

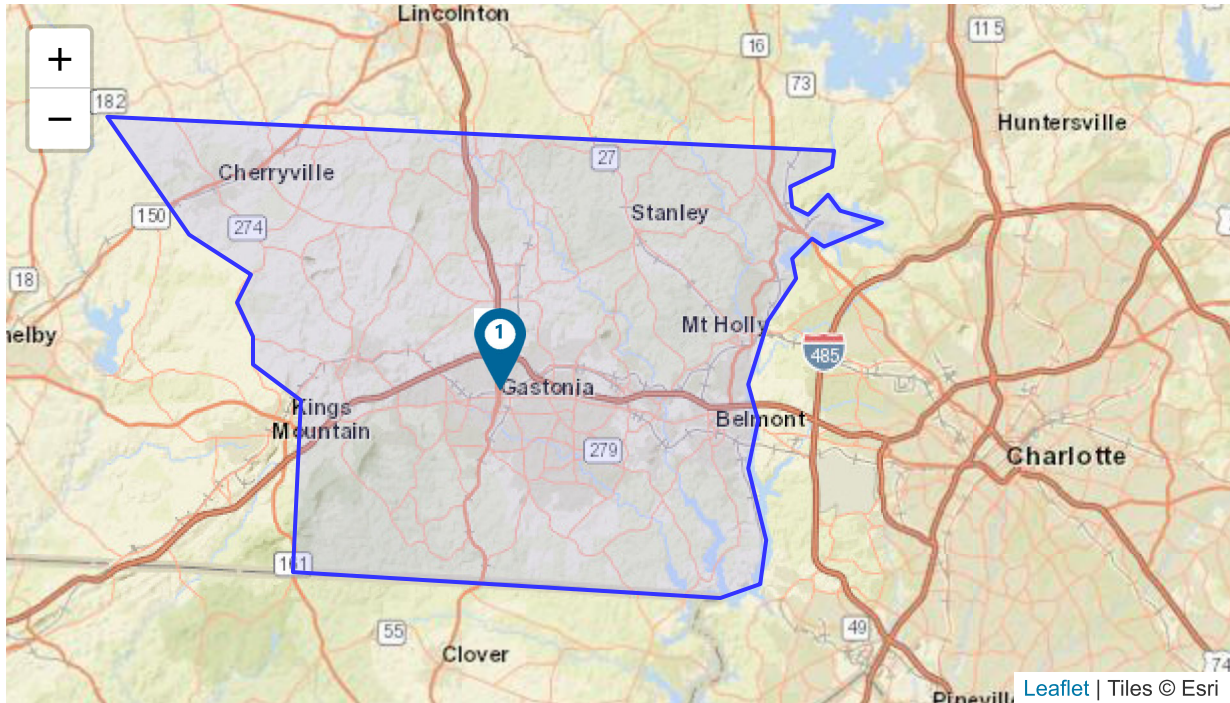


# Benefit-Cost Calculator

V.6.0 (Build 20230103.1822 | Release Notes)

## Benefit-Cost Analysis

Project Name: Water Treatment Plant – Resilient Power



| Map Marker              | Mitigation Title                | Property Type | Hazard                       | Using 7% Discount Rate |                     |             | Using 3% Discount Rate<br>(For FY22 BRIC and FMA only) |                     |             |
|-------------------------|---------------------------------|---------------|------------------------------|------------------------|---------------------|-------------|--|---------------------|-------------|
|                         |                                 |               |                              | Benefits (B)           | Costs (C)           | BCR (B/C)   | Benefits (B)   | Costs (C)           | BCR (B/C)   |
| ▲ 1                     | Other @ 35.2659360; -81.1851390 |               | DFA - Infrastructure Failure | \$ 12,329,972          | \$ 6,598,346        | 1.87        | \$ 17,087,748  | \$ 6,682,290        | 2.56        |
| <b>TOTAL (SELECTED)</b> |                                 |               |                              | <b>\$ 12,329,972</b>   | <b>\$ 6,598,346</b> | <b>1.87</b> | <b>\$ 17,087,748</b>                                   | <b>\$ 6,682,290</b> | <b>2.56</b> |
| <b>TOTAL</b>            |                                 |               |                              | <b>\$ 12,329,972</b>   | <b>\$ 6,598,346</b> | <b>1.87</b> | <b>\$ 17,087,748</b>                                   | <b>\$ 6,682,290</b> | <b>2.56</b> |

**Property Configuration**

**Property Title:** Other @ 35.2659360; -81.1851390

**Property Location:** 28052, Gaston, North Carolina

**Property Coordinates:** 35.265936, -81.185139

**Hazard Type:** Infrastructure Failure

**Mitigation Action Type:** Other

**Property Type:** Utilities

**Analysis Method Type:** Professional Expected Damages

**Cost Estimation**  
Other @ 35.2659360; -81.1851390

**Project Useful Life (years):** 19

**Project Cost:** \$6,380,800

**Number of Maintenance Years:** 19 Use Default:Yes

**Annual Maintenance Cost:** \$21,048

**Damage Analysis Parameters - Damage Frequency Assessment**  
Other @ 35.2659360; -81.1851390

**Year of Analysis was Conducted:** 2022

**Year Property was Built:** 1920

**Analysis Duration:** 103 Use Default:Yes

**Utilities Properties**  
Other @ 35.2659360; -81.1851390

**Type of Service:** Potable Water

**Number of Customers Served:** 120,237

**Value of Unit of Service (\$/person/day):** \$116 Use Default:Yes

**Total Value of Service Per Day (\$/day):** \$13,947,492

**Professional Expected Damages Before Mitigation**  
Other @ 35.2659360; -81.1851390

| Recurrence Interval (years) | POTABLE WATER | OPTIONAL DAMAGES |                 |                 | VOLUNTEER COSTS      |                | TOTAL        |
|-----------------------------|---------------|------------------|-----------------|-----------------|----------------------|----------------|--------------|
|                             | Impact (days) | Category 1 (\$)  | Category 2 (\$) | Category 3 (\$) | Number of Volunteers | Number of Days | Damages (\$) |
| 1                           | 0.04          | 0                | 0               | 0               | 0                    | 0              | 557,900      |
| 48                          | 0.17          | 0                | 0               | 0               | 0                    | 0              | 2,371,074    |
| 106                         | 1             | 0                | 0               | 0               | 0                    | 0              | 13,947,492   |

Annualized Damages Before Mitigation

Other @ 35.2659360; -81.1851390

| Annualized Recurrence Interval (years) | Damages and Losses (\$) | Annualized Damages and Losses (\$)     |
|--|-------------------------|--|
| 1                                      | 557,900                 | 1,126,178                              |
| 48                                     | 2,371,074               | 65,554                                 |
| 106                                    | 13,947,492              | 131,579                                |
| Sum Damages and Losses (\$)            |                         | Sum Annualized Damages and Losses (\$) |
|  | 16,876,465              | 1,323,311                              |

Professional Expected Damages After Mitigation

Other @ 35.2659360; -81.1851390

| Recurrence Interval (years) | POTABLE WATER | OPTIONAL DAMAGES |                 |                 | VOLUNTEER COSTS      |                | TOTAL        |
|-----------------------------|---------------|------------------|-----------------|-----------------|----------------------|----------------|--------------|
|                             | Impact (days) | Category 1 (\$)  | Category 2 (\$) | Category 3 (\$) | Number of Volunteers | Number of Days | Damages (\$) |
| 107                         | 1             | 0                | 0               | 0               | 0                    | 0              | 13,947,492   |

Annualized Damages After Mitigation

Other @ 35.2659360; -81.1851390

| Annualized Recurrence Interval (years) | Damages and Losses (\$) | Annualized Damages and Losses (\$)     |
|--|-------------------------|--|
| 107                                    | 13,947,492              | 130,349                                |
| Sum Damages and Losses (\$)            |                         | Sum Annualized Damages and Losses (\$) |
|  | 13,947,492              | 130,349                                |

Benefits-Costs Summary

Other @ 35.2659360; -81.1851390

|  |              |
|--|--------------|
| <b>Total Standard Mitigation Benefits:</b>     | \$12,329,972 |
| <b>Total Social Benefits:</b>                  | \$0          |
| <b>Total Mitigation Project Benefits:</b>      | \$12,329,972 |
| <b>Total Mitigation Project Cost:</b>          | \$6,598,346  |
| <b>Benefit Cost Ratio - Standard:</b>          | 1.87         |
| <b>Benefit Cost Ratio - Standard + Social:</b> | 1.87         |