# Summary of Impact Fee Study Report
**by Utility Financial Solutions, LLC**

## Purpose of Impact Fees

Impact fees are used to fund capital-related costs (e.g., new buildings) incurred in providing governmental service to "new" development. The basic philosophy behind impact fees is that "new" development should bear the additional or "incremental" capital cost incurred and necessary to provide service to the "new" development. This establishes a cost causation or "nexus" requirement between the cost incurred in providing the service and those who benefit from the service. To be clear however, impact fees are not intended to recover annual operating expenses (e.g., utility costs) or to pay for capital expenditures related to the correction of an existing deficiency in the service provided.

The Company currently imposes an impact fee on a request for a new connection or additional service. This impact fee helps the pay a portion of the costs for the new system improvements required to serve the new development. The Company has retained Utility Financial Solutions, LLC to assist in developing an impact fee based on current conditions.

## Method of Calculating Impact Fees

The UFS Report determines the allowable impact fee based on: (1) the projected additional demand for electricity from the future growth and (2) the Company's cost of constructing system improvements required to deliver this electricity to customers. The additional demand for electricity is based on the Company's projection of future growth in electricity sales caused by new customers added to the system. This projection is consistent with the recent historical growth on the HLP system. The UFS Report uses the Company's growth projections to determine the total, maximum annual demand for electricity from all classes of customers and to determine that projected increase in demand for electricity is 30,845 kW for the period 2021 through 2026.

The cost of system improvements required to serve this additional demand was provided by the Company's Impact Fee Facilities Plan. The UFS Report divides these projected costs by the projected increase in demand to determine the cost/kW of these system improvements. This amount was adjusted by a utilization factor to reflect that typical customers typically use less electric power than the size of a typical connection.

## Range of Impact Fees

The UFS Report recognizes that the Company's Board may not wish to impose the fully allowable impact fee. It includes a calculation of the value brought to the system by a new customer. A comparison of impact fees from other local entities is included to demonstrate where the HLP rate will settle.

The report is as follows:

# Heber Light & Power
# Impact Fee Study Results

Mark Beauchamp
President
Utility Financial Solutions, LLC

# Utility Financial Solutions, LLC

- International consulting firm providing cost of service and financial plans and services to utilities across the country, Canada, Guam and the Caribbean
- Instructors for cost of service and financial planning for APPA, speakers for organizations across the country including AWWA.
- Hometown Connections preferred vendor for cost of service and financial analysis.

UFS
Utility Financial Solutions, LLC

Hometown Connections® partner

# Discussion
# Growth Pays for Growth

- Impacts caused by New Customers
  - Growth causes additional capacity investments
  - The investments tend to occur intermittently

- Value New Customers Provide
  - New customers generate contribution margins in the rates to fund fixed infrastructure costs
  - Cost of service study identifies the fixed and variable cost components used to identify a customer's value

# Investments in System Capacity

| Fund Balance | | $ 2,868,079 | | |
|---|---|---|---|---|
| | | | | |
| **Cost Component** | **Gross Investment** | **Percent of total** | **Allocation of Fund Balance** | **Net Impact** |
| **Distribution Local & Substations** | $ 10,742,000 | 25% | 716,188 | 10,025,812 |
| **Distribution Substation** | $ 11,917,000 | 28% | 794,527 | 11,122,473 |
| **System Substations** | 16,253,900 | 38% | 1,083,676 | 15,170,224 |
| **Transmission System** | 4,105,000 | 10% | 273,688 | 3,831,312 |
| **Total** | **$ 43,017,900** | | | **$ 40,149,821** |

| | **Distribution Local & Substations** | **System Substations** | **Transmission System** | **Total** |
|---|---|---|---|---|
| Total Investment | $ 21,148,284 | $ 15,170,224 | $ 3,831,312 | $ 40,149,821 |
| | | | | |
| Projected New Loadings | 30,845 | 91,830 | 27,258 | |
| Residential Loading Average | 9.54 | 2.38 | 2.38 | |
| **Residential Equivalents** | **3,233** | **38,603** | **11,459** | |
| Average Cost per RE | 6,542 | 393 | 334 | 7,269 |
| Contribution Value | - | - | - | 2,585 |
| **Impact Average** | **$ 6,542** | **$ 393** | **$ 334** | **$ 4,684** |

# Value from a New Customer

| Customer Class | COS Revenue Requirement | Fixed Costs Contribution | Recovery Period (Years) | Utility Investment | | Maximum Utility Investment per Customer |
|---|---|---|---|---|---|---|
| Residential | $ 11,782,845 | $ 4,896,097 | 7 | $ 0.2870 | per kWh | $ 2,586 |
| Small Commercial | 2,464,627 | 930,437 | 5 | 41.02 | per kW | 2,608 |
| Medium Commercial | 2,915,961 | 1,143,436 | 5 | 42.59 | per kW | 37,338 |
| Large Commercial | 1,602,373 | 643,665 | 5 | 41.57 | per kW | 180,757 |

# Proposed Impact Fees

| | Current 120/240 Volt | Proposed 120/240 Volt | Proposed 120/208 Volt | Proposed 277/480 Volt | Dollar Adjustment | Percent Adjustment |
|---|---|---|---|---|---|---|
| 10 A | $ 169.25 | $ 234.19 | $ 351.54 | $ 811.24 | $ 330.72 | 38.4% |
| 20 A | 338.48 | 468.37 | 703.06 | 1,622.42 | 661.37 | 38.4% |
| 30 A | 507.73 | 702.57 | 1,054.61 | 2,433.66 | 992.09 | 38.4% |
| 40 A | 676.96 | 936.74 | 1,406.13 | 3,244.84 | 1,322.75 | 38.4% |
| 50 A | 846.21 | 1,170.94 | 1,757.67 | 4,056.08 | 1,653.46 | 38.4% |
| 60 A | 1,015.45 | 1,405.11 | 2,109.19 | 4,867.26 | 1,984.12 | 38.4% |
| 70 A | 1,184.69 | 1,639.31 | 2,460.74 | 5,678.49 | 2,314.83 | 38.4% |
| 80 A | 1,353.93 | 1,873.49 | 2,812.26 | 6,489.67 | 2,645.48 | 38.4% |
| 90 A | 1,523.18 | 2,107.68 | 3,163.80 | 7,300.91 | 2,976.20 | 38.4% |
| 100 A | 1,692.41 | 2,341.86 | 3,515.32 | 8,112.09 | 3,306.85 | 38.4% |
| 125 A | 2,115.52 | 2,927.33 | 4,394.16 | 10,140.13 | 4,133.59 | 38.4% |
| 150 A | 2,538.62 | 3,512.80 | 5,272.99 | 12,168.17 | 4,960.32 | 38.4% |
| 175 A | 2,961.73 | 4,098.26 | 6,151.83 | 14,196.21 | 5,787.05 | 38.4% |
| 200 A | 3,384.82 | 4,683.72 | 7,030.64 | 16,224.19 | 6,613.72 | 38.4% |
| 300 A | 5,077.25 | 7,025.59 | 10,545.98 | 24,336.34 | 9,920.63 | 38.4% |
| 400 A | 6,769.66 | 9,367.45 | 14,061.30 | 32,448.43 | 13,227.49 | 38.4% |
| 500 A | 8,462.07 | 11,709.31 | 17,576.62 | 40,560.52 | 16,514.34 | 38.4% |
| 600 A | 10,154.49 | 14,051.16 | 21,091.94 | 48,672.62 | 19,841.21 | 38.4% |
| 700 A | 11,846.90 | 16,393.02 | 24,607.26 | 56,784.71 | 23,148.06 | 38.4% |
| 800 A | 13,539.32 | 18,734.90 | 28,122.60 | 64,896.86 | 26,454.98 | 38.4% |
| 900 A | 15,231.73 | 21,076.75 | 31,637.92 | 73,008.95 | 29,761.83 | 38.4% |
| 1000 A | 16,924.15 | 23,418.61 | 35,153.24 | 81,121.05 | 33,068.70 | 38.4% |
| 1100 A | | 25,760.47 | 38,668.57 | 89,179.25 | 36,321.66 | 38.4% |
| 1200 A | | 28,102.33 | 42,183.88 | 97,286.58 | 39,623.75 | 38.4% |

# Proposed Impact Fees

| | Proposed 120/208 Volt | Proposed 277/480 Volt | Dollar Adjustment | Percent Adjustment |
|---|---|---|---|---|
| 1300 A | 45,699.20 | 105,393.91 | 42,925.91 | 38.4% |
| 1400 A | 49,214.53 | 113,501.24 | 46,227.94 | 38.4% |
| 1500 A | 52,729.85 | 121,608.57 | 49,530.04 | 38.4% |
| 1600 A | 56,245.18 | 129,714.52 | 52,830.75 | 38.4% |
| 1700 A | 59,760.51 | 137,821.85 | 56,132.85 | 38.4% |
| 1800 A | 63,275.83 | 145,929.18 | 59,434.94 | 38.4% |
| 1900 A | 66,791.16 | 154,036.51 | 62,737.04 | 38.4% |
| 2000 A | 70,306.47 | 162,143.84 | 66,039.13 | 38.4% |
| 2500 A | 87,883.10 | 202,680.49 | 82,549.60 | 38.4% |
| 3000 A | 105,459.71 | 243,217.14 | 99,060.08 | 38.4% |

# Survey of Impact Charges

| | Description / Panel Rating | Other Municipals & Co-ops | | | | | |
|---|---|---|---|---|---|---|---|
| | | St. George | Santa Clara City | Hurricane City (3) | Dixie Power | Heber City (5) | Average |
| | | (c) | (d) | (f) | (f) | (g) | (h) |
| | **Residential (120/240. 1 phase)** | | | | | | |
| 1 | 200 Amp | 4,809 | 3,798 | 1,946 | 3,950 | 4,684 | 3,837 |
| 2 | 400 Amp | 8,244 | 7,596 | 3,892 | 6,900 | 9,367 | 7,200 |
| | **Commercial (120/240. 1 phase)** | | | | | | |
| 3 | 200 Amp | 6,529 | 4,185 | 3,676 | 3,950 | 4,684 | 4,605 |
| 4 | 400 Amp | 13,058 | 8,370 | 7,352 | 7,900 | 9,367 | 9,209 |
| 5 | 600 Amp | 19,587 | 12,554 | 11,028 | 9,850 | 14,051 | 13,414 |
| | **Commercial (200Y/120V. 3 phase)** | | | | | | |
| 6 | 200 Amp | 13,068 | 6,282 | 5,518 | 6,666 | 7,031 | 7,713 |
| 7 | 400 Amp | 26,136 | 12,563 | 11,036 | 11,850 | 14,061 | 15,129 |
| 8 | 600 Amp | 39,204 | 18,845 | 16,555 | 17,775 | 21,092 | 22,694 |
| | **Commercial (480Y/277V. 3 phase)** | | | | | | |
| 9 | 200 Amp | 30,157 | 14,496 | 12,734 | 15,386 | 16,224 | 17,799 |
| 10 | 400 Amp | 60,315 | 28,992 | 25,468 | 27,354 | 32,448 | 34,915 |
| 11 | 800 Amp | 120,629 | 57,985 | 38,202 | 54,708 | 64,897 | 67,284 |
| 12 | 1200 Amp | 180,944 | 86,977 | 76,406 | 82,061 | 97,287 | 104,735 |

Transformer Loading based on Non Coincident Peaks

*Engineer recommends that transformer not be regulary loaded above 50% of Maximum Transformer Rating for redundancy and to preserve transformer life

KVA divided by KW

Without Capital Improvements

| Substation Transformer | 2021 | | | Transformer Load at 100% PF ---------- Actual Power Factor | KW Rating ---------- Current Loading ---------- Optimal Loading* | Base Transformer Rating (kW) | Mid Transformer Rating (kW) | Max (Total) Transformer Rating (kW) --------- NCP KW ---------- Optimal Load (50% of MAX) | % of Optimal* Transformer Loading | KW above(+) or Below (-) Optimal Transformer Capacity | Substation Transformer | 2025 | | | Transformer Load at 100% PF ---------- Actual Power Factor | KW Rating ---------- Current Loading ---------- Optimal Loading* | Base Transformer Rating (kW) | Mid Transformer Rating (kW) | Max (Total) Transformer Rating (kW) --------- NCP KW ---------- Optimal Load (50% of MAX) | % of Optimal* Transformer Loading | KW above(+) or Below (-) Optimal Transformer Capacity | 2021 Load KW above (+) or below (-) Max Transformer Capacity | 2022 Load KW above (+) or below (-) Max Transformer Capacity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NCP kW | %Base | %Total | | | kW | kW | kW | | | | NCP kW | %Base | %Total | | | kW | kW | kW | | | | |
| Midway Transformer | | | | 8330.612245 | KW | **10000** | 12500 | **14000** | | | Midway Transformer | | | | 12,954 | KW | 10,000 | 12,500 | 14,000 | | | | |
| 10/12.5/14 MVA | 8,164 | 83% | 58% | | Current Loading | **8164.00** | | **8164** | | | 10/12.5/14 MVA | 12,954 | 130% | 93% | | Current Loading | 12,954 | | 12,954 | | | | |
| 46 kV – 12.47 kV | | | | 98% | Optimal Loading* | | | 6860 | 119% | 1,304 | 46 kV – 12.47 kV | | | | 100% | Optimal Loading* | | | 7,000 | 185% | 5,954 | 6,094 | 5,954 |
| Provo River 5 MVA (with fans) | | | | 5535.353535 | KW | 5000.00 | | 5000 | | | Provo River (2)12/16/20 MVA | | | | 8,034 | KW | 12,000 | | 20,000 | | | | |
| | 5,480 | 111% | 100% | | Current Loading | 5480.00 | | 5480 | | | | 8,034 | 67% | 40% | | Current Loading | | | 8,034 | | 5221.00 | | |
| 46 kV – 12.47 kV | | | | 99% | Optimal Loading* | | | 2475.00 | 221% | 3005 | 46 kV – 12.47 kV | | | | 100% | Optimal Loading* | | | 10,000 | 80% | -1966 | 5,559 | (1,966) |
| Heber T1 | | | | 8174.468085 | KW | 12000 | 16000 | 20000 | | | Heber T1 | | | | 10,096 | KW | 12,000 | 16,000 | 20,000 | | | | |
| 12/16/20 MVA | 7,684 | 68% | 38% | | Current Loading | 7684.00 | | 7223 | | | 12/16/20 MVA | 9,591 | 84% | 48% | | Current Loading | 9,591 | | 11,363 | | | | |
| 46 kV – 12.47 kV | | | | 94% | Optimal Loading* | | | 9400 | 77% | (2,177) | 46 kV – 12.47 kV | | | | 95% | Optimal Loading* | | | 9,500 | 120% | 1,863 | 191 | 1,863 |
| Heber T2 | | | | 9480 | KW | 12000 | 16000 | 20000 | | | Heber T2 | | | | 16,031 | KW | 12,000 | 16,000 | 20,000 | | | | |
| 12/16/20 MVA | 9,444 | 80% | 47% | | Current Loading | 9444 | | 9255 | | | 12/16/20 MVA | 16,031 | 134% | 80% | | Current Loading | 16,031 | | 16,031 | | | | |
| 46 kV – 12.47 kV | | | | 98% | Optimal Loading* | | | 9800 | 94% | (545) | 46 kV – 12.47 kV | | | | 100% | Optimal Loading* | | | 10,000 | 160% | 6,031 | 6,231 | 6,031 |
| Cloyes | | | | 5475 | KW | 7500 | | 9375 | | | Cloyes | | | | 6,349 | KW | 7,500 | | 9,375 | | | | |
| 7.5/9.375 MVA | 6,032 | 86% | 64% | | Current Loading | 6032 | | 5610 | | | 7.5/9.375 MVA | 6,032 | 85% | 64% | | Current Loading | 6,032 | | 6,032 | | | | |
| 46 kV – 4.16 kV | | | | 93% | Optimal Loading* | | | 4359 | 129% | 1,250 | 46 kV – 4.16 kV | | | | 95% | Optimal Loading* | | | 4,453 | 135% | 1,579 | 1,673 | 1579 |
| Jailhouse T1 | | | | 6900 | KW | 10000 | 12500 | 14000 | | | Jailhouse T1 | | | | 13,408 | KW | 10,000 | 12,500 | 14,000 | | | | |
| 10/12.5/14 MVA | 6,789 | 69% | 48% | | Current Loading | 6789 | | 6789 | | | 10/12.5/14 MVA | 13,408 | 134% | 96% | | Current Loading | 13,408 | | 13,408 | | | | |
| 46 kV – 12.47 kV | | | | 99% | Optimal Loading* | | | 6930 | 98% | (141) | 46 kV – 12.47 kV | | | | 100% | Optimal Loading* | | | 7,000 | 192% | 6,408 | 6,478 | 6408 |
| Jailhouse T2 | | | | 10200 | KW | 12000 | 16000 | 20000 | | | Jailhouse T2 | | | | 11,770 | KW | 12,000 | 16,000 | 20,000 | | | | |
| 12/16/20 MVA | 9,944 | 85% | 50% | | Current Loading | 9944 | | 9944 | | | 12/16/20 MVA | 11,652 | 98% | 58% | | Current Loading | 11,652 | | 11,652 | | | | |
| 46 kV – 12.47 kV | | | | 97% | Optimal Loading* | | | 9700 | 103% | 244 | 46 kV – 12.47 kV | | | | 99% | Optimal Loading* | | | 9,900 | 118% | 1,752 | 1,952 | 1752 |
| College (2) 12/16/20 MVA | | | | 1440 | KW | 12000 | 16000 | 20000 | | | College (2) 12/16/120 MVA | | | | 8,238 | KW | 12,000 | 16,000 | 20,000 | | | | |
| | 1394 | 12% | 7% | | Current Loading | 1394 | | 1394 | | | | 8073.61 | 69% | 40% | | Current Loading | 8,074 | | 8,073 | | | | |
| 46 kV – 12.47 kV | | | | 97% | Optimal Loading* | | | 10000 | | | 46 kV – 12.47 kV | | | | 98% | Optimal Loading* | | | 9,800 | 82% | (1,727) | -1,926 | -1727 |
| East Substation | | | | 0 | KW | 12000 | 16000 | 20000 | | | East Substation | | | | - | KW | 12,000 | 16,000 | 20,000 | | | | |
| (2) 12/16/120 MVA | 0 | 0% | 0% | | Current Loading | | | | | | (2) 12/16/120 MVA | 0 | 0% | 0% | | Current Loading | - | | - | | | | |
| 46 kV – 12.47 kV | | | | 0% | Optimal Loading* | | | | | | 46 kV – 12.47 kV | | | | 0% | Optimal Loading* | | | 10,000 | 0% | (10,000) | | (10,000) |
| Total City | 54,931 | | | | KW | 63500.00 | 73000.00 | 97375.00 | | | Total City | | | | 89,260 | KW | 87,500 | 89,000 | 117,375 | | | 26,251 | 9,893 |
| Not including College | | 87% | 56% | 97% | Current Loading | 54931.00 | 0.00 | 53858.84 | | | including College & East | 85,775 | 102% | 73% | 98% | Current Loading | 77,741 | - | 84,427 | | 29173 (above optimal at 2021 transformer cap) | NCP KW above optimal loading of existing 2021 Capacity | KW above optimal loading of 2025 Capacity |
| | | | | | Optimal Loading* | | | 59524.38 | 90% | (5,666) | | | | | | Optimal Loading* | | | 59,624 | 142% | 9,893 | 30,844 | |

30,844

## Proposed Improvements

Proposed system improvements are summarized in the following tables. A brief description and explanation of each improvement are given. Project numbers match system maps that show proposed improvements.

| Proposed System Improvements | | | | |
|---|---|---|---|---|
| **Proposed Improvement** | **Reason/Explanation** | Approximate Cost | Approximate Time Frame | Added Capacity |
| 1. Install new 2nd point of interconnection Substation. | Heber needs a second point of interconnection substation with PacifiCorp in order to keep up with load growth. The single point of interconnection that they have now is not large enough to accommodate future load growth. New substation will include a 60/80/100/112 MVA 138 kV to 46 kV transformer with room for a future transformer. | $15,336,985 | 2021-2023 | 100 MVA |
| 2. Install a new distribution substation located at the new 2nd point of interconnection. | Provo River transformer is out of capacity according to nameplate rating during peak load when Snake Creek Hydro generation is off. Transformer fans have been added that are not reflected on the nameplate which increases the transformer capacity, but it is unknown by how much.<br><br>During an outage of Midway transformer the Provo River transformer needs to have more capacity in order to be able to restore power to MW101 and MW102 circuits.<br><br>It is proposed to replace the Provo River substation with a new substation located at the 2nd point of interconnection. Substation will include (2) 12/16/20 MVA transformers. | $4,964,466 | 2021-2023 | 13 MVA |
| 3. Rebuild the 46 kV front end of Midway substation. | The 46 kV front end of Midway substation is in need of an upgrade. A new switchrack with (4) 46 kV breakers will be installed. | $2,655,926 | 2024 | 0 MVA |
| 4. Demolition of Provo River Substation | Provo River substation is not large enough to be able to keep up with future load growth. It is being replaced by a new substation located at the 2nd PacifiCorp interconnection. Provo River substation has reached end of life and will be demolished. | $70,920 | 2023 | Needed as part of project 2 |
| 5. Rebuild 46 kV line from Jailhouse tap to Jailhouse. Line should be built at 138 kV, but energized at 46 kV. | In order to accommodate a new substation in the east part of Heber the 46 kV line from Jailhouse tap to Jailhouse needs to be rebuilt. The line should be built at 138 kV, but energized at 46 kV. | $1,248,298 | 2024 | Needed as part of project 7 |

| Proposed System Improvements | | | | |
|---|---|---|---|---|
| **Proposed Improvement** | **Reason/Explanation** | Approximate Cost | Approximate Time Frame | Added Capacity |
| 6. New 46 kV line from Jailhouse to new substation in the east of Heber.<br>Line should be built at 138 kV, but energized at 46 kV. | In order to accommodate a new substation in the east part of Heber a new 46 kV line from Jailhouse to the new substation needs to be built. The line should be built at 138 kV, but energized at 46 kV. | $2,010,606 | 2024 | Needed as part of project 7 |
| 7. Install a new substation in the east part of Heber. | A new substation in the east part of Heber is required to be built due to load growth. The new substation should include (2) 12/16/20 MVA transformers. | $5,771,942 | 2026 | 18 MVA |
| 8. Install double circuit 12.47 kV underbuild on existing 46 kV transmission. | It is necessary to install double circuit 12.47 kV underbuild on existing 46 kV transmission in order to get two circuits from the new distribution substation located at the new 2nd point of interconnection over to the area currently fed by Provo River substation. The new substation will feed the Provo River circuits since Provo River substation is being taken out of service and demolished. | $654,525 | 2022 | Needed as part of project 2 |
| 9. Rebuild part of PR201 circuit with 477 ACSR conductor. | During an outage of the Midway transformer, upgrades to PR201 circuit are needed to be able to restore power to MW101 and MW102 circuits. This upgrade will improve capacity and help reduce voltage drop.<br><br>It is proposed to upgrade PR201 from Provo River substation to approximately 600 East Main Street. Existing conductor is 4/0 ACSR and it is proposed to upgrade to 477 ACSR. | $325,943 | 2022 | 6.4 MVA |
| 10. Rebuild part of PR201 circuit with 477 ACSR conductor. | When Snake Creek Hydro generation is off, part of the PR201 main trunk line is overloaded during peak load.<br><br>During an outage of the Midway transformer, upgrades to PR201 circuit are needed to be able to restore power to MW101 and MW102 circuits. This upgrade will improve capacity and help reduce voltage drop.<br><br>It is proposed to upgrade PR201 along River Road from Main Street to 300 North and from 700 North to Burgi Lane. Existing conductor is #2 ACSR and it is proposed to upgrade to 477 ACSR. | $444,969 | 2022 | 9.5 MVA |

| Proposed System Improvements | | | | |
|---|---|---|---|---|
| **Proposed Improvement** | **Reason/Explanation** | Approximate Cost | Approximate Time Frame | Added Capacity |
| 11. Rebuild part of CL402 circuit with 477 ACSR conductor. | During an outage of the Midway transformer, upgrades to circuit CL402 are needed so that circuit CL402 can be used to restore power to circuit MW104.<br><br>During an outage of the Cloyes transformer, upgrades to circuit CL402 are needed so that circuit HB303 can be used to restore power to circuit CL402.<br><br>It is proposed to upgrade CL402 from Cloyes substation to Tate Lane Hwy 113, from 1900 South Casperville Road to 2400 South 2650 West and from 600 West 800 South to 600 West 1000 South. Existing conductor is #2 ACSR and it is proposed to upgrade to 477 ACSR. | $1,296,001 | 2025 | 9.5 MVA |
| 12. Rebuild part of MW101 and MW102 circuits with 477 ACSR conductor. | During an outage of the Provo River transformer, upgrades to circuit MW101 are needed so that circuit MW101 can be used to restore power to circuit PR201.<br><br>It is proposed to upgrade MW101 from Midway substation to Main Street Center Street. Existing conductor is 4/0 ACSR and it is proposed to upgrade to 477 ACSR.<br><br>It is proposed to upgrade MW101 and MW102 circuits from 220 W Main Street to 300 East Main Street. Existing conductor is 4/0 ACSR and it is proposed to upgrade to 477 ACSR.<br><br>It is proposed to upgrade MW102 circuit from 300 W Main Street to 200 N 300 W. Existing conductor is 4/0 ACSR and it is proposed to upgrade to 477 ACSR. | $938,108 | 2025 | 6.4 MVA |
| 13. Install a 1 MW Battery System in the Timber Lakes area. | Model shows voltage issues at the end of JH502 circuit during peak load (4% drop).<br><br>It is proposed to install a 1 MW Battery System on JH502 circuit in the Timber Lakes area. Battery will help support voltage by reducing current flow on JH502 during peak load. | $1,000,000 *No cost estimate developed. Cost was estimated by Heber City Light & Power. | 2022 | 1 MW |

| Proposed System Improvements | | | | |
|---|---|---|---|---|
| **Proposed Improvement** | **Reason/Explanation** | Approximate Cost | Approximate Time Frame | Added Capacity |
| 14. Rebuild part of HB305 circuit with 477 ACSR conductor. | During an outage of Heber T1 transformer, upgrades to circuit HB305 are needed so that circuit HB305 can be used to restore power to circuit HB303.<br><br>It is proposed to upgrade HB305 circuit from 600 W 200 S to 600 W 300 S. Existing conductor is #2 ACSR and it is proposed to upgrade to 477 ACSR. | $67,262 | 2022 | 9.5 MVA |
| 15. Rebuild part of JH502 and JH503 circuits with 1100 kcmil. | During an outage of Jailhouse T2 transformer, upgrades to circuits JH502 and JH503 are needed so that circuit JH503 can be used to restore power to half of circuit JH502. Power to the other half of JH502 circuit can be restored by circuit HB304.<br><br>It is proposed to upgrade JH502 and JH503 circuits from 800 South Old Mill Drive to 2200 South Old Mill Drive Mill Drive. Existing conductor is #2 underground cable and it is proposed to upgrade to 1100 kcmil underground cable. | $528,958 | 2026 | 8.1 MVA |
| 16. Install CO703 and CO704 circuits. | Install College substation circuits CO703 and CO704. The circuits are going to be needed to in order to support load growth. This project gets the circuits ready to use. Developers will extend the circuits as necessary as load is added to them. | $203,514 | 2024 | 12.9 MVA |
| 17. Install underground line on circuit CO701. | Install underground line on circuit CO701. This is new underground line is necessary to feed additional load on the CO701 circuit. | $1,349,869 | 2023 | 12.9 MVA |
| | **Total** | $38,868,292 | | |

# Heber Light & Power - Five Year Forecast and Capital Improvement Plan

**Project Status** **Added Capacity**

| Upcoming Projects | | | Impact Fee Related % | Projected Cost ($1,000) Total | Impact Fee | Prior | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Buildings* | | | | | | | | | | | | | |
| Partial Completion | N/A | Generator Fire Suppression System | 0% | $ 2,515 | $ - | 376 | 291 | 498 | 684 | 666 | - | - | M |
| Ongoing | N/A | New Office Building | 0% | $ 8,423 | $ - | 113 | 300 | 8,010 | - | - | - | - | M |
| Fall - 2021 Completion | N/A | EV Charging Systems | 0% | $ 130 | $ - | - | 130 | - | - | - | - | - | M |
| Partner Driven Hold | N/A | Millflat Water Line Replacement | 0% | $ 50 | $ - | - | 50 | - | - | - | - | - | H |
| Completed | N/A | Plant 2 Switchgear Room AC Unit | 0% | $ 18 | $ - | - | 18 | - | - | - | - | - | M |
| Ongoing | N/A | Gas Plant Security Measures | 0% | $ 55 | $ - | - | 55 | - | - | - | - | - | M |
| 2021 Portion Complete | N/A | Plant HVAC Upgrades | 0% | $ 327 | $ - | - | 85 | 74 | 84 | 84 | - | - | H |
| Not Started | N/A | Plant 1 Electrical Backroom Upgrades | 0% | $ 50 | $ - | - | 50 | - | - | - | - | - | M |
| | | | | *$ 11,568* | *$ -* | *489* | *979* | *8,582* | *768* | *750* | - | - | |
| *Generation* | | | | | | | | | | | | | |
| Ongoing | N/A | Annual Generation Capital Improvements | 0% | $ 350 | $ - | - | 50 | 50 | 50 | 200 | - | - | H |
| Ongoing | N/A | Lower Snake Creek Plant Upgrade | 0% | $ 35 | $ - | - | 15 | 5 | 5 | 5 | 5 | - | M |
| Ongoing | N/A | Upper Snake Creek Capital Improvements | 0% | $ 25 | $ - | - | 5 | 5 | 5 | 5 | 5 | - | M |
| Ongoing | N/A | Lake Creek Capital Improvements | 0% | $ 30 | $ - | - | 5 | 5 | 5 | 15 | 5 | - | M |
| 2021 Completed | (2.3MW, 1MW) | New Generation (Battery, Engine) | 0% | $ 4,830 | $ - | - | 1,000 | 1,315 | - | 1,215 | 1,300 | - | M |
| Ongoing | N/A | Unit Overhauls | 0% | $ 459 | $ - | - | - | 188 | 83 | 188 | - | - | M |
| Planning | N/A | Gas Plant 1 XFMR Upgrade | 0% | $ 500 | $ - | - | - | - | - | 500 | - | - | L |
| Planning | N/A | Gas Plant 2 XFMR Upgrade | 0% | $ 500 | $ - | - | - | - | - | - | 500 | - | L |
| 2022 scheduled | N/A | Gas Plant 3 Switchgear Upgrade | 0% | $ 280 | $ - | 100 | - | 180 | - | - | - | - | L |
| Planning | N/A | Lake Creek Bearing Replacement | 0% | $ 10 | $ - | - | - | - | - | - | 10 | - | L |
| Waiting on DAQ | N/A | Gas Plant Exhaust Compliance (WO 10813) | 0% | $ 300 | $ - | - | - | 300 | - | - | - | - | M |
| Completed | N/A | Unit 8 Jacket Heater (WO 10017) | 0% | $ 8 | $ - | - | 8 | - | - | - | - | - | M |
| August 2021 Completed | N/A | Unit 8 Generator Replacement (WO 10843) | 0% | $ 178 | $ - | - | 178 | - | - | - | - | - | H |
| Pushing to 2022 | N/A | Lake Creek Breaker Replacement (WO 10016) | 100% | $ 75 | $ 75 | - | 75 | - | - | - | - | - | M |
| Partner Decision Pend | N/A | Mobile Standby Generator | 0% | $ 66 | $ - | - | - | 66 | - | - | - | - | H |
| | | | | *$ 7,646* | *$ 75* | *100* | *1,336* | *2,114* | *148* | *2,128* | *1,825* | - | |
| *Lines* | | | | | | | | | | | | | |
| October 2021 Complete | 0 MVA | Cross Valley Transmission Line (2nd POI) | 100% | $ 6,819 | $ 6,819 | 2,864 | 3,300 | 655 | - | - | - | - | H |
| Ongoing | 0 MVA | Underground System Improvements | 0% | $ 756 | $ - | 6 | 150 | 150 | 150 | 150 | 150 | - | L |
| Ongoing | 0 MVA | Aged & Environmental Distribution Replacement/Upgrade | 0% | $ 900 | $ - | 150 | 150 | 150 | 150 | 150 | 150 | - | L |
| Ongoing | 0 MVA | Fault Indicator - Underground System | 0% | $ 50 | $ - | - | 10 | 10 | 10 | 10 | 10 | - | L |
| Planning | 15.9 MVA | Rebuild PR201_Main Street to Burgi Lane | 100% | $ 771 | $ 771 | - | - | 771 | - | - | - | - | H |
| Partial / Planning | 25 MVA | Additional Circuits out of Jailhouse to the East | 100% | $ 560 | $ 560 | 280 | - | 140 | 140 | - | - | - | H |
| Planning | 25.8 MVA | Additional Circuits out of College to South and East | 100% | $ 1,554 | $ 1,554 | - | - | - | 1,350 | 204 | - | - | H |
| Planning | 0 MVA | Install Voltage Regulators at Timber Lakes Gate | 100% | $ 100 | $ 100 | - | - | 100 | - | - | - | - | M |
| Planning | 25 MVA | Heber Substation Additional Circuits (South & West) | 100% | $ 280 | $ 280 | - | - | 280 | - | - | - | - | M |
| Planning | 9.5 MVA | Reconductor HB305_600 West - Substation to 300 South | 100% | $ 67 | $ 67 | - | - | 67 | - | - | - | - | H |
| Planning | 0 MVA | Midway Substation - Get Aways | 50% | $ 160 | $ 80 | - | - | - | 160 | - | - | - | H |
| Planning | 5 MVA | Load to Parsons (Reconductor) | 0% | $ 100 | $ - | - | - | - | 100 | - | - | - | L |
| Planning | 9.5 MVA | Reconductor Heber City Main 600 S to 1000 S | 100% | $ 100 | $ 100 | - | - | - | 100 | - | - | - | L |
| Planning | 0 MVA | Jailhouse Tap Transmission Line and East Extension | 100% | $ 3,259 | $ 3,259 | - | - | - | - | 3,259 | - | - | L |
| Planning | 8 MVA | Reconductor Pine Canyon Road - Midway | 60% | $ 180 | $ 108 | - | - | - | - | 180 | - | - | H |
| Planning | 8.1 MVA | Reconductor JH502/503_Old Mill Drive - 800 South to 1200 South | 100% | $ - | $ - | - | - | - | - | - | - | 529 | L |
| Planning | 6.4 MVA | Reconductor MW101/102 from 4/0 to 477 | 100% | $ 938 | $ 938 | - | - | - | - | - | 938 | - | L |
| Planning | 9.5 MVA | Rebuild CL402_600 West to Tate Lane | 100% | $ 1,296 | $ 1,296 | - | - | - | - | - | 1,296 | - | L |
| Completed | 0 MVA | Holmes Homes Subdivision Asset Purchase | 100% | $ 150 | $ 150 | - | 150 | - | - | - | - | - | H |
| Design/Contractor Queue | 9.5 MVA | New Circuit to Hwy 32 | 100% | $ 720 | $ 720 | - | 720 | - | - | - | - | - | H |
| Planning | 5 MVA | Tie line from 305 to 402 to 303 | 100% | $ - | $ - | - | - | - | - | - | - | - | M |
| Customer Driven | 5 MVA | Tie from 702 up to 500 East in Heber (HB304) | 100% | $ - | $ - | - | - | - | - | - | - | - | H |
| | | | | *$ 18,760* | *$ 16,802* | *3,300* | *4,480* | *2,323* | *2,160* | *3,953* | *2,544* | *529* | |
| *Substation* | | | | | | | | | | | | | |
| Design - Summer 2022 | 100 MVA | 2nd Point of Interconnect Substation | 70% | $ 15,337 | $ 3,000 | 2,432 | 2,605 | 10,300 | - | - | - | - | H |
| Ongoing | 0 | Replacement Recloser for Joslyn Reclosers | 0% | $ 100 | $ - | 75 | 25 | - | - | - | - | - | L |
| Ongoing | 0 | Substation Bird Guard | 0% | $ 15 | $ - | 6 | 6 | 3 | - | - | - | - | H |
| Planning | 18 MVA | East Substation | 100% | $ 750 | $ 750 | - | 750 | - | - | - | - | 5,772 | M |
| Planning | 0 | Cloyes LTC Rebuild | 0% | $ 40 | $ - | - | - | - | - | 40 | - | - | M |
| Design - Summer 2022 | 13 MVA | Provo River Substation Rebuild | 100% | $ 5,035 | $ 5,035 | - | - | 4,964 | 71 | - | - | - | M |
| CY2022 | 0 | Battery Replacement Program | 0% | $ 29 | $ - | | - | 10 | - | 19 | 8 | - | L |
| Planning | 0 | Midway Substation - High Side Rebuild | 90% | $ 2,656 | $ 2,390 | - | - | - | - | 2,656 | - | - | L |
| Planning | 0 | Heber Relay Upgrade | 0% | $ 25 | $ - | - | - | - | - | 25 | - | - | L |
| Planning | 0 | Jailhouse Lease Buyout or Extension | 0% | $ 100 | $ - | - | - | 100 | - | - | - | - | L |
| Planning | 0 | Jailhouse Fence Replacement | 0% | $ 129 | $ - | - | - | - | - | - | 129 | - | M |
| | | | | *$ 24,216* | *$ 11,175* | *2,513* | *3,386* | *15,377* | *71* | *2,740* | *137* | *5,772* | |
| *Systems & Technology* | | | | | | | | | | | | | |
| Ongoing | N/A | Annual IT Upgrades | 0% | $ 309 | $ - | - | 124 | 50 | 85 | 50 | 44 | - | M |
| Ongoing | N/A | Annual OT Upgrades | 0% | $ 408 | $ - | - | 318 | 30 | 30 | 30 | 30 | - | M |
| Ongoing | N/A | Fiber Improvements | 0% | $ 110 | $ - | - | 50 | 20 | 20 | 20 | 20 | - | M |
| Ongoing | N/A | Smart Grid Investment | 0% | $ 50 | $ - | - | 10 | 10 | 10 | 10 | 10 | - | M |
| Ongoing | N/A | AMI Tower - North Village | 0% | $ 70 | $ - | - | - | 70 | - | - | - | - | M |
| | | | | *$ 947* | *$ -* | - | *502* | *180* | *145* | *110* | *104* | - | |
| *Tools & Equipment* | | | | | | | | | | | | | |
| Ongoing | N/A | Annual Tool & Equipment Purchases | 0% | $ 235 | $ - | - | *55* | 45 | 45 | 45 | 45 | 45 | M |
| *Vehicle* | | | | | | | | | | | | | |
| Ongoing | N/A | Annual Vehicle Program | 0% | $ 2,360 | $ - | - | 435 | 300 | 170 | 635 | 820 | 500 | M |
| | | | | **$ 65,732** | **$ 28,052** | 6,402 | **11,173** | **28,921** | **3,507** | **10,361** | **5,475** | **6,846** | |

| 2027 - 2031 Forecasted Projects | | |
|---|---|---|
| *Buildings* | | |
| | Generator Plant 4 | |
| *Generation* | | |
| | Unit Overhauls (Multiple Years) | 280 |
| *Lines* | | |
| | Lake Creek to Timberlakes Rebuild/Reconductor | 350 |
| | 3-Phase Extension up Lake Creek Road from Timberlakes Gate | 500 |
| | East Substation Circuit Extension | 400-900 |
| | Cabin Developments Overhead to Underground Conversion | ? |
| *Substation* | | |
| | Battery Replacement Program (Multiple Years) | $8/Year |
| | Cloyes XFMR Upgrade (2028) | 500 |
| | Sorenson Substation (2029) | 6,000 |
| | Gas Plant 2 XFMR Upgrade (2028) | 500 |
| *Systems & Technology* | | |
| | Server Upgrade (2027) | 63 |