_Disruption_Costs
[51] https://www.insurancejournal.com/news/southcentral/2021/09/24/633569.htm
[52] https://www.usatoday.com/story/money/personalfinance/2023/07/19/florida-home-insurance-aaa-farmers-policy-reduction/70427062007/
[53] https://www.cnn.com/2024/10/11/business/citizens-insurance-hurricane-milton/index.html
[54] https://www.fox26houston.com/news/california-insurance-crisis-list-carriers-have-fled-reduced-coverage-state

to make two major claims on their inventory loss insurance and business interruption insurance due to the May Derecho and Hurricane Beryl.[55] Nationally, business interruption insurance is already expensive for small businesses, typically costing between $500 and $1800 per year.[56,57]

Q. HOW WILL THE SYSTEM RESILIENCY PLAN REDUCE LOST REGIONAL INVESTMENT?

A. The system resiliency plan will reduce lost regional investment by reducing incentives for economic drivers to leave the area and reducing regional brand damage.

Figure MA-28
Lost investment reduced by the SRP



Reducing outages can reduce incentives for people and businesses leaving as well as reduce customer churn for Houston businesses. Reducing outages can also reduce regional brand damage, potentially resulting in higher growth. While outages may not be the only cause for these harms to the regional economic health,

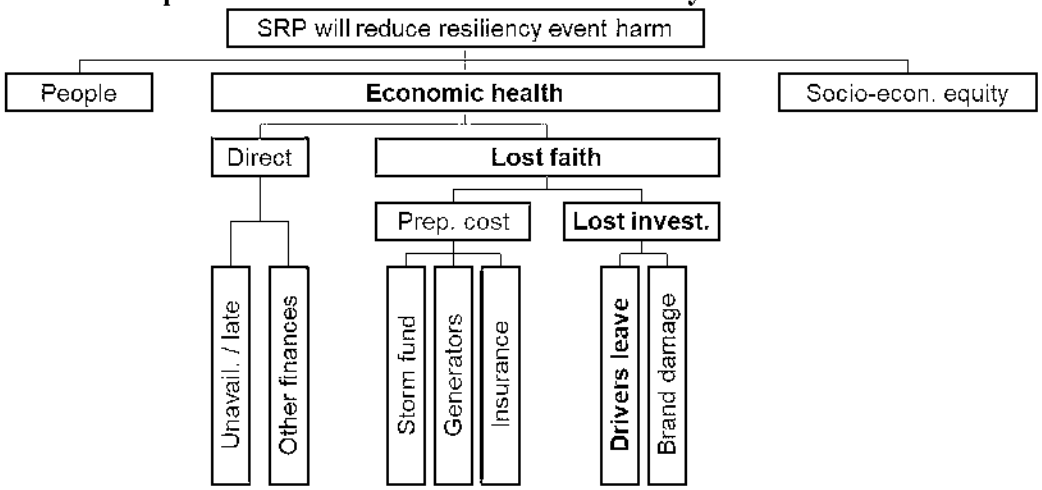
[55] https://www.texasmonthly.com/bbq/hurricane-beryl-houston-restaurants/
[56] https://www.embroker.com/coverage/business-interruption-insurance/
[57] https://www.forbes.com/advisor/business-insurance/business-interruption-insurance/

they can be an aggravating factor.

Q. HOW WILL THE SYSTEM RESILIENCY PLAN REDUCE ECONOMIC DRIVERS LEAVING THE AREA?

A. The system resiliency plan will reduce the incentives to leave for people and businesses as well as customer churn for Houston based businesses. In this way, the plan reduces the risk of outages pulling the region's economy backwards and resulting in lost jobs.

Figure MA-29
Departure of economic drivers reduced by the SRP



People and businesses can get fed up with their lives and business being disrupted by outages. In a fall of 2024 survey of Houston residents, 48% responded that they have considered moving and 36% responded that electric reliability was a top three concern for the area.[58] The loss of a single professional services office would represent about a $2M loss to regional GDP and ten jobs displaced.

The system resiliency plan will also reduce the potential for supply chains to shift away from the Houston area, which would result in lost business that can

[58] https://www.houstonpublicmedia.org/articles/news/houston/2024/11/14/506137/houston-move-away-weather-hurricanes-2024-survey/

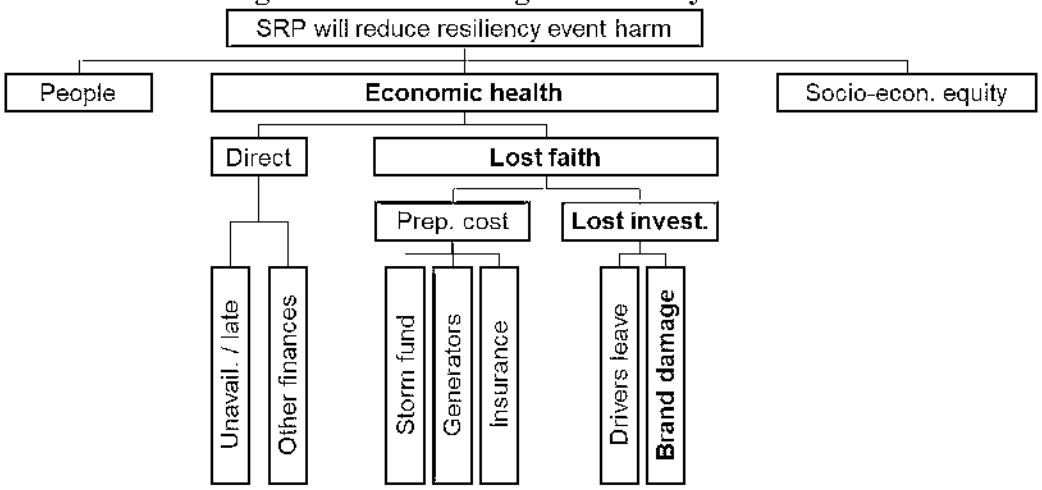
be difficult to win back. Outages resulting in delayed shipments to customers can act as an aggravating factor for losing business. A study co-authored from the University of Houston found that large delays in delivery times for business-to-business transactions are associated with lower transaction quantities, lower unit prices, and even changes to suppliers. This holds especially true for industrial customers who are buying from raw material vendors, like chemicals manufacturers.[59] If the supply chain does shift, it can be difficult to win the business back. Another study showed that relationships are the strongest determinant of switching suppliers in industrial markets – meaning incumbent suppliers have an advantage and Houston suppliers would have to significantly outcompete the incumbent to win.[60,61,62]

Q. HOW WILL THE SYSTEM RESILIENCY PLAN REDUCE BRAND DAMAGE TO THE REGION?

A. The system resiliency plan will reduce brand damage to the region by improving the resiliency event performance and reducing negative press about outages.

[59] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2892733
[60] https://www.emerald.com/insight/content/doi/10.1108/09564230610656980/full/html
[61] https://www.ccsenet.org/journal/index.php/ijms/article/view/0/37521
[62] https://www.sciencedirect.com/science/article/abs/pii/S0019850111002318

Figure MA-30
Regional brand damage reduced by the SRP



A non-resilient electric grid can be an aggravating factor in falling out of a business's site selection process, potentially driving new business away from the Houston area. This holds especially true for businesses that have high power reliability needs and are currently looking at sites for new investment, such as data centers and hydrogen production facilities. These facilities represent $200+M and $1+B potential investments per facility, respectfully. With a recent uptick in resiliency event frequency, performance has suffered. When including major event days, the Houston area has experienced about twice the national average of outage minutes over the past four years.[63] Improving the system resiliency with this plan can make it easier to attract these businesses to Texas.

The perception of a non-resilient grid can be an aggravating factor in a decision to move to a new location, and people moving into the Houston area has been an important part of the growth in the region. About 27% of Texans were born

[63] https://www.eia.gov/electricity/annual/html/epa_11_01.html

in another state.[64] The press and social media can be important contributors to how people perceive an area, and there has been a lot of negative press over the past year about Houston's electric resiliency. Tens of thousands of articles have been written about Houston's power outages in the past year, including several across influential national and international publications.[65] On X, "CenterPoint" was a trending topic in the US in the days following Hurricane Beryl as people discussed the outages.[66]

F. NON-BILL BENEFITS FOR REGIONAL SOCIO-ECONOMIC EQUITY

Q. WHAT ARE THE ADDITIONAL BENEFITS FOR SOCIO-ECONOMIC EQUITY IN THE GREATER HOUSTON AREA THAT SHOULD BE CONSIDERED?

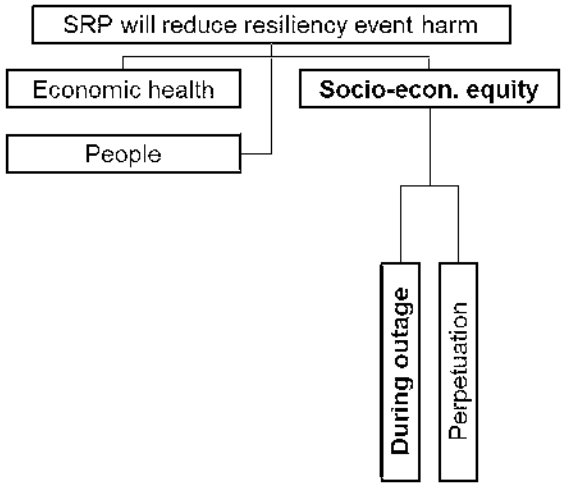
A. The system resiliency plan will help reduce harm of resiliency events on the socio-economic equity of the greater Houston area. The plan will reduce inequitable outcomes during the resiliency event as well as reduce the perpetuation of inequitable outcomes.

Q. HOW WILL THE SYSTEM RESILIENCY PLAN HELP MITIGATE AGAINST SOCIO-ECONOMIC INEQUITIES DURING THE POWER OUTAGE?

A. Outages have outsized impacts on low-income households, creating socio-economic inequities.

[64] Where were most adults in Texas actually born?
[65] https://www.google.com/search?q=houston+power+outage&sca_esv=8d59bb44a0c9f69d&rlz=1C1GCEB_enUS1044US1044&tbs=cdr:1,cd_min:1/1/2024,cd_max:12/31/2024&tbm=nws&sxsrf=ADLYWILi8mdigfP1JPp2FXcF3bLXKypicA:1737043626941&ei=qi6JZ72WOcOH2roPtcG_kQM&start=0&sa=N&ved=2ahUKEwi9k9_iz_qKAxXDg1YBHbXwLzI4UBDy0wN6BAgEEAQ&biw=1422&bih=772&dpr=1.1
[66] https://getdaytrends.com/united-states/2024-07-09/13/

Figure MA-31
Socio economic inequities reduced by the SRP



There are inequities in absorbing the costs of an outage, living a relatively unchanged lifestyle during the resiliency event, and losing income. Given the outsized impacts of outages on low-income households, there is outsized value from avoided outages generated by the system resiliency plan.

Low-income households fundamentally have less resources to deal with outages. According to a 2024 survey by Kinder, 46% of respondents in the Houston area said they do not have an extra $400 readily available for unexpected expenses.[67] Nationally, households above the median income have approximately $15,800 or more in their bank accounts.[68] This means that the ability to absorb the impact of all the potential costs outlined earlier in this testimony is significantly less for low-income households.

[67] https://kinder.rice.edu/research/kinder-houston-area-survey-2024-results
[68] https://www.federalreserve.gov/econres/scf/dataviz/scf/chart/#series:Transaction_Accounts;demographic:inccat;population:all;units:median

Higher income households also have an advantage in being able to use their resources to live a relatively unimpacted lifestyle during the event. Higher income households are more able to own generators, quickly replace spoiled food or go out to eat, spontaneously pay for a hotel room, or leave Houston. Generators allow people to live relatively normally during outages by keeping the AC on and the refrigerator running. However, generators are especially out of reach for most low-income households, costing about $7,500 for a 9kW generator.[69] For food, while higher income households may use their resources to be unimpacted by lost food, low-income households sometimes need assistance from public institutions to eat even under normal operating conditions. This public assistance lifeline may be unavailable when these public institutions are closed or overburdened during an outage. As an example, 780,000 children in Houston rely on schools for their only meals, and schools are closed if they're experiencing an outage.[70,71] Hotels can offer amenities not available to homes experiencing an outage, like a cool room to sleep in and internet, but can easily cost over $100 per night. Leaving the area to avoid living through the outages all together is more challenging for low-income households than it is for higher income households given the costs of travel.

Outage related lost wages due to both workplace closures and an inability to get to work also has inequitable impacts on low-income households. About 1.9M Houston area workers are paid on an hourly basis, meaning they are more susceptible to being unable to earn during an outage related business closure than a

[69] https://www.homedepot.com/services/c/cost-install-generators/cfeeee25c

[70] https://www.houstonfoodbank.org/wp-content/uploads/2021/08/factsheet_childPrograms_FY21_20210830.pdf

[71] https://www.houston.org/living-in-houston/education

salaried employee.[72,73] An estimated 88% of hourly workers earn less than the average wage in the Houston metro area.[74]

Members of low-income households may struggle more than higher income households to get to work during outage events, as 58% of Houston METRO users primarily use the transit services to get to work and an outsized portion of Houston METRO users live in poverty.[75] 33% of Houston's transit riders live in impoverished households while 13.9% of Houstonians are below the poverty line, indicating a higher potential for day-to-day disruption for the impoverished members of the region.[76,77] After Hurricane Beryl, the Houston METRO light rail system was inoperable for one week following Hurricane Beryl, impacting approximately 42,000 riders a day who use the Houston METRO light rail service on weekdays.[78,79]

Q. HOW WILL THE SYSTEM RESILIENCY PLAN HELP MITIGATE AGAINST SOCIO-ECONOMIC INEQUITIES BEING PERPETUATED?

A. The system resiliency plan will mitigate against perpetuated socio-economic inequities by reducing the outage experience gap between high and low-income households.

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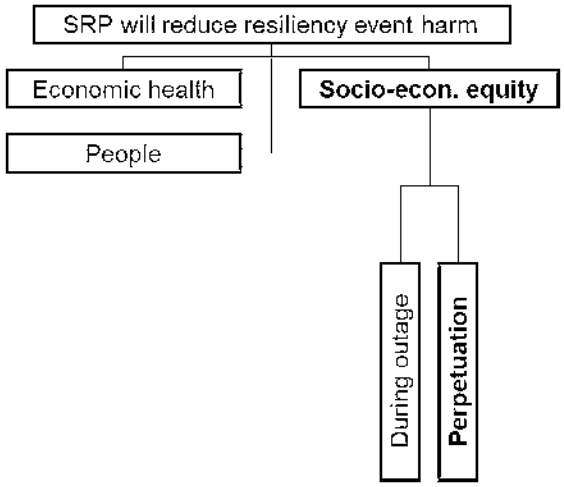
[72] https://www.houston.org/houston-data/economy-glance-july-2024
[73] https://www.bls.gov/opub/reports/minimum-wage/2023/
[74] https://www.bls.gov/regions/southwest/news-release/occupationalemploymentandwages_houston.htm#:~:text=Workers%20in%20the%20Houston%2DThe,United%20States
[75] https://www.houstonpublicmedia.org/articles/news/transportation/2018/06/20/292029/a-new-study-looks-at-whos-using-public-transit-in-the-houston-area
[76] https://linkhouston.org/wp-content/uploads/2018/11/LINKHouston_EquityinTransit2018_Report.pdf
[77] https://censusreporter.org/profiles/31000US26420-houston-pasadena-the-woodlands-tx-metro-area/
[78] https://www.apta.com/wp-content/uploads/2024-Q3-Ridership-APTA.pdf
[79] https://content.govdelivery.com/accounts/TXMETRO/bulletins/3a8c476

Figure MA-32
Socio economic inequity perpetuation reduced by the SRP



By reducing outage minutes for the Houston area, the system resiliency plan reduces incentives for high income households to buy generators. Additional generators perpetuate inequitable outcomes during future resiliency events, as these generators are not attainable for low-income households and prevents disruption for those who can afford it. Following Hurricane Beryl, interest in generators shot up, indicating a potential step change in adoption. Google searches for the term "generator" in Houston the week following Hurricane Beryl shot up 600%.[80]

The system resiliency plan will reduce harm to graduation rates. Missed school days for extended periods, like those observed during Hurricane Beryl, can negatively impact graduation rates by 16%.[81] Children in low-income families are already less likely to graduate on time than their higher income peers.[82] Since people without high school diplomas have lower lifetime earnings potential, the

[80] https://trends.google.com/trends/explore?date=2024-07-01%202024-07-14&geo=618&q=generator
[81] https://www.oregon.gov/odc/reports-and-data/researchbriefs/Documents/Internal/school-attendance-absenteeism-and-student-success-final.pdf
[82] https://nces.ed.gov/programs/coe/indicator/coi/high-school-graduation-rates

increased chance of not graduating caused by outages can perpetuate income inequity.[83]

Q. WHAT ARE THE ADDITIONAL BENEFITS CREATED BY THE DIRECT INVESTMENT OF THE SYSTEM RESILIENCY?

A. The system resiliency plan will help bring economic growth to the region due to direct spending. Jobs will be created in new manufacturing facilities and for equipment installation. Indirectly, jobs will be created in supporting industries like restaurants and construction to feed and house these new workers. Approximately 20,000 one-time and 1,100 ongoing jobs will be created either directly or indirectly due to the system resiliency plan. Additionally, the economic activity generated from the plan will help support public services budgets such as police departments, schools, and roads.

VI. CONCLUSION

Q. IS IMPLEMENTATION OF THE RESILIENCY MEASURES IN THE COMPANY'S RESILIENCY PLAN IN THE PUBLIC INTEREST?

A. Yes.

Q. SHOULD THE COMMISSION APPROVE THE COMPANY'S RESILIENCY PLAN?

A. Yes.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

[83] Median weekly earnings $721 for workers without high school diploma, $1,864 for advanced degree : The Economics Daily: U.S. Bureau of Labor Statistics

STATE OF Texas §
§
COUNTY OF Harris §

AFFIDAVIT OF MUSSADIQ AKRAM ARAIN

BEFORE ME, the undersigned authority, on this day personally appeared MUSSADIQ AKRAM ARAIN who having been placed under oath by me did depose as follows:

1. "My name is MUSSADIQ AKRAM ARAIN. I am of sound mind and capable of making this affidavit. The facts stated herein are true and correct based upon my personal knowledge.

2. I have prepared the foregoing Direct Testimony and the information contained in this document is true and correct to the best of my knowledge."

Further affiant sayeth not.

M. Akram

MUSSADIQ AKRAM ARAIN

SUBSCRIBED AND SWORN TO BEFORE ME on this 8th day of January, 2025.

Petra Custer

Notary Public in and for the State of Texas

My commission expires: 3/16/2025

PETRA CUSTER
NOTARY ID #12683270-2
My Commission Expires
March 16, 2025

Exhibit MA-1: Glossary of Acronyms

2026-2028 T&D SRP or SRP	The Company's 2026-2028 Transmission and Distribution System Resiliency Plan
AC	Air Conditioning
BCA	Benefit Cost Analysis
Company	CenterPoint Energy Houston Electric, LLC
CMI	Customer Minutes of Interruption
CNP	CenterPoint Energy, Inc.
Commission or PUCT	Public Utility Commission of Texas
CPI	Consumer Price Index
EMT	Emergency Medical Technician
ERCOT	Electric Reliability Council of Texas
FDA	Food and Drug Administration
FPL	Florida Power and Light
GDP	Gross Domestic Product
Guidehouse	Guidehouse Inc.
KW	Kilowatt
kWh	Kilowatt hour
METRO	Metropolitan Transit Authority of Harris County
Resiliency Event	An event involving extreme weather conditions, wildfires, cybersecurity threats, or physical security threats that poses a material risk to the safe and reliable operation of the Company's transmission and distribution systems
Resiliency Measure	A measure designed to prevent, withstand, mitigate, or more promptly recover from the risks posed to the Company's transmission and distribution system by a Resiliency Event
T&D	Transmission and Distribution

UTMB	University of Texas Medical Branch
VOLL	Value of Loss Load

TEXAS VOTES 2024

Harris County

Hobby School of Public Affairs
UNIVERSITY OF HOUSTON

Hobby School of Public Affairs
UNIVERSITY OF HOUSTON

Texas Votes 2024
Harris County
October 2024

The Hobby School of Public Affairs at the University of Houston conducted an online survey of likely Texas voters, with an oversample of Harris County voters, to assess their preferences and opinions about candidates and issues in the November 2024 election. The survey was fielded between September 26 and October 10, 2024, in English and Spanish, via a YouGov panel of registered voters who were considered likely to vote in the 2024 General Election. The likely voters were selected using a series of questions related to past and expected future voting behavior. The statewide analysis population of 1,329, with a margin of error of +/- 2.69%, was matched to a sampling frame on gender, age, race/ethnicity, education, and partisanship, and is representative of the Texas likely voter population. The same process was followed for the analysis population of 491 Harris County likely voters, contained within this larger statewide population, which was utilized for all of the analysis contained in this report, with this population representative of the 2024 Harris County likely voter population. The margin of error for this report's Harris County population of 491 likely voters is +/- 4.42%. With a population of more than 4.8 million, Harris County is the third most populous county in the United States, with more residents than 26 states.

The Texas Votes 2024 study includes four reports. This first report focused on the statewide races for president, U.S. Senate and the Texas Railroad Commission, along with issues influencing vote intention, and candidate favorability. This report focuses on county-wide non-judicial elections and candidates in Harris County along with policy issues affecting Harris County that are of concern to voters. Forthcoming reports will cover election integrity and administration statewide and attitudes about electricity infrastructure and distribution in Harris County.

EXECUTIVE SUMMARY

In the 2024 Harris County Sheriff election, Democrat Ed Gonzalez (53%) leads Republican Mike Knox (37%) by a 16 percentage point margin, with 10% undecided.

In the 2024 Harris County District Attorney election, Democrat Sean Teare (52%) leads Republican Dan Simons (38%) by a 14 percentage point margin, with 10% undecided.

In the 2024 Harris County Tax Assessor-Collector election, Democrat Annette Ramirez (50%) leads Republican Steve Radack (38%) by a 12 percentage point margin, with 12% undecided.

In the 2024 County Attorney election in Harris County, Democrat Christian Menefee (48%) leads Republican Jacqueline Lucci Smith (37%) by an 11 percentage point margin, with 15% undecided.

An absolute majority of Harris County likely voters do not know enough about Simons (56%), Lucci Smith (56%), Knox (52%), Ramirez (52%) or Menefee (51%) to have an opinion of them.

More than two-fifths of Harris County likely voters do not know enough about Radack (42%) and Teare (42%) to have an opinion of them.

Distinct from the other seven candidates, only one-fourth (26%) of Harris County likely voters do not know enough about Gonzalez to have an opinion of him, with 74% having either a favorable (46%) or unfavorable (28%) opinion of the incumbent sheriff.

The four Democratic candidates are effectively tied with their Republican rival in regard to vote intention among men, but hold an advantage among women of between 20 and 27 percentage points.

The four Democratic candidates are effectively tied with their Republican rival in regard to vote intention among white and Latino likely voters, but hold an advantage among Black likely voters of between 39 and 51 percentage points.

Among Harris County likely voters, in the 2024 presidential race Democrat Kamala Harris (54%) leads Republican Donald Trump (41%) by a 13 percentage point margin, with 2% supporting third party candidates and 3% undecided.

Among Harris County likely voters, in the 2024 Texas U.S. Senate race Democrat Colin Allred (52%) leads Republican Ted Cruz (39%) by a 13 percentage point margin, with 2% supporting Libertarian Ted Brown and 7% undecided.

51% of Harris County likely voters intend to vote for the Harris County Flood Control District's Proposition A, while 30% intend to vote against the proposition, with 19% undecided.

The four policy issues cited by Harris County likely voters as being the issue affecting Harris County about which they are most concerned are crime (16%), rising property taxes (16%), electricity service reliability (12%) and housing affordability (11%).

The eight issues cited by Harris County likely voters as being among the top three issues affecting Harris County about which they are most concerned are electricity service reliability (36%), rising property taxes (33%), housing affordability (32%), flooding (30%), condition of roads & streets (26%), crime (23%), public school quality (23%) and traffic congestion (21%).

HARRIS COUNTY LIKELY VOTER POPULATION DEMOGRAPHICS

White likely voters account for 45% of this population of Harris County likely voters, Latino likely voters for 28%, Black likely voters for 21%, and others for 6%. Women represent 52% of this population, men 47%, and those who identify as non-binary or other 1%. Regarding generations, 33% of this population belongs to the combined Silent Generation (born between 1928-1945) and Baby Boomer (1946-1964) cohort, 23% to Generation X (Gen-X) (1965-1980), 28% to the Millennial (1981-1996) generation, and 16% to Generation Z (1997-2012). The highest level of educational attainment of 42% of the population is a four-year college degree or a post-graduate degree, of 31% of the population is a two-year college degree or some college, and of 27% of the population is a high school degree or less. Democrats account for 51% of this population, Republicans for 37% and Independents for 11%, with 1% unsure of their partisan identification. In the 2020 presidential election, among those who cast a ballot that year

(16% did not), 55% of these likely voters voted for Democrat Joe Biden and 43% for Donald Trump, with 2% supporting a third party candidate. In the 2022 Texas gubernatorial election, among those who cast a ballot (22% did not), 55% voted for Democrat Beto O'Rourke and 44% for Republican Greg Abbott, with 1% supporting a third party candidate.

FAVORABLE & UNFAVORABLE EVALUATIONS OF EIGHT 2024 HARRIS COUNTY CANDIDATES

These Harris County likely voters were asked if they had a favorable (very or somewhat) or unfavorable (very or somewhat) opinion of the eight non-judicial 2024 Harris County county-wide candidates: District Attorney candidates Sean Teare (Democrat) and Dan Simons (Republican), County Sheriff candidates Ed Gonzalez (Democrat) and Mike Knox (Republican), Tax Assessor-Collector candidates Annette Ramirez (Democrat) and Steve Radack (Republican), and County Attorney candidates Christian Menefee (Democrat) and Jacqueline Lucci Smith (Republican). The respondents also had the option of responding that they did not know enough about the candidate to have an opinion about them.

Table 1 reveals that the two candidates with the highest proportion of likely voters with a very favorable opinion of them are Gonzalez (19%) and Teare (15%), who also, though, happen to be the two candidates with the largest proportion of likely voters with a very unfavorable opinion of them (13% and 10%), along with Radack (10%).

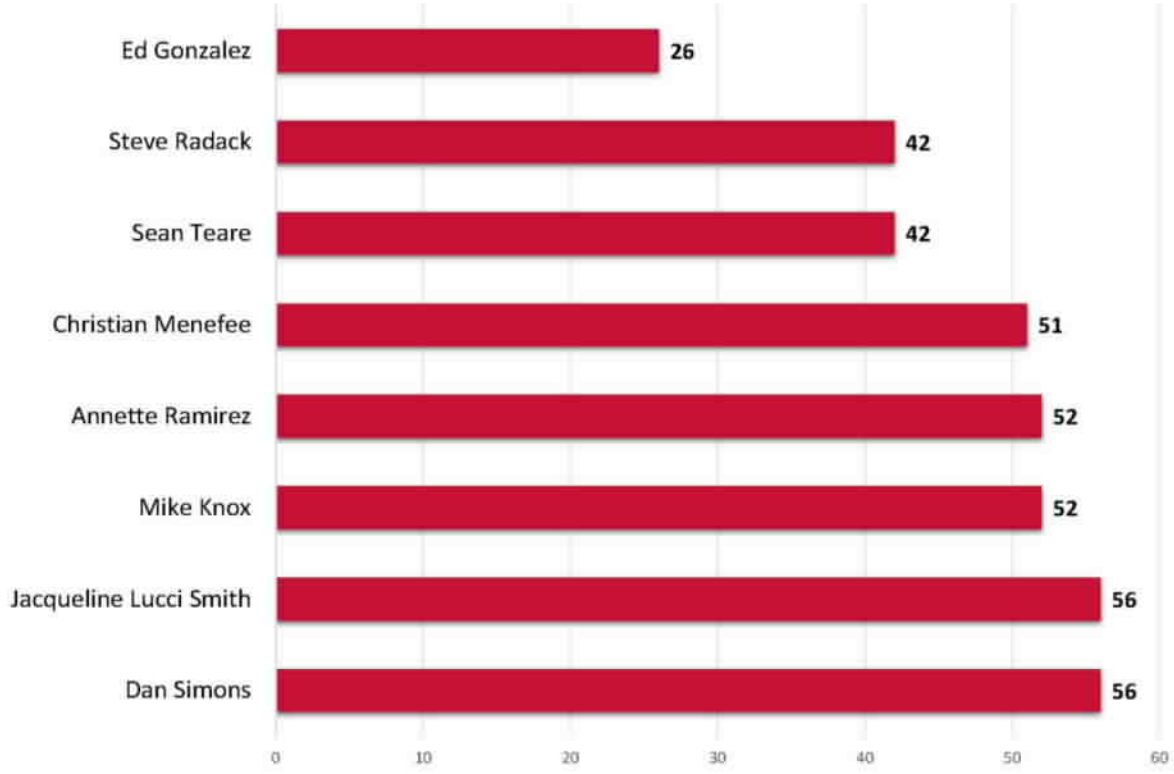
Table 1. Favorable and Unfavorable Evaluations of Eight Harris County Candidates (%)

Candidate	Very Favorable	Somewhat Favorable	Somewhat Unfavorable	Very Unfavorable	Don't Know Enough About
Ed Gonzalez	19	27	15	13	26
Sean Teare	15	20	13	10	42
Annette Ramirez	13	20	9	6	52
Christian Menefee	13	20	10	6	51
Mike Knox	12	19	9	8	52
Steve Radack	11	26	11	10	42
Dan Simons	9	19	9	7	56
Jacqueline Lucci Smith	8	20	10	6	56

Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

Table 1 also underscores the very large proportion of Harris County likely voters who, approximately four weeks prior to election day and two weeks prior to the start of early voting, still did not know enough about the candidates to have an opinion of them, favorable or unfavorable. Figure 1 highlights the reality of the limited knowledge likely voters have about most of these candidates, with more than one-half of likely voters not knowing enough about Simons (56%), Lucci Smith (56%), Knox (52%), Ramirez (52%) and Menefee (51%) to have an opinion about them, with more than two-fifths not knowing enough about Radack (42%) or Teare (42%) to have an opinion of them. Gonzalez, the Democratic candidate for county sheriff, is the only candidate who is a known quantity for more than two-thirds of Harris County likely voters, with only 26% not knowing enough about him to have an opinion.

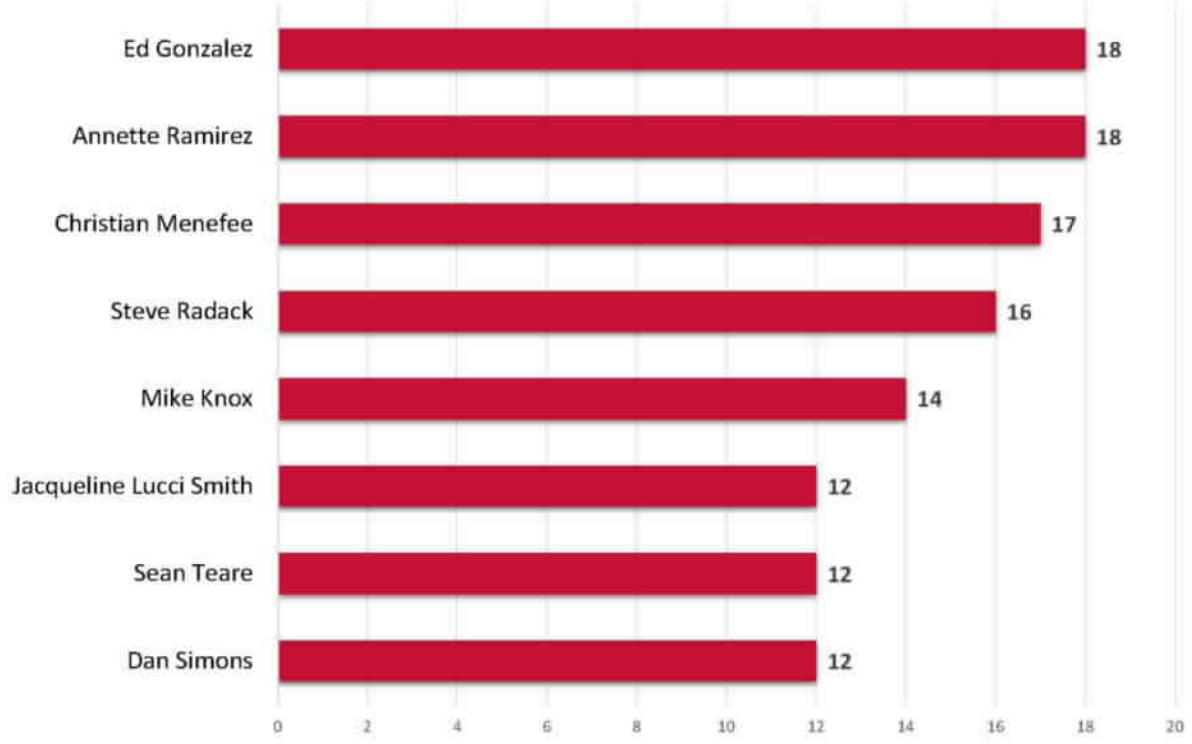
Figure 1. Proportion of Harris County Likely Voters Who Do Not Know Enough About the Harris County Candidates to Have an Opinion About Them (%)



Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

Figure 2 provides the net favorability rating for these eight candidates (the proportion with a favorable opinion minus the proportion with an unfavorable opinion). The net favorability ratings are all positive, indicating that once likely voters know something about these candidates, they are more likely to have a favorable rather than an unfavorable opinion of them. The net favorability ratings are also narrowly bounded, underscoring substantively little difference among the candidates, with values that range from a high of 18% (Gonzalez and Ramirez) to a low of 12% (Lucci Smith, Teare, Simons).

Figure 2. Net Favorability (% Favorable - % Unfavorable) Rating of Harris County Candidates (%)



Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

Table 2 provides the proportion of likely voters who do not know enough about the district attorney (Teare and Simons) and county sheriff (Gonzalez and Knox) candidates to have an opinion of them, broken down by gender, ethnicity/race, generation, educational attainment, and partisan identification.

Table 2. Proportion of Key Socio-Demographic Groups Unfamiliar with DA & Sheriff Candidates (%)

Socio-Demographic	Sub-Group	Teare	Simons	Gonzalez	Knox
Overall		42	56	26	52
Gender	Women	46	62	28	59
	Men	37	49	22	44
Ethnicity/Race	White	38	51	23	46
	Latino	48	56	29	59
	Black	38	61	29	55
Generation	Silent/Boomer	47	62	21	56
	Generation X	39	58	21	52
	Millennial	39	48	27	49
	Generation Z	42	54	40	49
Education	High School	47	58	32	58
	Some College/2 Yr Degree	42	59	22	51
	4 Yr Degree/PostGrad	39	52	24	48
Partisanship	Democratic	38	60	25	58
	Independent	49	70	34	59
	Republican	44	45	23	40

Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

Across the board, women are more likely than men to respond that they are not familiar with these four candidates, with the gap the largest for Knox (59% vs. 44%, respectively).

There are not any notable differences in the proportion of likely voters who do not know enough about the four candidates to have an opinion about them related to voter ethnicity/race, generation, or level of educational attainment. There are however two noteworthy partisan differences, with Democrats significantly more likely than Republicans to not know enough about Knox (58% vs. 40%) and Simons (60% v. 45%) to have an opinion about them.

Table 3 provides the proportion of likely voters who do not know enough about the tax assessor-collector (Ramirez and Radack) and county attorney (Menefee and Lucci Smith) candidates to have an opinion of them, broken down by gender, ethnicity/race, generation, educational attainment, and partisan identification.

Table 3. Proportion of Key Socio-Demographic Groups Unfamiliar with Tax Assessor-Collector & County Attorney Candidates (%)

Socio-Demographic	Sub-Group	Ramirez	Radack	Menefee	Lucci Smith
Overall		52	42	51	56
Gender	Women	56	51	57	63
	Men	46	31	44	46
Ethnicity/Race	White	49	33	50	51
	Latino	54	46	51	59
	Black	51	52	47	59
Generation	Silent/Boomer	58	36	52	60
	Generation X	55	47	62	60
	Millennial	45	44	45	51
	Generation Z	46	41	46	48
Education	High School	56	47	58	59
	Some College/2 Yr Degree	55	40	52	56
	4 Yr Degree/PostGrad	47	40	46	53
Partisanship	Democratic	46	47	45	61
	Independent	68	55	60	63
	Republican	54	30	57	45

Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

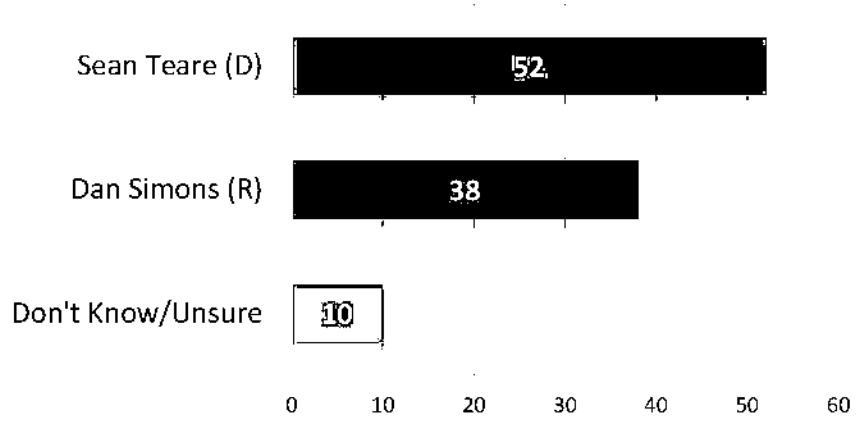
Across the board, women are more likely than men to respond that they are not familiar with these four candidates, with the gap the largest for Radack (51% vs. 31%, respectively).

With one exception, there are not any notable differences in the proportion of likely voters who do not know enough about the four candidates to have an opinion about them related to voter ethnicity/race, generation, or level of educational attainment. The one exception is related to ethnicity/race, with Black likely voters (52%) significantly more likely than white likely voters (33%) to not know enough about Radack to have an opinion of him. There are however also two noteworthy partisan differences, with Democrats significantly more likely than Republicans to not know enough about Radack (47% vs. 30%) and Lucci Smith (61% v. 45%) to have an opinion about them.

VOTE INTENTION IN THE 2024 DA, SHERIFF, TAX ASSESSOR & COUNTY ATTORNEY ELECTIONS

Figure 3 provides the vote intention of Harris County likely voters in the 2024 District Attorney election. Democrat Sean Teare (52%) leads Republican Dan Simons (38%) by a 14 percentage point margin, with 10% undecided.

Figure 3. Vote Intention in the 2024 Harris County District Attorney Election (%)



Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

Table 4 provides the vote intention in the district attorney race broken down by gender, ethnicity/race, generation, educational attainment, partisanship, 2024 presidential vote (Republican Donald Trump and Democrat Kamala Harris), 2024 U.S. Senate vote (Republican Ted Cruz and Democrat Colin Allred), 2024 Texas Railroad Commissioner vote (Republican Christi Craddick, Democrat Katherine Culbert and those who remain unsure), and 2022 Texas gubernatorial vote (Republican Greg Abbott, Democrat Beto O'Rourke, and those who did not vote).

Table 4. Likely Voter District Attorney Election Vote Intention Among Key Socio-Demographic Groups (%)

Socio-Demographic	Sub-Group	Teare	Simons	Don't Know
Overall		52	38	10
Gender	Women	56	31	13
	Men	46	47	7
Ethnicity/Race	White	48	47	5
	Latino	48	43	9
	Black	61	18	21
Generation	Silent/Boomer	46	47	7
	Generation X	51	42	7
	Millennial	55	29	16
	Generation Z	57	30	13
Education	High School	43	45	12
	Some College/2 Yr Degree	53	38	9
	4 Yr Degree/PostGrad	57	34	9
Partisanship	Democratic	86	4	10
	Independent	40	29	31
	Republican	7	89	4
2024 Presidential Vote	Trump	8	86	6
	Harris	85	4	11
2024 US Senate Vote	Cruz	5	90	5
	Allred	89	3	8
2024 Railroad Com. Vote	Craddick	7	91	2
	Culbert	95	3	2
	Don't Know/Unsure	39	15	46
2022 Gubernatorial Vote	Abbott	9	88	3
	O'Rourke	90	5	5
	Did Not Vote	46	28	26

Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

Teare holds a substantial 25 percentage point lead over Simons among women (56% to 31%), while the two candidates are effectively tied among men (46% and 47%), respectively.

Teare holds a substantial 43 percentage point lead over Simons among Black likely voters (61% to 18%), while the two candidates are deadlocked among white (48% and 47%) and Latino (48% and 43%) likely voters. Of note, 21% of Black likely voters remain undecided in this race, compared to 9% of Latino and 5% of white likely voters.

Teare and Simons are relatively even among the older Silent Generation/Baby Boomer (46% and 47%) and Generation X (51% and 42%) cohorts, but Teare enjoys a significant lead among Millennials (55% to 29%) and Generation Z (57% to 30%).

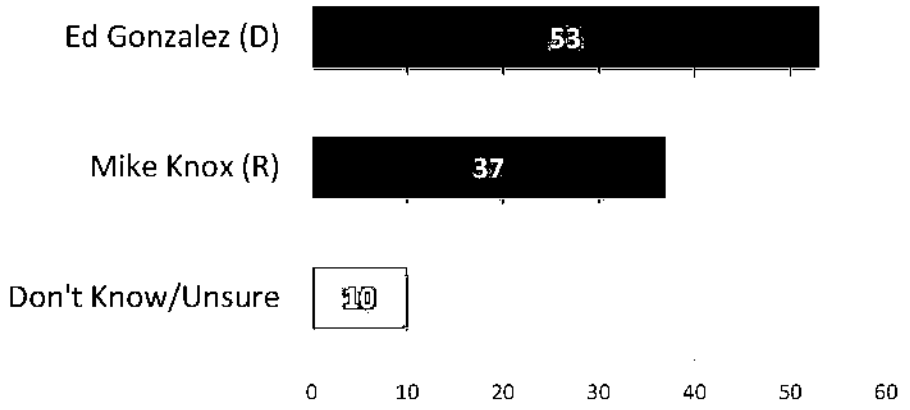
Teare and Simons are effectively tied among likely voters whose highest level of educational attainment is a high school degree or less (43% and 45%), while Teare holds a substantial lead among likely voters whose highest level of educational attainment is two-year degree or some college (53% to 38%) or a four-year or postgraduate degree (57% to 34%).

An overwhelming majority of Democrats intend to vote for Teare (86%), just as an overwhelming majority of Republicans intend to vote for Simons (89%). Teare (40%) enjoys a slight advantage over Simons (29%) among Independents.

Teare is supported by 85% of 2024 Harris voters, 89% of 2024 Allred voters, 95% of 2024 Culbert voters and 90% of 2022 O'Rourke voters. Simons is supported by 86% of 2024 Trump voters, 90% of 2024 Cruz voters, 91% of 2024 Craddick voters and 88% of 2022 Abbott voters. The three highest cross-party voters are 2022 Abbott voters for Teare (9%), 2024 Trump voters for Teare (8%) and 2024 Craddick voters for Teare (7%).

Figure 4 provides the vote intention of Harris County likely voters in the 2024 Harris County Sheriff election. Democrat Ed Gonzalez (53%) leads Republican Mike Knox (37%) by a 16 percentage point margin, with 10% undecided.

Figure 4. Vote Intention in the 2024 Harris County Sheriff Election (%)



Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

Table 5 provides the vote intention in the county sheriff race broken down by gender, ethnicity/race, generation, educational attainment, partisanship, 2024 presidential vote, 2024 U.S. Senate vote, 2024 Texas Railroad Commissioner vote, and 2022 Texas gubernatorial vote.

Table 5. Likely Voter County Sheriff Election Vote Intention Among Key Socio-Demographic Groups (%)

Socio-Demographic	Sub-Group	Gonzalez	Knox	Don't Know
Overall		53	37	10
Gender	Women	57	30	13
	Men	47	44	8
Ethnicity/Race	White	50	44	6
	Latino	47	42	11
	Black	66	15	19
Generation	Silent/Boomer	49	46	5
	Generation X	45	42	13
	Millennial	62	27	11
	Generation Z	55	26	19
Education	High School	44	40	16
	Some College/2 Yr Degree	58	35	7
	4 Yr Degree/PostGrad	55	35	10
Partisanship	Democratic	87	2	11
	Independent	39	38	23
	Republican	10	86	4
2024 Presidential Vote	Trump	9	83	8
	Harris	88	2	10
2024 US Senate Vote	Cruz	6	88	6
	Allred	91	2	7
2024 Railroad Com. Vote	Craddick	8	88	4
	Culbert	95	1	4
	Don't Know/Unsure	39	17	44
2022 Gubernatorial Vote	Abbott	10	89	1
	O'Rourke	90	3	7
	Did Not Vote	51	24	25

Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

Gonzalez holds a substantial 27 percentage point lead over Knox among women (57% to 30%), while the two candidates are effectively tied among men (47% and 44%).

Gonzalez holds a substantial 51 percentage point lead over Knox among Black likely voters (66% to 15%), while the two candidates are nearly even among white (50% and 44%) and Latino (47% and 42%) likely voters. Of note, 19% of Black likely voters remain undecided in this race, compared to 11% of Latino and 6% of white likely voters.

Gonzalez and Knox are relatively even among the older Silent Generation/Baby Boomer (49% and 46%) and Generation X (45% and 42%) cohorts, but Gonzalez enjoys a significant lead among Millennials (62% to 27%) and Generation Z (55% to 26%).

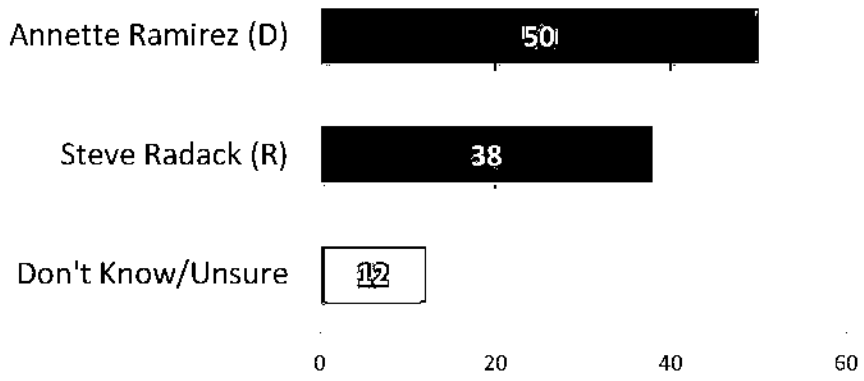
Gonzalez and Knox are near even among likely voters whose highest level of educational attainment is a high school degree or less (44% and 40%), while Gonzalez holds a substantial lead among likely voters whose highest level of educational attainment is two-year degree or some college (58% to 35%) or a four-year or postgraduate degree (55% to 35%).

An overwhelming majority of Democrats intend to vote for Gonzalez (87%), just as an overwhelming majority of Republicans intend to vote for Knox (86%). The two are deadlocked among Independents (39% and 38%, respectively).

Gonzalez is supported by 88% of 2024 Harris voters, 91% of 2024 Allred voters, 95% of 2024 Culbert voters and 90% of 2022 O'Rourke voters. Knox is supported by 83% of 2024 Trump voters, 88% of 2024 Cruz voters, 88% of 2024 Craddick voters and 89% of 2022 Abbott voters. The three highest cross-party voters are 2022 Abbott voters for Gonzalez (10%), 2024 Trump voters for Gonzalez (9%) and 2024 Craddick voters for Gonzalez (8%).

Figure 5 provides the vote intention of Harris County likely voters in the 2024 Harris County Tax Assessor-Collector election. Democrat Annette Ramirez (50%) leads Republican Steve Radack (38%) by a 12 percentage point margin, with 12% undecided.

Figure 5. Vote Intention in the 2024 Harris County Tax Assessor-Collector Election (%)



Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

Table 6 provides the vote intention in the county tax assessor-collector race broken down by gender, ethnicity/race, generation, educational attainment, partisanship, 2024 presidential vote, 2024 U.S. Senate vote, 2024 Texas Railroad Commissioner vote, and 2022 Texas gubernatorial vote.

Table 6. Likely Voter County Tax Assessor-Collector Election Vote Intention Among Key Socio-Demographic Groups (%)

Socio-Demographic	Sub-Group	Ramirez	Radack	Don't Know
Overall		50	38	12
Gender	Women	54	31	15
	Men	46	46	8
Ethnicity/Race	White	45	48	7
	Latino	45	41	14
	Black	66	15	19
Generation	Silent/Boomer	44	50	6
	Generation X	44	45	11
	Millennial	56	29	15
	Generation Z	63	18	19
Education	High School	44	40	16
	Some College/2 Yr Degree	50	39	11
	4 Yr Degree/PostGrad	54	36	10
Partisanship	Democratic	87	3	10
	Independent	28	44	28
	Republican	5	87	8
2024 Presidential Vote	Trump	9	82	9
	Harris	84	5	11
2024 US Senate Vote	Cruz	6	87	7
	Allred	87	6	7
2024 Railroad Com. Vote	Craddick	6	88	6
	Culbert	96	2	2
	Don't Know/Unsure	28	22	50
2022 Gubernatorial Vote	Abbott	7	89	4
	O'Rourke	87	5	8
	Did Not Vote	50	25	25

Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

Ramirez holds a substantial 23 percentage point lead over Radack among women (54% to 31%), while the two candidates are tied among men (46% and 46%).

Ramirez holds a substantial 51 percentage point lead over Radack among Black likely voters (66% to 15%), while the two candidates are nearly even among white (45% and 48%) and Latino (45% and 41%) likely voters. Of note, 19% of Black likely voters remain undecided in this race, compared to 14% of Latino and 7% of white likely voters.

Ramirez and Radack are relatively even among the older Silent Generation/Baby Boomer (44% and 50%) and Generation X (44% and 45%) cohorts, but Ramirez enjoys a significant lead among Millennials (56% to 29%) and Generation Z (63% to 18%).

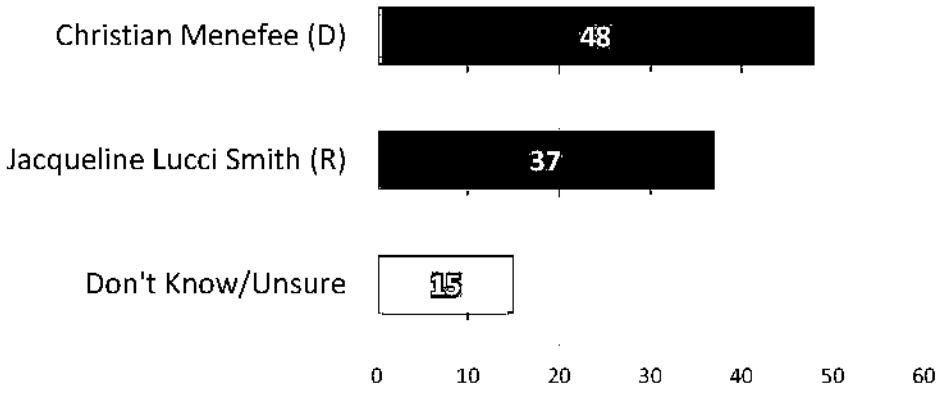
Ramirez and Radack are near even among likely voters whose highest level of educational attainment is a high school degree or less (44% and 40%), while Ramirez holds a more notable lead among likely voters whose highest level of educational attainment is two-year degree or some college (50% to 39%) or a four-year or postgraduate degree (54% to 36%).

An overwhelming majority of Democrats intend to vote for Ramirez (87%), just as an overwhelming majority of Republicans intend to vote for Radack (87%). Radack holds a modest lead over Ramirez among Independents (44% to 28%).

Ramirez is supported by 84% of 2024 Harris voters, 87% of 2024 Allred voters, 96% of 2024 Culbert voters and 87% of 2022 O'Rourke voters. Radack is supported by 82% of 2024 Trump voters, 87% of 2024 Cruz voters, 88% of 2024 Craddick voters and 89% of 2022 Abbott voters. The three highest cross-party voters are 2024 Trump voters for Ramirez (9%), 2022 Abbott voters for Ramirez (7%) and 2024 Craddick and 2024 Cruz voters for Ramirez (6%, 6%).

Figure 6 provides the vote intention of Harris County likely voters in the 2024 County Attorney election. Democrat Christian Menefee (48%) leads Republican Jaqueline Lucci Smith (37%) by an 11 percentage point margin, with 15% undecided.

Figure 6. Vote Intention in the 2024 County Attorney Election in Harris County (%)



Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

Table 7 provides the vote intention in the county attorney race broken down by gender, ethnicity/race, generation, educational attainment, partisanship, 2024 presidential vote, 2024 U.S. Senate vote, 2024 Texas Railroad Commissioner vote, and 2022 Texas gubernatorial vote.

Table 7. Likely Voter County Attorney Election Vote Intention Among Key Socio-Demographic Groups (%)

Socio-Demographic	Sub-Group	Menefee	Lucci Smith	Don't Know
Overall		48	37	15
Gender	Women	50	30	20
	Men	45	45	10
Ethnicity/Race	White	46	44	10
	Latino	43	42	15
	Black	58	19	23
Generation	Silent/Boomer	44	46	10
	Generation X	45	37	18
	Millennial	51	30	19
	Generation Z	56	27	17
Education	High School	44	36	20
	Some College/2 Yr Degree	48	38	14
	4 Yr Degree/PostGrad	51	36	13
Partisanship	Democratic	84	4	12
	Independent	27	34	39
	Republican	4	86	10
2024 Presidential Vote	Trump	6	83	11
	Harris	82	4	14
2024 US Senate Vote	Cruz	5	84	11
	Allred	85	4	11
2024 Railroad Com. Vote	Craddick	5	88	7
	Culbert	95	2	3
	Don't Know/Unsure	22	13	65
2022 Gubernatorial Vote	Abbott	6	88	6
	O'Rourke	87	4	9
	Did Not Vote	44	23	33

Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

Menefee holds a substantial 20 percentage point lead over Lucci Smith among women (50% to 30%), while the two candidates are tied among men (45% and 45%). Twice as many women (20%) as men (10%) remain undecided in this race.

Menefee holds a substantial 39 percentage point lead over Lucci Smith among Black likely voters (58% to 19%), while the two candidates are nearly even among white (46% and 44%) and Latino (43% and 42%) likely voters. Of note, 23% of Black likely voters remain undecided in this race, compared to 15% of Latino and 10% of white likely voters.

Menefee and Lucci Smith are relatively even among the older Silent Generation/Baby Boomer (44% and 46%) and Generation X (45% and 37%) cohorts, but Menefee enjoys a significant lead among Millennials (51% to 30%) and Generation Z (56% to 27%).

Menefee and Lucci Smith are relatively close among likely voters whose highest level of educational attainment is a high school degree or less (44% and 36%) and among likely voters whose highest level of educational attainment is two-year degree or some college (48% and 38%), while Menefee holds a notable lead among likely voters with a four-year or postgraduate degree (51% to 36%).

An overwhelming majority of Democrats intend to vote for Menefee (84%), just as an overwhelming majority of Republicans intend to vote for Lucci Smith (86%). The two are effectively tied among Independents (27% and 34%).

Menefee is supported by 82% of 2024 Harris voters, 85% of 2024 Allred voters, 95% of 2024 Culbert voters and 87% of 2022 O'Rourke voters. Lucci Smith is supported by 83% of 2024 Trump voters, 84% of 2024 Cruz voters, 88% of 2024 Craddick voters and 88% of 2022 Abbott voters. The three highest cross-party voters are 2024 Trump voters and 2022 Abbott voters for Menefee (6%, 6%) and 2024 Craddick and 2024 Cruz voters for Menefee (5%, 5%).

The likely voters were also asked if they were certain about their vote choice for Harris County district attorney, sheriff, tax assessor-collector and county attorney, or, if they might change their mind between now and November 5. Table 8 reveals that between 80% and 89% of these likely voters are certain about their specific vote decisions for the eight candidates in these four Harris County elections, while, depending on the candidate, between 11% and 20% might change their mind between now and election day. Within this narrow nine percentage point range, the candidate with the highest proportion of likely voters who are certain about their vote choice is Republican Mike Knox (89%) in the race for county sheriff while the candidate with the lowest proportion of likely voters who are certain about their vote choice is Democrat Sean Teare (80%) in the race for district attorney.

Table 8. Proportion of Voters Who Are Certain About Harris County Election Vote Choice & Who Might Change Their Mind (%)

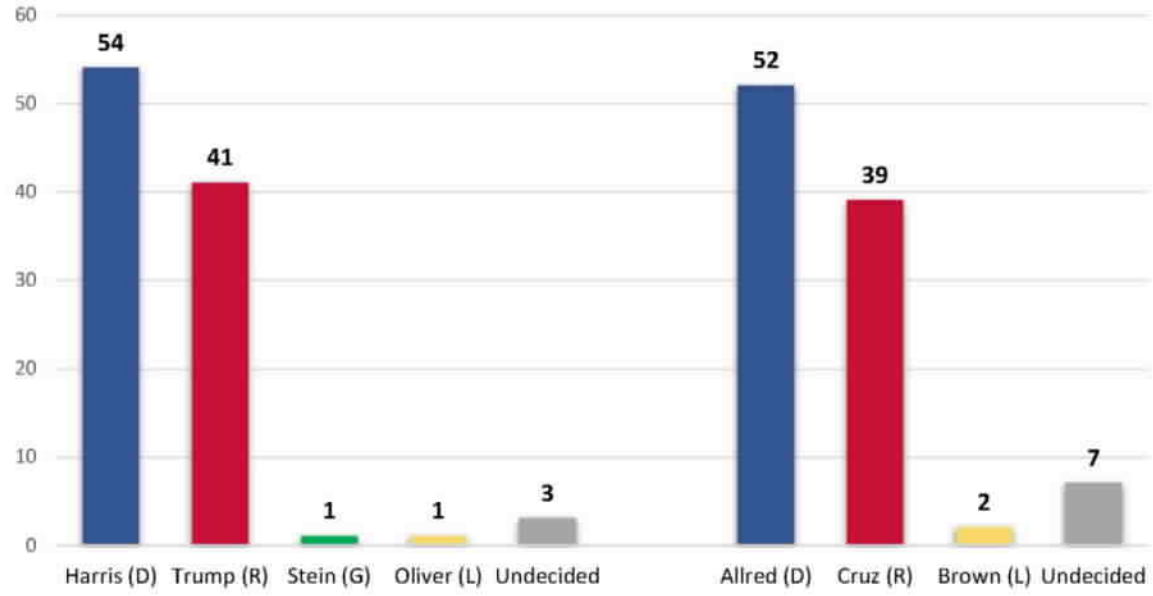
Office	Candidates	Certain About Vote Choice	Might Change Mind
District Attorney	Sean Teare	80	20
	Dan Simons	84	16
Sheriff	Ed Gonzalez	85	15
	Mike Knox	89	11
Tax Assessor-Collector	Annette Ramirez	86	14
	Steve Radack	85	15
County Attorney	Christian Menefee	85	15
	Jacqueline Lucci Smith	85	15

Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

2024 PRESIDENTIAL AND U.S. SENATE VOTE INTENTION AMONG HARRIS COUNTY VOTERS

Figure 7 provides the vote intention of Harris County likely voters in the statewide Texas elections for president and U.S. Senate. In the presidential race, Democrat Kamala Harris (54%) leads Republican Donald Trump (41%) by a 13 percentage point margin, with the Green Party's Jill Stein and Libertarian Chase Oliver with 1% each, and with 3% undecided. In the U.S. Senate race, Democrat Colin Allred (52%) leads Republican Ted Cruz (39%) by a 13 percentage point margin, with 2% intending to vote for Libertarian Ted Brown and 7% undecided.

Figure 7. Vote Intention of Harris County Likely Voters in the 2024 Presidential and U.S. Senate Elections (%)



Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

Table 9 provides the vote intention in the presidential contest broken down by gender, ethnicity/race, generation, educational attainment, partisanship, 2020 presidential vote (Republican Donald Trump, Democrat Joe Biden, and those who did not vote), and 2022 Texas gubernatorial vote.

Table 9. Likely Voter Presidential Vote Intention Among Key Socio-Demographic Groups (%)

Socio-Demographic	Sub-Group	Trump	Harris	Don't Know
Overall		41	54	3
Gender	Women	35	60	3
	Men	49	46	3
Ethnicity/Race	White	49	49	1
	Latino	48	45	4
	Black	20	74	5
Generation	Silent/Boomer	49	48	2
	Generation X	42	51	4
	Millennial	34	60	4
	Generation Z	35	61	4
Education	High School	47	47	5
	Some College/2 Yr Degree	39	56	3
	4 Yr Degree/PostGrad	39	57	2
Partisanship	Democratic	5	91	2
	Independent	47	35	9
	Republican	91	6	2
2020 Presidential Vote	Trump	92	5	3
	Biden	4	90	3
	Did Not Vote	37	58	5
2022 Gubernatorial Vote	Abbott	91	6	2
	O'Rourke	4	92	2
	Did Not Vote	36	55	6

Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

Harris holds a substantial 25 percentage point lead over Trump among women (60% to 35%), while the two candidates are near-even among men (46% and 49%).

Harris holds a substantial 54 percentage point lead over Trump among Black likely voters (74% to 20%), while the two candidates are even or near even among white (49% and 49%) and Latino (45% and 48%) likely voters.

Harris and Trump are relatively close among the older Silent Generation/Baby Boomer (48% and 49%) and Generation X (51% and 42%) cohorts, but Harris enjoys a significant lead among Millennials (60% to 34%) and Generation Z (61% to 35%).

Harris and Trump are tied among likely voters whose highest level of educational attainment is a high school degree or less (47% and 47%), while Harris holds a notable lead among likely voters whose

highest level of educational attainment is two-year degree or some college (56% to 39%) or a four-year or postgraduate degree (57% to 39%).

An overwhelming majority of Democrats intend to vote for Harris (91%), just as an overwhelming majority of Republicans intend to vote for Trump (91%). The two are effectively tied among Independents (35% and 47%, respectively). Among voters who did not cast a ballot in the 2020 presidential election and in the 2022 Texas gubernatorial election, 58% and 55% intend to vote for Harris and 37% and 36% for Trump, respectively.

Table 10 provides the vote intention in the U.S. Senate contest broken down by gender, ethnicity/race, generation, educational attainment, partisanship, 2024 presidential vote, and 2022 Texas gubernatorial vote.

Table 10. Likely Voter Texas U.S. Senate Vote Intention Among Key Socio-Demographic Groups (%)

Socio-Demographic	Sub-Group	Cruz	Allred	Don't Know
Overall		39	52	7
Gender	Women	31	57	10
	Men	49	45	3
Ethnicity/Race	White	46	50	2
	Latino	42	45	10
	Black	22	63	12
Generation	Silent/Boomer	48	47	2
	Generation X	41	47	12
	Millennial	29	59	9
	Generation Z	35	57	6
Education	High School	47	42	8
	Some College/2 Yr Degree	39	51	7
	4 Yr Degree/PostGrad	35	58	6
Partisanship	Democratic	4	88	7
	Independent	41	34	15
	Republican	88	6	4
2024 Presidential Vote	Trump	88	3	7
	Harris	3	91	6
2022 Gubernatorial Vote	Abbott	92	5	3
	O'Rourke	2	93	4
	Did Not Vote	34	48	12

Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

Allred holds a substantial 26 percentage point lead over Cruz among women (57% to 31%), while the two candidates are near-even among men (45% and 49%).

Allred holds a substantial 41 percentage point lead over Cruz among Black likely voters (63% to 22%), while the two candidates are near even among white (50% and 46%) and Latino (45% and 42%) likely voters. Of note, 12% of Black and 10% of Latino likely voters remain undecided in this race, compared to 2% of white likely voters.

Allred and Cruz are relatively close among the older Silent Generation/Baby Boomer (47% and 48%) and Generation X (47% and 41%) cohorts, but Allred enjoys a significant lead among Millennials (59% to 29%) and Generation Z (57% to 35%).

Allred and Cruz are near even among likely voters whose highest level of educational attainment is a high school degree or less (42% and 47%), while Allred holds a notable lead among likely voters whose highest level of educational attainment is two-year degree or some college (51% to 39%) or a four-year or postgraduate degree (58% to 35%).

An overwhelming majority of Democrats intend to vote for Allred (88%), just as an overwhelming majority of Republicans intend to vote for Cruz (88%). The two are effectively tied among Independents (34% and 41%, respectively).

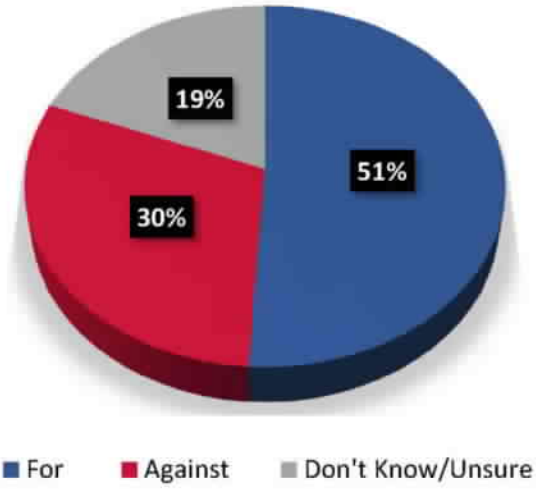
VOTE INTENTION FOR HARRIS COUNTY'S 2024 FLOOD CONTROL PROPOSITION A

Harris County likely voters were asked about Proposition A, which addresses flood mitigation:

> *Are you FOR or AGAINST the proposition that if approved by voters this November would increase the Harris County Flood Control District's property tax rate from $0.03 to $0.05 (2 cents) per $100 of property valuation to fund ongoing and future flood mitigation infrastructure and projects?* The response options were For, Against and Don't Know/Unsure.

Figure 8 highlights that 51% of these likely voters plan to vote for Proposition A while 30% intend to vote against the proposition, with 19% still undecided about how they would vote.

Figure 8. Vote Intention in the 2024 Harris County Flood Control District Proposition A (%)



Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

Table 11 provides the vote intention in for Harris County's 2024 Proposition A broken down by gender, ethnicity/race, generation, educational attainment, partisanship, 2024 presidential vote, 2024 U.S. Senate vote, and 2024 Texas Railroad Commissioner vote.

Table 11. Likely Voter Harris County Proposition A Vote Intention Among Key Socio-Demographic Groups (%)

Socio-Demographic	Sub-Group	For	Against	Don't Know/Unsure
Overall		51	30	19
Gender	Women	47	27	26
	Men	55	32	13
Ethnicity/Race	White	55	30	15
	Latino	47	31	22
	Black	43	28	29
Generation	Silent/Boomer	46	37	17
	Generation X	49	33	18
	Millennial	60	20	20
	Generation Z	50	21	29
Education	High School	33	36	31
	Some College/2 Yr Degree	54	28	18
	4 Yr Degree/PostGrad	60	27	13
Partisanship	Democratic	66	18	16
	Independent	34	28	38
	Republican	34	48	18
2024 Presidential Vote	Trump	30	49	21
	Harris	67	16	17
2024 US Senate Vote	Cruz	31	46	23
	Allred	70	14	16
2024 Railroad Com. Vote	Craddick	36	46	18
	Culbert	68	17	15
	Don't Know/Unsure	40	25	35

Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

There are not any noteworthy gender, ethnic/racial or generational differences in the proportion of people who plan to vote for or against Proposition A. Likely voters whose highest level of educational attainment is a high school degree or less are notably less likely than other voters to intend to vote for the proposition, but this difference is in large part the product of the very large proportion of these likely voters (31%) who are undecided about how they are going to vote.

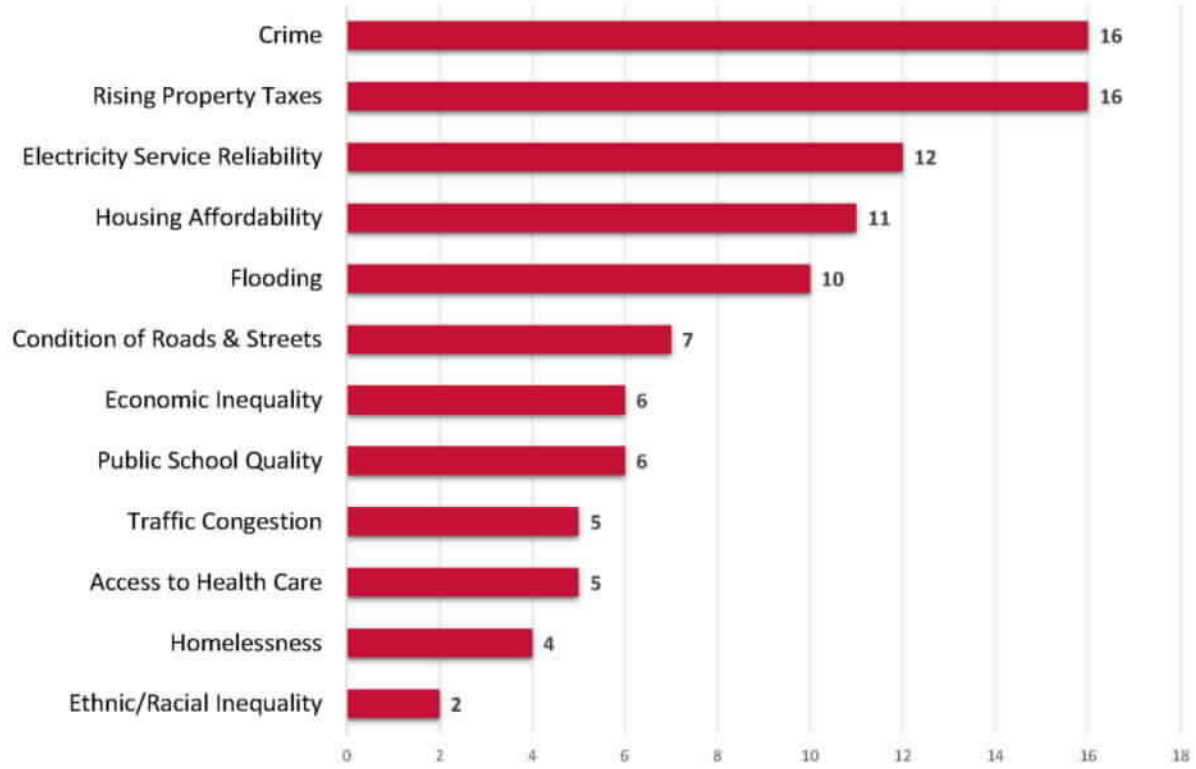
Partisan difference in support for and opposition to Proposition A are however more noteworthy, with 66% of Democrats, but only 34% of Republicans, intending to vote for the proposition, and 48% of Republicans, but only 18% of Democrats, intending to vote against Proposition A. Similar partisan related findings are present in Table 11 in regard to the 2024 presidential, U.S. Senate and Texas Railroad Commissioner vote intention of these likely voters

ISSUES AFFECTING HARRIS COUNTY OF GREATEST CONCERN TO LIKELY VOTERS

The Harris County likely voters were presented with a list of 12 issues affecting Harris County and asked to identify which issue they are most concerned about, second most concerned about, and third most concerned about. The 12 (rotated) issues are as follows: access to health care, condition of roads & streets, crime, economic inequality, electricity service reliability, ethnic/racial inequality, flooding, homelessness, housing affordability, public school quality, rising property taxes, and traffic congestion.

Figure 9 provides the proportion of the likely voters which cited each of the 12 issues as the one issue affecting Harris County that they are most concerned about. The two issues listed by the highest proportion of likely voters are crime (16%) and rising property taxes (16%), with electricity service reliability (12%), housing affordability (11%) and flooding (10%) rounding out the issues in the double digits. Ethnic/racial inequality (2%) and homelessness (4%) are the issues of most concern to the lowest proportion of likely voters, followed closely by access to health care (5%), traffic congestion (5%), public school quality (6%), economic inequality (6%) and the condition of roads & streets (7%).

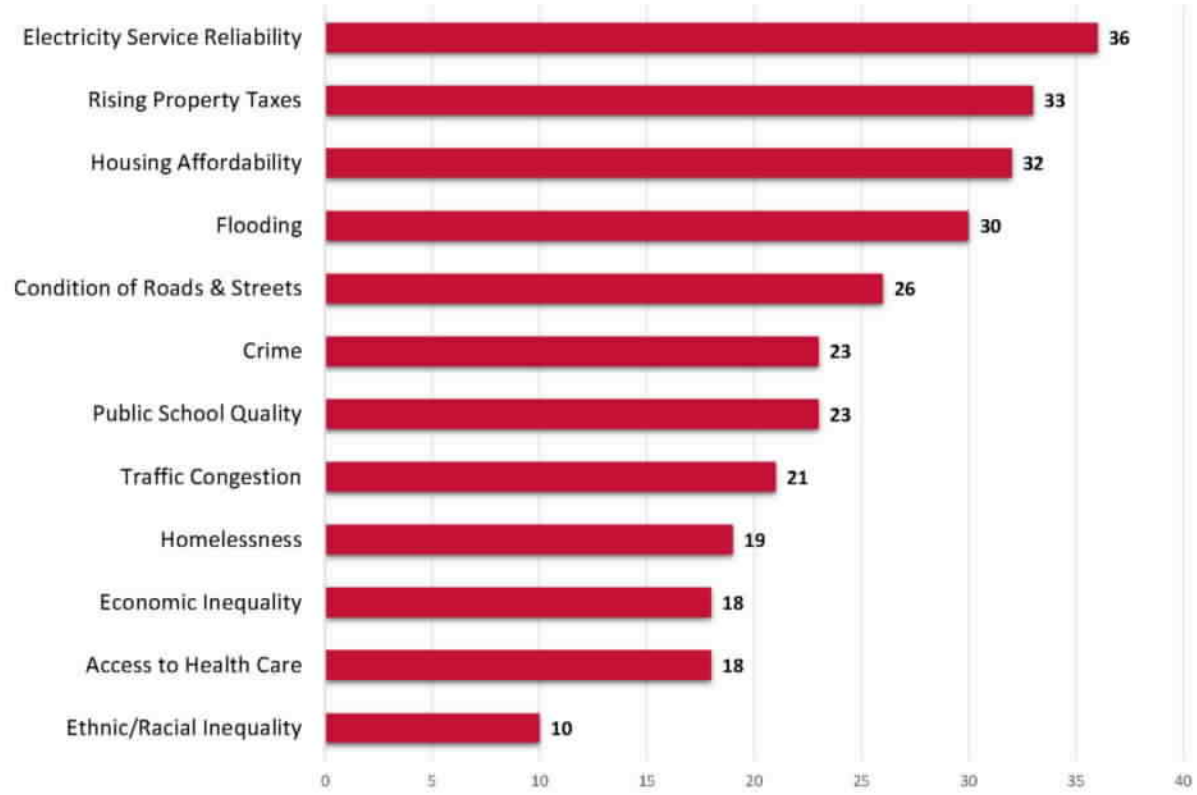
Figure 9. Proportion of Harris County Likely Voters Who List the Issue as the Single Most Serious Issue Facing the County Today (%)



Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

Figure 10 provides the proportion of the likely voters who listed each of the 12 issues as one of the three issues affecting Harris County that they are most concerned about. The four issues that the largest proportion of Harris County likely voters rank among their top three concerns are electricity service reliability (36%), rising property taxes (33%), housing affordability (32%) and flooding (30%). The four issues that the smallest proportion of Harris County likely voters rank among their top three concerns are ethnic/racial inequality (10%), access to health care (18%), economic inequality (19%) and homelessness (19%). In between these two extremes are the condition of roads & streets (26%), crime (23%), public school quality (23%) and traffic congestion (21%).

Figure 10. Proportion of Harris County Likely Voters Who List the Issue as One of the Three Most Serious Issues Facing the County Today (%)



Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

Table 12 provides the proportion of likely voters who list each of the six most cited issues (electricity service reliability, rising property taxes, housing affordability, flooding, condition of roads & streets, crime) as among the three issues affecting Harris County that they are most concerned about, broken down by gender, ethnicity/race, generation, educational attainment and partisanship.

Table 12. Proportion of Socio-Demographic Groups Listing Issue as One of Three Issues Affecting Harris County They Are Most Concerned About (%)

Socio-Demographic	Sub-Group	Electricity Service Reliability	Rising Property Taxes	Housing Affordability	Flooding	Condition of Roads & Streets	Crime
Overall		36	32	32	30	26	23
Gender	Women	34	24	36	28	26	24
	Men	38	41	26	31	26	21
Ethnicity/Race	White	38	39	26	33	27	21
	Latino	37	30	32	26	27	22
	Black	31	21	47	33	21	22
Generation	Silent/Boomer	51	39	22	32	29	22
	Generation X	45	31	34	27	21	28
	Millennial	25	25	38	31	22	17
	Generation Z	13	29	38	29	30	25
Education	High School	34	36	34	30	29	23
	Some College/2 Yr Degree	39	32	31	32	20	24
	4 Yr Degree/PostGrad	35	30	31	28	28	21
Partisanship	Democratic	39	22	43	33	24	12
	Independent	20	40	20	26	33	14
	Republican	37	44	19	26	26	39

Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

There are not any noteworthy gender, ethnic/racial, education or even partisan differences in the proportion of Harris County likely voters who list electricity service reliability as among the three issues about which they are most concerned. For instance, 38% of white likely voters, 37% of Latino likely voters and 31% of Black likely voters list the issue as among the three they are most concerned about, as do 39% of Democrats and 37% of Republicans. The only notable socio-demographic sub-group differences revolve around generation, with members of the older Silent Generation/Baby Boomer and Generation X cohorts more likely to be concerned about this issue than the younger Millennials and Gen-Zs.

No noteworthy ethnic/racial, generation and education differences exist in the proportion of Harris County likely voters who list rising property taxes as among the three issues about which they are most concerned. Notable sub-group differences do however exist based on gender, with men (41%) significantly more likely than women (24%) to be concerned about rising property taxes, and based on partisanship, with Republicans (44%) significantly more likely than Democrats (22%) to be concerned about rising property taxes.

There are not any noteworthy gender, education or generation differences in the proportion of Harris County likely voters who list housing affordability as among the three issues about which they are most concerned. Notable sub-group differences do however exist based on ethnicity/race, with Black likely voters (47%) significantly more likely than white likely voters (26%) to be concerned about the effect of housing affordability on Harris County, with a similar noteworthy split existing between Democrats (43%) and Republicans (19%).

Additionally, no noteworthy gender, ethnicity/race, generation, education or partisan differences are found in the proportion of Harris County likely voters who list flooding and the condition of roads & streets as being among the three issues affecting Harris County about which they are the most concerned. Similarly, there also do not exist any significant differences in regard to the issue of crime, with the one exception of Republicans (39%) significantly more likely to list this as a top three issue of concern than Democrats (12%).

Table 13 provides the proportion of likely voters who list each of the six least cited issues (public school quality, traffic congestion, homelessness, economic inequality, access to health care, ethnic/racial inequality) among the three issues affecting Harris County that they are most concerned about, broken down by gender, ethnicity/race, generation, educational attainment and partisanship.

Table 13. Proportion of Socio-Demographic Groups Listing Issue as One of Three Issues Affecting Harris County They Are Most Concerned About (%)

Socio-Demographic	Sub-Group	Public School Quality	Traffic Congestion	Homelessness	Economic Inequality	Access to Health Care	Ethnic & Racial Inequality
Overall		23	20	19	18	18	10
Gender	Women	23	24	22	19	22	10
	Men	23	17	16	17	13	10
Ethnicity/Race	White	27	19	12	17	13	10
	Latino	28	23	20	13	20	8
	Black	11	16	27	23	25	13
Generation	Silent/Boomer	17	21	17	7	10	6
	Generation X	19	18	22	13	14	9
	Millennial	34	22	20	26	22	10
	Generation Z	17	20	17	33	36	19
Education	High School	14	18	22	15	21	7
	Some College/2 Yr Degree	25	22	20	16	17	8
	4 Yr Degree/PostGrad	27	21	16	21	16	13
Partisanship	Democratic	22	18	21	21	23	11
	Independent	27	24	23	18	19	7
	Republican	22	23	14	13	11	9

Source: University of Houston Hobby School of Public Affairs, Texas Votes 2024

There are not any noteworthy gender, ethnicity/race, generation, education or partisan differences in the proportion of Harris County likely voters who list public school quality, traffic congestion, homelessness, economic inequality, access to health care and ethnic/racial inequality as being among the three issues affecting Harris County about which they are the most concerned.

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RECOMMENDED CITATION

University of Houston Hobby School of Public Affairs, October 2024, "Texas Votes 2024: Harris County"

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EXHIBIT 11

THE DIRECT TESTIMONY OF COMPANY WITNESS MR. JEFF W. GARMON

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DOCKET NO. 57579

APPLICATION OF CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC FOR APPROVAL OF ITS 2026-2028 TRANSMISSION AND DISTRIBUTION SYSTEM RESILIENCY PLAN	**§**	**PUBLIC UTILITY COMMISSION OF TEXAS**

DIRECT TESTIMONY OF

JEFF W. GARMON

ON BEHALF OF

CENTERPOINT ENERGY HOUSTON ELECTRIC, LLC

JANUARY 2025

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Exhibit JG-3	FERC 18 CFR Part 101 (Uniform System of Accounts)
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EXECUTIVE SUMMARY

I support the Company's application for approval of the 2026-2028 T&D SRP and cost recovery pursuant to PURA § 38.078 and 16 TAC § 25.62, relating to system resiliency plans.

My testimony:

- describes the policies and review procedures the Company has in place to ensure appropriate accounting treatment of expenditures as either O&M expenses or capital investments;
- demonstrates how the Company will apply its policies and review procedures in relation to the Resiliency Measures in the Company's SRP; and
- supports the Company's request for accounting language related to the deferral of distribution-related costs to a regulatory asset, as permitted by PURA § 38.078(k).

As supported by my testimony, as well as the testimony of other Company witnesses, the Company's System Resiliency Plan and the Company's requested accounting language should be approved by the Commission.

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND CURRENT POSITION.

A. My name is Jeff W. Garmon. I am Director of Regulatory Reporting for CenterPoint Energy Service Company, LLC.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL AND WORK BACKGROUND.

A. I graduated from Christopher Newport University with a Bachelor's degree in Business Administration with a concentration in Accounting. I also have a Master's degree in Accounting from the College of William & Mary. I began my career at the Virginia State Corporation Commission as an auditor for Staff's Utility Accounting & Finance division. In December 2017, I joined CNP as a Supervisor of Regulatory Reporting. In October 2020. I was promoted to Manager of Regulatory Reporting. I assumed my current role in January 2022 as Director of Regulatory Reporting. I am a Certified Public Accountant in the State of Virginia.

Q. WHAT ARE YOUR CURRENT RESPONSIBILITIES AT CNP?

A. As Director of Regulatory Reporting for CNP, I am responsible for the regulatory reporting of the regulated gas and electric businesses in the states of Indiana, Louisiana, Minnesota, Mississippi, Ohio, and Texas. As such, I am responsible for ensuring that CNP has adequate staff, processes, and systems in place to meet its regulatory accounting and reporting requirements for each of the aforementioned states. In addition, I am responsible for the adequacy of certain internal controls, including compliance with §404 of the Sarbanes-Oxley Act of 2002 as it relates to CNP's regulated operations.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of the Company, which is an electric transmission and distribution service provider in the ERCOT region.

Q. HAVE YOU TESTIFIED PREVIOUSLY?

A. Yes. I have presented testimony before the Commission on behalf of the Company in Docket Nos. 53442, 54825, 54830, 55993, 57385 and 56548, the Company's prior System Resiliency Plan, which this plan replaces. I have also presented testimony before the Texas Railroad Commission on behalf of CenterPoint Energy Resources Corp. and before the Virginia State Corporation Commission as a member of Staff. In addition, I have supervised the compilation of accounting information used for periodic reporting requirements and various CNP rate and regulatory proceedings before public utility commissions in the states of Arkansas, Indiana, Louisiana, Ohio, Oklahoma, Minnesota, Mississippi, and Texas.

Q. HAVE YOU INCLUDED ANY EXHIBITS TO SUPPORT YOUR TESTIMONY?

A. Yes, I have included the four exhibits listed in the Table of Contents as part of my testimony.

Q. WAS YOUR TESTIMONY PREPARED BY YOU OR BY OTHERS WORKING UNDER YOUR DIRECTION AND CONTROL?

A. Yes.

II. OVERVIEW OF TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to support the Company's application for approval

of its SRP and cost recovery pursuant to PURA § 38.078 and 16 TAC § 25.62. Specifically, my testimony explains the Company's policies and procedures as they relate to the proper treatment of expenditures as either O&M expenses or capital investment. I also discuss the application of the Company's policies and procedures within the context of the Company's SRP and the Resiliency Measures contained therein, which are designed to mitigate the risks posed to the Company's transmission and distribution system. My testimony also requests certain accounting language, as permitted by PURA § 38.078(k), and explains the calculation of related carrying costs.

III. ACCOUNTING POLICIES AND PROCEDURES

Q. DOES THE COMPANY HAVE ADEQUATE POLICIES AND REVIEW PROCEDURES IN PLACE FOR ITS RECORDED INVESTMENTS AND EXPENDITURES?

A. Yes. As detailed below, the Company has adequate processes and controls to ensure proper recording and classification.

Q. HOW DOES THE COMPANY ENSURE THAT TRANSACTIONS ARE PROPERLY RECORDED?

A. The Company maintains a system of internal controls. An internal control is simply a process that is effectuated through written policies and procedures that are followed by management and other personnel. The Company's internal controls with respect to the classification of projects between distribution and transmission investments has two major objectives:

- to ensure that financial statements are fairly presented in conformity with

GAAP and contain no material misstatements, and

- to ensure compliance with applicable laws and regulations, including adherence to SOX.

Q. IN ADDITION TO INTERNAL CONTROLS, MUST THE COMPANY FOLLOW CERTAIN ACCOUNTING PROCEDURES AS A REGULATED UTILITY?

A. Yes, the Company must follow the FERC USOA, which is the regulatory accounting and financial reporting regime established by FERC. The FERC USOA establishes a classification scheme that utilities use to classify plant-in-service as: intangible plant, production plant, transmission plant, distribution plant, and general plant. Additionally, the PUCT's substantive rules related to ratemaking require the Company to follow the FERC USOA.

Q. HOW DO THE COMPANY'S POLICIES DETERMINE WHETHER AN EXPENDITURE SHOULD BE TREATED AS A CAPITAL INVESTMENT OR AS AN EXPENSE?

A. The Company's Capitalization Policies, provided in Exhibit JG-02, govern whether an expenditure should be treated as a capital investment or an O&M expense. The Capitalization Policies were developed in accordance with FERC instructions on Additions and Retirements of Electric Plant, as seen in Exhibit JG-03 and GAAP.[1] The purpose of the Capitalization Policy, as noted therein, "is to provide the criteria for expenditure capitalization and addition to the capital base." To this end, the

[1] The various FERC guidelines are voluminous but are generally publicly available at https://www.ferc.gov/accounting-matters-1.

Capitalization Policy addresses the timing of work order completion (Page 1). It also defines and explains the policies relevant to retirement units (Page 2), substantial minor items (Page 2), and less than substantial minor items (Page 3). Similarly, the Capitalization Policy explicitly lists the types of investment that may be capitalized, which guides employees when they code an expenditure as a capital investment or O&M expense (Page 4). In short, the document provides employees with rules governing the accounting treatment of various capital investments.

Q. WHICH DEPARTMENT WITHIN THE COMPANY IS CHARGED WITH IMPLEMENTING THE CAPITALIZATION POLICY, AND HOW DOES THAT DEPARTMENT ENSURE THAT AMOUNTS CODED AS CAPITAL INVESTMENTS ARE ACCURATELY RECORDED?

A. The Property Accounting Department, part of the Company's finance organization, is charged with implementing the Capitalization Policy. When field work (memorialized through a work order) is complete, an analysis of the materials charged to the work order takes place. This analysis may be conducted systematically or manually depending on the type of asset being constructed. The process is typically automated for routine construction activities that use stock materials, but manual processing is required for orders that are associated with large, non-routine projects that use special order or non-stock materials. If a work order is found to lack necessary items for capitalization, such as materials, that work order is rejected and must be corrected to move forward through the review process. Pursuant to the Capitalization Policy, retirement units are assigned based on the

activity and materials used. Consistent with the FERC USOA, the FERC account assigned to the capital investments corresponds to the applicable retirement unit.

Q. HOW DOES THE COMPANY ENSURE THAT COSTS ARE ASSIGNED TO THE CORRECT FERC ACCOUNT, ACCORDING TO THE CAPITALIZATION POLICY AND FERC USOA?

A. The Company maintains its books according to the FERC USOA using its SAP, which tracks all costs according to the appropriate FERC Account, thereby maintaining compliance with applicable federal accounting regulations.

These are the same books that are audited annually by the Company's independent auditor, who audits not only the Company's actual costs for the year but also the Company's adherence to its processes and internal controls. The Company's audited processes and internal controls are the same processes and controls that were in place prior to the Company's last base rate proceeding in Docket No. 49421 and have been in place for all investments recovered through the Company's interim recovery mechanism proceedings since Docket No. 49421, specifically, the distribution cost recovery factor and transmission cost of service. As it relates to the SRP, FERC Accounts related to distribution are eligible for recovery through the methods prescribed under PURA §§ 38.078(i) and 38.078(k).

Q. DO ANY INTERNAL PROCESSES AND CONTROLS ENSURE THAT WORK ORDERS ARE PROPERLY AND ACCURATELY COMPLETED?

A. Yes. On a monthly basis, the Company's Property Accounting Department performs tests on accounting procedures with respect to the CNP SOX control "Manage Fixed Assets." The Company's Property Accounting Department

randomly selects a sample of capital orders that have been completed, processed, and closed. An accounting analyst then tests each selected work order and provides evidence from SAP that the work order met the specifications of being a capital order, including the appropriate retirement units.

Q. ARE THE INTERNAL CONTROLS OVER CAPITALIZATION SUBJECT TO REVIEW FOR COMPLIANCE WITH SOX REQUIREMENTS?

A. Yes. Pursuant to those controls, on a quarterly basis, the Company's Property Accounting staff samples the automated capital additions and reviews the sample to ensure that the dollars are capitalized to the appropriate retirement unit.

Q. ARE THE COMPANY'S CAPITAL ADDITIONS ALSO AUDITED BY AN INDEPENDENT AUDITOR?

A. Yes. During the Company's annual audit, the Company's external auditor samples and reviews capital additions and compliance with the Capitalization Policy.

IV. ACCOUNTING FOR RESILIENCY PLAN EXPENDITURES

Q. PLEASE SUMMARIZE THE RESILIENCY PLAN ESTIMATED COSTS.

A. The total estimated spend under the Company's SRP is approximately $5.754 billion, which comprises both O&M expense and capital investments. Capital investment estimates are summarized in Figure JG-1 below.

Figure JG-1
Resiliency Plan Capital Cost Estimates

Resiliency Plan Capital Cost Estimates (in millions)				
Resiliency Plan Event Categories		Estimated Capital Cost		Estimated Distribution - Related
Extreme Wind	$	3,864.6	$	1,851.5
Extreme Water	$	91.6	$	76.4
Extreme Temperature (Freeze)	$	53.5	$	40.2
Extreme Temperature (Drought)	$	1,207.2	$	1,178.4
Physical Attack	$	37.4	$	9.1
Technology & Cybersecurity	$	79.6	$	39.8
Situational Awareness	$	209.5	$	192.7
Total	**$**	**5,543.4**	**$**	**3,388.1**

Likewise, O&M investment estimates are summarized in Figure JG-2 below:

Figure JG-2
Resiliency Plan O&M Estimates

Total Estimated O&M (in millions)				
Resiliency Plan Event Categories		Estimated O&M Cost		Estimated Distribution - Related
Extreme Wind	$	148.1	$	146.7
Extreme Water	$	-	$	-
Extreme Temperature (Freeze)	$	2.6	$	1.7
Extreme Temperature (Drought)	$	37.2	$	36.0
Physical Attack	$	0.1	$	-
Technology & Cybersecurity	$	13.5	$	6.7
Situational Awareness	$	9.2	$	9.2
Total	**$**	**210.7**	**$**	**200.3**

The amounts shown in Figures JG-1 and JG-2 above are for the entire term of the SRP from 2026-2028. As explained later in my testimony, the Company will seek

to defer incremental distribution-related costs to a regulatory asset for future cost-recovery.

Q. WILL THE COMPANY FOLLOW AND APPLY CNP ACCOUNTING PROCESSES AND PROCEDURES FOR THE RESILIENCY MEASURES IN THE COMPANY'S SYSTEM RESILIENCY PLAN?

A. Yes. The Company will record costs associated with Resiliency Measures in the Company's SRP in accordance with the Company's Capitalization Policies and the FERC USOA. Work orders for each Resiliency Measure will undergo the thorough review process that I previously described in my testimony. This includes testing and sampling performed by the Company's Property Accounting team to ensure SOX compliance, as well as inclusion in the scope of review by the Company's external auditors.

Q. FOR THE RESILIENCY MEASURES WITH ESTIMATED CAPITAL COSTS, HOW WILL THOSE COSTS BE RECORDED?

A. As previously stated, all recordings for Resiliency Measures will be in accordance with Company policy and the FERC USOA, and as such, the ultimate FERC Account(s) will depend upon the specific facts and circumstances for the underlying costs of the Resiliency Measures at the time of the expenditure.

Q. HOW WILL THE COMPANY TRACK SYSTEM RESILIENCY PLAN COSTS?

A. Once approved, the Company will track the SRP costs through functionality available within SAP—specifically, work orders and WBS elements. This functionality allows for costs related to specific projects or activities to be

separately tracked and maintained. Capital projects associated with the Company's SRP will have their own work orders, with other incremental expenses being captured by specific WBS elements. In this manner, there will be clear tracking of the SRP costs.

V. REQUEST FOR ACCOUNTING LANGUAGE

Q. IS THE COMPANY REQUESTING APPROVAL OF A SYSTEM RESILIENCY PLAN COST RECOVERY RIDER AS PART OF ITS SRP?

A. No.

Q. IS THE COMPANY REQUESTING CERTAIN ACCOUNTING LANGUAGE AS PART OF ITS SRP?

A. Yes. PURA § 38.078(k) permits deferral of distribution-related costs related to the implementation of a SRP. As part of Commission approval of the Company's SRP, the Company requests the following language in any Commission order approving the Company's SRP:

> Effective on the earlier of the date of a final order in this proceeding or January 1, 2026, CenterPoint Houston may defer all or a portion of the distribution-related costs relating to the implementation of the Company's Resiliency Plan over a 3-year period for future recovery as a regulatory asset, including depreciation expense and carrying costs at the Company's weighted average cost of capital as established by the Commission's final order in the Company's most recent base rate proceeding, and use Commission-authorized cost recovery alternatives under 16 Tex. Admin. Code §§ 25.239 and 25.243 or another general rate proceeding.

The distribution-related costs to be deferred are not limited to depreciation expense and carrying costs but also include other incremental costs of the SRP, such as O&M expenses and property tax. Additionally, carrying costs refers not only to carrying costs on the balance of the regulatory asset, but also to carrying costs on

the net resiliency capital investment in service that is not being recovered through rates. As I described earlier in my testimony, the Company's accounting systems allow the Company to separately track and maintain costs to facilitate such deferral.

Q. IS THE COMPANY ALSO REQUESTING SPECIFIC CERTAIN ACCOUNTING LANGUAGE RELATED TO VEGETATION MANAGEMENT IN ITS SRP?

A. Yes. The Company also requests specific accounting language that would allow the Company to defer costs associated with distribution-related vegetation management costs relating to the implementation of the Company's SRP. The Company requests the following language in any Commission order approving the Company's SRP:

> Effective on the earlier of the date of a final order in this proceeding or January 1, 2026, CenterPoint Houston may defer the annual incremental distribution-related vegetation management costs relating to the implementation of the Company's System Resiliency Plan over a 3-year period for future recovery as a regulatory asset, including carrying costs at the Company's weighted average cost of capital established in the Commission's final order in the Company's most recent base rate proceeding, and use Commission-authorized cost recovery alternatives under 16 Tex. Admin. Code §§ 25.239 and 25.243 or another general rate proceeding. The annual baseline amount that will be used to determine the annual incremental distribution-related vegetation management costs shall be $46 million. Annual distribution-related vegetation management costs that exceed the annual baseline amount of $46 million shall be considered the annual incremental distribution-related vegetation management costs relating to the implementation of the Company's System Resiliency Plan and thus eligible to be deferred for future recovery as a regulatory asset.

Q. PLEASE EXPLAIN THE REQUESTED ACCOUNTING LANGUAGE.

A. Under the requested accounting language, a baseline amount is set and will be used to measure the vegetation management costs relating to implementation of the