

Risk Assessment Summary Report for City of San Augustine Water System

Report Date: June 24, 2021

Risk and Resilience Assessment Summary

Purpose

This risk and resilience assessment of City of San Augustine Water System was performed on June 24, 2021 using the U.S. Environmental Protection Agency's (EPA) Vulnerability Self-Assessment Tool (VSAT) Web Version 2.0. EPA developed and maintains VSAT Web to serve as an all-hazards risk and resilience assessment tool for water and wastewater utilities of all sizes. Specifically, EPA designed Version 2.0 of VSAT Web to assist community water systems with meeting the requirements for risk and resilience assessments in America's Water Infrastructure Act of 2018 (AWIA).

VSAT Web 2.0 can help water sector owners and operators with identifying the threats that present the highest risks to their facilities and with evaluating the costs and benefits of countermeasures to reduce those risks.

Methodology

VSAT Web 2.0 addresses malevolent acts, natural hazards, and dependency/proximity threats to water sector operations and analyzes the cost-effectiveness of countermeasures to reduce risk. The methodology in VSAT Web 2.0 is based on assessing the risk to a water system asset from a specific threat or hazard (i.e., an Asset-Threat Pair), where risk is defined as follows:

Risk (R) = Threat (T) X Vulnerability (V) X Consequences (C)

- T = Likelihood that the threat will be perpetrated or occur against the asset;
- V = Likelihood that the threat will damage the asset, considering the effectiveness of countermeasures; and
- C = Economic (cost to the utility and region) and public health (injuries and deaths) impacts resulting from damage to the asset.

A monetary value of statistical illness and value of statistical life are assigned to injuries and deaths, respectively, so that risk can be determined as a single monetized value.

AWIA requires community water systems to assess the risks to and resilience of specified assets from both malevolent acts and natural hazards. Accordingly, VSAT Web 2.0 begins with a characterization of water system resilience using the Utility Resilience Index, as described below. The analyst then conducts a qualitative assessment of risks from malevolent acts and natural hazards to all the assets required in AWIA. These steps can ensure that the assessment may be certified as compliant with AWIA.

Following these steps, the analyst determines which assets and threats will undergo a quantitative risk assessment, involving estimates of threat, vulnerability, and consequences. The quantitative risk assessment may include a broad spectrum of assets encompassing the entire water system, or be limited to those assets at highest risk. For threat selection, VSAT Web 2.0 includes all the malevolent acts, natural hazards, and dependency/proximity threats listed in the AWWA J100-10 Standard, along with source water (accidental and intentional) and finished water (accidental) contamination. Analysts may also designate a custom threat.

After completing a quantitative risk assessment under the current (baseline) conditions for the water system, the analyst may choose to conduct an optional assessment of additional (potential) countermeasures (an improvement analysis). VSAT Web 2.0 provides the analyst with a suite of countermeasures from which to select, or the analyst may designate a custom countermeasure. This analysis results in a profile of existing risk and a benefit/cost analysis of potential countermeasures to reduce risk.

Utility Overview

| Utility Type and Information | |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------|
| Utility Type | Drinking Water |
| Utility Name | City of San Augustine Water System |
| State/Territory | Texas |
| Zip Code | 75972 |
| Population Served | 4,000 |
| Ownership | Public |
| Average Daily Water Service (MGD) | 0.7 |
| Average Rate (\$/1000 gallons) | \$4.92 |
| Comments | Rate is a sliding scale. We support the City and much of the County of San Augustine via Rural Water System |

To edit utility type or information, return to the Utility Overview section in the tool.

Utility Resilience Index

The Utility Resiliency Index (URI) is a risk management tool that can assess a utility's capability to respond to and recover from an incident that impacts critical operations.¹ The URI is a valuable complement to the risk assessment performed in VSAT Web 2.0. A utility can use the URI together with the risk assessments results when developing an overall risk management plan.

The URI uses 12 indicators to calculate the index. Responses to the indicators are assigned values and weights, which are aggregated to provide a characterization of a utility's resilience on a scale from 0% to 100%. A low URI score indicates a low capability of the utility to respond to and recover from an incident, while a high URI score indicates a greater capability to do so. If multiple statements under one indicator apply to the utility, select the statement at the highest resilience level. Statements are arranged from lowest to highest resilience level under each indicator.

The URI for City of San Augustine Water System is: 24%

¹Adapted from Morley, K. M. (2012). *Evaluating resilience in the water sector: Application of the Utility Resilience Index (URI)*. (<http://www.worldcat.org/oclc/801849602>) and used with permission.

1. Emergency Response Plan (ERP)

An ERP provides a tactical level plan for immediate response to incidents of all types. Select the statement below that best describes the utility's ERP.

No ERP or ERP status unknown

2. National Incident Management System (NIMS) Compliance

NIMS establishes a common framework for defining roles and responsibilities to enhance incident response. NIMS applies the Incident Command System (ICS) to provide the support structure for response activities. Select the statement below that best describes the utility's NIMS compliance.

No ICS/NIMS training completed or NIMS compliance unknown

3. Mutual Aid and Assistance (MAA)

MAA agreements between other utilities and jurisdictions help to provide rapid response to incidents. Participation in such agreements is traditionally at no cost and does not obligate signatories to respond. An example is the Water/Wastewater Agency Response Network (WARN). Select the statement below that best describes the utility's MAA agreements.

Intra-municipal (within own city/town agencies)

4. Emergency Power for Critical Operations (EPCO)

EPCO is a minimum benchmark of 72 hours for backup power for critical operations and assets. Select the statement below that best describes the utility's EPCO.

25 hours to 48 hours of backup power

5. Minimum Daily Demand/Treatment (MDDT)

MDDT is the ability to meet minimum daily demand or treatment when the production or treatment plant is non-functional. For example, a drinking water utility typically has some level of in-system storage that can provide minimum daily flows for a time even though a treatment plant may be non-functional. Select the statement below that best describes the utility's MDDT.

25 hours to 48 hours

6. Critical Parts and Equipment (CPA)

CPA is the lead time for repair, replacement, or recovery of operationally critical parts or equipment. Critical parts are defined as components of the system that upon failure may have the potential to impair the ability to produce, distribute, or treat drinking water or wastewater, including both physical and cyber/process control systems. Select the statement below that best describes the utility's CPA.

Less than 24 hours

7. Critical Staff Resilience (CSR)

CSR is the percentage of response-capable staff who are cross-trained in critical operations and maintenance positions and available as staff backup. This indicator is primarily related to pandemic flu planning. Select the statement below that best describes the utility's CSR.

10 to 25%

8. Business Continuity Plan (BCP)

A BCP provides an overall indicator of a utility's commitment to integrating risk management principles into the management culture that supports their operations. These plans address the potential financial effects of a crisis, as well as the utility's flexibility to adapt human resource policies to meet the changing needs of employees. Select the statement below that best describes the utility's BCP.

No BCP or unknown

9. Utility Bond Rating (UBR)

UBRs are assigned by Moody's and indicate a utility's ability and willingness to satisfy financial obligations. The rating includes five primary factors related to municipal finance, which include market position, financial position, debt levels, governance, and covenants. Some utilities may not have a bond rating since they do not seek additional investment capital from the market. Select the statement below that best describes the utility's UBR.

Caa, less than or equal to, or unknown

10. Government Accounting Standards Board (GASB) Assessment

A GASB Assessment determines how much infrastructure has been evaluated to provide an indication of the utility's overall commitment to proper asset management. The assessment coverage is calculated as: $100 \times \text{total number of critical assets categorized into condition categories} / \text{total number of critical assets as determined in the asset characterization step of the J100 standard}$. Select the statement below that best describes the utility's GASB Assessment.

Less than 20% assessed or unknown

11. Unemployment*

Unemployment is a general socioeconomic indicator of a community's economic health. The Bureau of Labor Statistics (BLS) maintains a database of state and local rates (see <http://www.bls.gov/lau/tables.htm>) which provides a consistent source for determining this indicator. The value for this indicator is based on the unemployment level in the community served by the utility. Select the statement below that best describes the unemployment rate in the service area.

> 2 - 4% National Average

12. Median Household Income (MHI)*

MHI is a socioeconomic indicator of the wealth of the community served by the utility. This indicator provides insight on the fragility of a community to withstand a significant incident that could threaten the financial stability of the utility. The U.S. Census Bureau maintains a database for each state and county (see <https://www.census.gov/quickfacts/fact/table/US/PST045218>). Select the statement below that best describes the MHI in the service area.

10% or more below State Median

To adjust any of the responses above, return to the tool and revise the selections in the Utility Resilience Index section.

Qualitative Risk Assessment

Results from the Qualitative Risk Assessment for the utility are shown below

| Asset Category | Threat Type: Malevolent Act | Threat Type: Natural Hazard | Reason for not selecting threat type |
|-----------------------------------------------------------------|-----------------------------|-----------------------------|------------------------------------------------------------------------------------------------|
| Physical Barriers | | | Our barriers are locks on doors and fencing which is in good repair and in working order. |
| Source Water | X | X | City Lake is small and exposed to malevolent acts and storm events including any dam failures. |
| Pipes and Constructed Conveyances, Water Collection, and Intake | | X | |
| Pretreatment and Treatment | | X | |

Risk and Resilience Assessment Summary Report Using VSAT Web 2.0

| Asset Category | Threat Type: Malevolent Act | Threat Type: Natural Hazard | Reason for not selecting threat type |
|-------------------------------------------------------------------------------------------|-----------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Storage and Distribution Facilities | | X | |
| Electronic, Computer, or other Automated Systems (including the security of such systems) | | | We have no software or hardware susceptible to hacking other than turning the system off at the plant. Any issue including that will be caught within hours at most by Operators. |
| Monitoring Practices | | | Monitoring is redundant with staff. Malevolent acts might interrupt data or turn something off, but this will not affect the supply to users. |
| Financial Infrastructure | | | We are too small to be crippled by this. |
| The Use, Storage, or Handling of Chemicals | | | Chemicals are not automated, and are kept locked up within two secure areas. |
| The Operation and Maintenance of the Utility | | X | We have been struck repeatedly by weather which remains our biggest issue. |

To adjust any of the responses above, return to the tool and revise the answers in the Qualitative Risk Assessment section.

Quantitative Risk Assessment

Below is a list of the assets and threats the analyst selected for the utility's quantitative risk assessment. To edit any of the asset/threat pairs below, return to the Quantitative Risk Assessment section of the tool and make the changes.

| Identified Assets | Assigned Threats | | |
|---------------------------------------------|---------------------------------------------|------------------------------------------------|------------------------------------------------|
| | Most likely scenario is an accidental spill | H3 - Hurricane - Category 3 - Rita, Harvey etc | H3 - Hurricane - Category 3 - Rita, Harvey Etc |
| City Lake | X | X | |
| Water Plant at City Lake | | | X |
| Water Tower Highway 96 | | | |
| City Operations | | | |
| Hospital Water Tower | | | |
| Midtown Transfer Pump Station (Light Plant) | | | |
| 147 Booster Station | | | |

| Identified Assets | Assigned Threats | | |
|---------------------------------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------------------|
| | T2 - Tornado - Fujita 2 - March 2019 Tornado | I4 - Ice Storm - Prolonged Outages - Feb 2021 Event | I4 - Ice Storm - Prolonged Outages - Sensitive Equipment |
| City Lake | | | |
| Water Plant at City Lake | X | X | |
| Water Tower Highway 96 | X | | X |
| City Operations | | | |
| Hospital Water Tower | X | | |
| Midtown Transfer Pump Station (Light Plant) | X | | |
| 147 Booster Station | | | |

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| Identified Assets | Assigned Threats | | |
|---------------------------------------------|---------------------------------------|-----------------------------------------------------|---------------------------------------------------------|
| | D(U) - Utilities - Coop Interruptions | D(E) - Key Employees - Operations staff live remote | I3 - Ice Storm - Numerous Outages - Sensitive Equipment |
| City Lake | | | |
| Water Plant at City Lake | | | |
| Water Tower Highway 96 | | | |
| City Operations | X | X | |
| Hospital Water Tower | | | X |
| Midtown Transfer Pump Station (Light Plant) | | | |
| 147 Booster Station | | | |

| Identified Assets | Assigned Threats | | |
|---------------------------------------------|----------------------------------|-------------------------------------------------|-----------------------------------------------|
| | No precedent. Facility Isolated. | F1 - Flood - 100 Year - Possible on Ayish Bayou | H3 - Hurricane - Category 3 - Rita Harvey Etc |
| City Lake | | | |
| Water Plant at City Lake | | | |
| Water Tower Highway 96 | | | |
| City Operations | | | |
| Hospital Water Tower | | | |
| Midtown Transfer Pump Station (Light Plant) | X | X | X |
| 147 Booster Station | | | X |

| Identified Assets | Assigned Threats | | |
|-------------------|-----------------------------------------------------|--------------------|--------------------------------------------|
| | I3 - Ice Storm - Numerous Outages - Feb 20201 Event | Remote but secured | T2 - Tornado - Fujita 2 - March 2019 Event |
| City Lake | | | |

Risk and Resilience Assessment Summary Report Using VSAT Web 2.0

| Identified Assets | Assigned Threats | | |
|---------------------------------------------|------------------|---|---|
| Water Plant at City Lake | | | |
| Water Tower Highway 96 | | | |
| City Operations | | | |
| Hospital Water Tower | | | |
| Midtown Transfer Pump Station (Light Plant) | X | | |
| 147 Booster Station | | X | X |

| Identified Assets | Assigned Threats | | |
|---------------------------------------------|--------------------------------------------------------|--|--|
| | I3 - Ice Storm - Numerous Outages - Heated with genset | | |
| City Lake | | | |
| Water Plant at City Lake | | | |
| Water Tower Highway 96 | | | |
| City Operations | | | |
| Hospital Water Tower | | | |
| Midtown Transfer Pump Station (Light Plant) | | | |
| 147 Booster Station | X | | |

Countermeasure Risk Assessment

To add information in this section, return to the Countermeasure Risk Assessment section of the tool and complete the analysis there.

Assessment Summary

The table below shows the monetized risk summary for each asset/threat pair. Baseline results reflect existing countermeasures and improvement results reflect enhanced mitigation with the selected potential countermeasures in place. To edit any of the information shown in the table(s) below, return to either the Quantitative Risk Assessment or Countermeasure Risk Assessment section of the tool and make changes there.

Asset/Threat Pair: City Lake/Most likely scenario is an accidental spill - Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|-------------|-------------|
| Monetized Risk | \$90,540 | \$0 |
| Utility Financial Impact | \$1,000,000 | \$0 |
| Regional Economic Impact | \$5,000,000 | \$0 |
| Fatalities | 3 | 0 |
| Injuries | 10 | 0 |
| Vulnerability Likelihood | 30% | |
| Annual Threat Likelihood | 0.01 | 0 |

Asset/Threat Pair: City Lake/H3 - Hurricane - Category 3 - Rita, Harvey etc Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|----------|-------------|
| Monetized Risk | \$3,000 | \$0 |
| Utility Financial Impact | \$25,000 | \$0 |
| Regional Economic Impact | \$0 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 30% | |
| Annual Threat Likelihood | 0.4 | 0 |

Asset/Threat Pair: Water Plant at City Lake/H3 - Hurricane - Category 3 - Rita, Harvey Etc Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|----------------|----------|-------------|
| Monetized Risk | \$1,000 | \$0 |

| Risk Metrics | Baseline | Improvement |
|--------------------------|-----------|-------------|
| Utility Financial Impact | \$100,000 | \$0 |
| Regional Economic Impact | \$0 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 5% | |
| Annual Threat Likelihood | 0.2 | 0 |

Asset/Threat Pair: Water Plant at City Lake/T2 - Tornado - Fujita 2 - March 2019 Tornado Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|-----------|-------------|
| Monetized Risk | \$2 | \$0 |
| Utility Financial Impact | \$250,000 | \$0 |
| Regional Economic Impact | \$500,000 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 5% | |
| Annual Threat Likelihood | 0.000059 | 0 |

Asset/Threat Pair: Water Plant at City Lake/I4 - Ice Storm - Prolonged Outages - Feb 2021 Event Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|-------------|-------------|
| Monetized Risk | \$525 | \$0 |
| Utility Financial Impact | \$50,000 | \$0 |
| Regional Economic Impact | \$1,000,000 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 5% | |
| Annual Threat Likelihood | 0.01 | 0 |

Asset/Threat Pair: Water Tower Highway 96/T2 - Tornado - Fujita 2 - March 2019 Tornado Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|-----------|-------------|
| Monetized Risk | \$0 | \$0 |
| Utility Financial Impact | \$25,000 | \$0 |
| Regional Economic Impact | \$500,000 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 1% | |
| Annual Threat Likelihood | 0.000059 | 0 |

Asset/Threat Pair: Water Tower Highway 96/14 - Ice Storm - Prolonged Outages - Sensitive Equipment Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|----------|-------------|
| Monetized Risk | \$150 | \$0 |
| Utility Financial Impact | \$15,000 | \$0 |
| Regional Economic Impact | \$0 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 5% | |
| Annual Threat Likelihood | 0.2 | 0 |

Asset/Threat Pair: City Operations/D(U) - Utilities - Coop Interruptions Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|-----------|-------------|
| Monetized Risk | \$10,500 | \$0 |
| Utility Financial Impact | \$25,000 | \$0 |
| Regional Economic Impact | \$500,000 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 5% | |
| Annual Threat Likelihood | 0.4 | 0 |

Asset/Threat Pair: City Operations/D(E) - Key Employees - Operations staff live remote Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|-----------|-------------|
| Monetized Risk | \$5,250 | \$0 |
| Utility Financial Impact | \$25,000 | \$0 |
| Regional Economic Impact | \$500,000 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 5% | |
| Annual Threat Likelihood | 0.2 | 0 |

Asset/Threat Pair: Hospital Water Tower/T2 - Tornado - Fujita 2 - March 2019 Tornado Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|-----------|-------------|
| Monetized Risk | \$1 | \$0 |
| Utility Financial Impact | \$25,000 | \$0 |
| Regional Economic Impact | \$500,000 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 2% | |
| Annual Threat Likelihood | 0.000059 | 0 |

Asset/Threat Pair: Hospital Water Tower/I3 - Ice Storm - Numerous Outages - Sensitive Equipment Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|----------|-------------|
| Monetized Risk | \$150 | \$0 |
| Utility Financial Impact | \$15,000 | \$0 |
| Regional Economic Impact | \$0 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 5% | |
| Annual Threat Likelihood | 0.2 | 0 |

Asset/Threat Pair: Midtown Transfer Pump Station (Light Plant)/No precedent. Facility Isolated. - Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|-----------|-------------|
| Monetized Risk | \$0 | \$0 |
| Utility Financial Impact | \$25,000 | \$0 |
| Regional Economic Impact | \$500,000 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 5% | |
| Annual Threat Likelihood | 0.000001 | 0 |

Asset/Threat Pair: Midtown Transfer Pump Station (Light Plant)/F1 - Flood - 100 Year - Possible on Ayish Bayou Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|-----------|-------------|
| Monetized Risk | \$263 | \$0 |
| Utility Financial Impact | \$25,000 | \$0 |
| Regional Economic Impact | \$500,000 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 5% | |
| Annual Threat Likelihood | 0.01 | 0 |

Asset/Threat Pair: Midtown Transfer Pump Station (Light Plant)/H3 - Hurricane - Category 3 - Rita Harvey Etc Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|-----------|-------------|
| Monetized Risk | \$5,250 | \$0 |
| Utility Financial Impact | \$25,000 | \$0 |
| Regional Economic Impact | \$500,000 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 5% | |
| Annual Threat Likelihood | 0.2 | 0 |

Asset/Threat Pair: Midtown Transfer Pump Station (Light Plant)/T2 - Tornado - Fujita 2 - March 2019 Tornado Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|-----------|-------------|
| Monetized Risk | \$0 | \$0 |
| Utility Financial Impact | \$25,000 | \$0 |
| Regional Economic Impact | \$500,000 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 1% | |
| Annual Threat Likelihood | 0.000059 | 0 |

Asset/Threat Pair: Midtown Transfer Pump Station (Light Plant)/I3 - Ice Storm - Numerous Outages - Feb 20201 Event Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|-----------|-------------|
| Monetized Risk | \$525 | \$0 |
| Utility Financial Impact | \$25,000 | \$0 |
| Regional Economic Impact | \$500,000 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 5% | |
| Annual Threat Likelihood | 0.02 | 0 |

Asset/Threat Pair: 147 Booster Station/Remote but secured - Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|----------|-------------|
| Monetized Risk | \$0 | \$0 |
| Utility Financial Impact | \$10,000 | \$0 |
| Regional Economic Impact | \$0 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 1% | |
| Annual Threat Likelihood | 0.000001 | 0 |

Asset/Threat Pair: 147 Booster Station/H3 - Hurricane - Category 3 - Rita Harvey Etc Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|----------|-------------|
| Monetized Risk | \$15 | \$0 |
| Utility Financial Impact | \$10,000 | \$0 |
| Regional Economic Impact | \$0 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 3% | |
| Annual Threat Likelihood | 0.05 | 0 |

Asset/Threat Pair: 147 Booster Station/T2 - Tornado - Fujita 2 - March 2019 Event Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|----------|-------------|
| Monetized Risk | \$15 | \$0 |
| Utility Financial Impact | \$10,000 | \$0 |
| Regional Economic Impact | \$0 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 3% | |
| Annual Threat Likelihood | 0.05 | 0 |

Asset/Threat Pair: 147 Booster Station/I3 - Ice Storm - Numerous Outages - Heated with genset Monetized Risk Summary

Existing Countermeasures: Potential Countermeasures:

| Risk Metrics | Baseline | Improvement |
|--------------------------|----------|-------------|
| Monetized Risk | \$15 | \$0 |
| Utility Financial Impact | \$10,000 | \$0 |
| Regional Economic Impact | \$0 | \$0 |
| Fatalities | 0 | 0 |
| Injuries | 0 | 0 |
| Vulnerability Likelihood | 3% | |
| Annual Threat Likelihood | 0.05 | 0 |

Countermeasure Costs and Packages

To add information in this section, return to the Countermeasure Costs and Countermeasure Packages sections of the tool and complete the analysis there.