



HURRICANE CITY UTAH

Mayor
Nanette Billings

City Manager
Kaden C. DeMille

Power Board
Mac J. Hall, Chair
Dave Imlay, Vice Chair
David Hirschi
Colt Stratton
Kerry Prince
Vacant Seat

Power Board Meeting Agenda

4/2/2025

3:00 PM

Power Department Meeting Room – 526 W 600 N

Notice is hereby given that the Power Board will hold a Regular Meeting in the Power Department Meeting room located at 526 W 600 N, Hurricane, UT. A silent roll call will be taken, along with the Pledge of Allegiance and prayer by invitation.

AGENDA

1. Pledge of Allegiance
2. Prayer

STAFF REPORTS

Brian Anderson/Transmission & Distribution Superintendent
Mike Ramirez/Service Superintendent
Jared Ross/Substation & Generation Foreman

BUDGET

OLD BUSINESS

1. Discussion and possible recommendation for approval to the City Council regarding the **Impact Fee Analysis & Capital Facilities Plan Draft** – Mike Ramirez

NEW BUSINESS

1. UAMPS Updates – Mike Ramirez
2. **Closed Meeting pursuant to Utah Code Section 52-4-205, upon request**

ADJOURNMENT

The above notice was posted to the Hurricane City website, the Utah State Public Notice Website, and at the following locations:

1. Hurricane City Office – 147 North 870 West, Hurricane, UT
2. US Post Office – 1075 West 100 North, Hurricane, UT
3. Washington County Library (Hurricane Branch) – 36 South 300 West, Hurricane, UT



BUDGET

AVERAGE YEARLY POWER PRICES

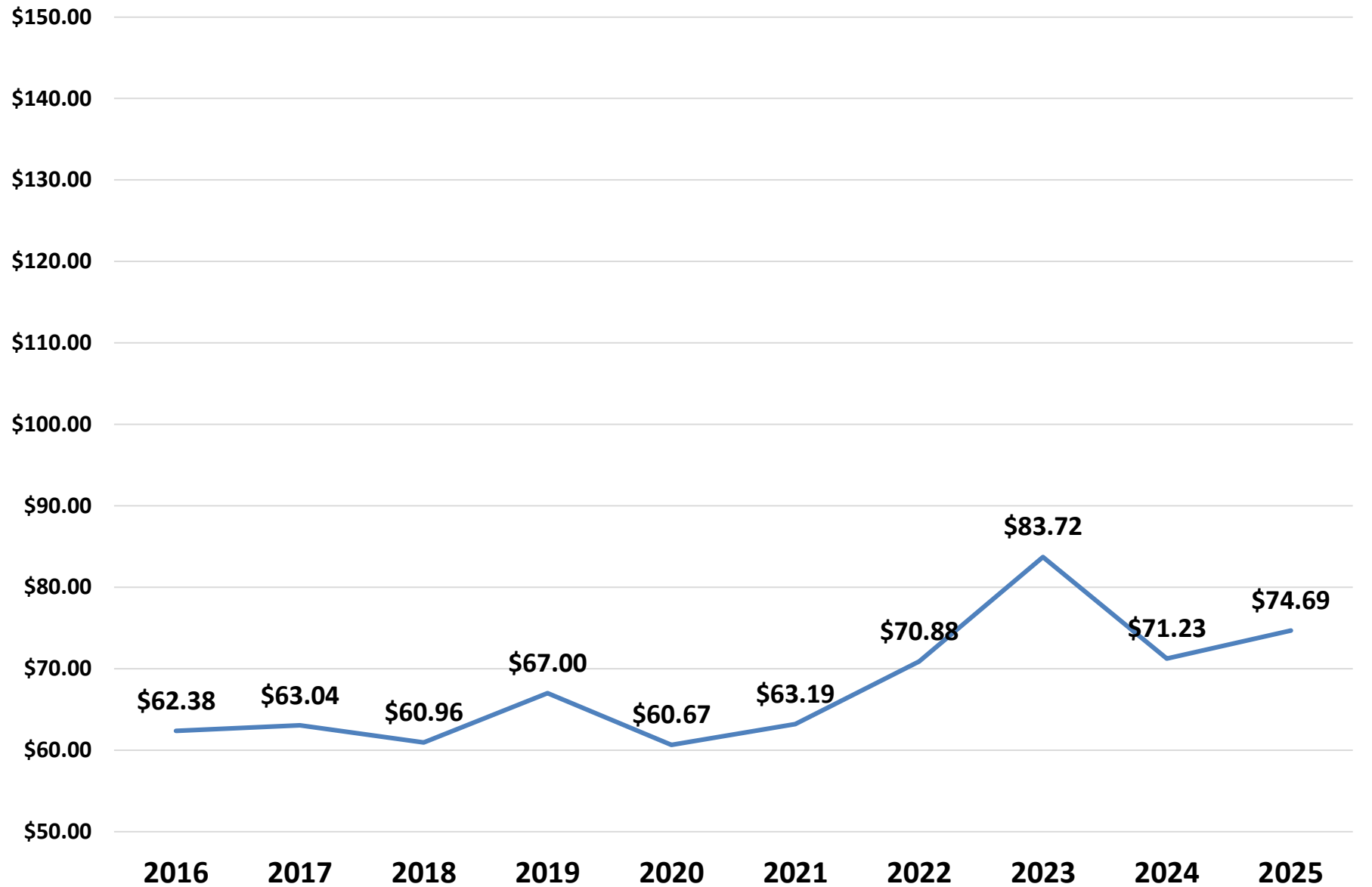
24-25 bdgt amount (thru Jan 2025) **\$71.43**
 BDGT Year to Date **\$71.77**

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<i>Jan</i>	\$57.87	\$59.07	\$60.62	\$59.75	\$57.76	\$60.14	\$68.25	\$132.44	\$80.85	\$73.22
<i>Feb</i>	\$62.38	\$63.04	\$60.96	\$67.00	\$60.67	\$63.19	\$70.88	\$83.72	\$71.23	\$74.69
<i>Mar</i>	\$61.77	\$60.99	\$60.09	\$65.17	\$64.67	\$63.64	\$67.28	\$87.92	\$70.62	
<i>Apr</i>	\$59.71	\$59.49	\$55.02	\$55.44	\$55.92	\$61.86	\$82.63	\$75.32	\$70.32	
<i>May</i>	\$65.51	\$60.32	\$58.86	\$58.55	\$58.55	\$59.69	\$72.66	\$67.45	\$64.54	
<i>June</i>	\$65.51	\$58.54	\$52.17	\$55.30	\$53.44	\$86.91	\$77.60	\$69.52	\$63.88	
<i>Jul</i>	\$56.95	\$58.29	\$67.87	\$54.29	\$55.98	\$81.04	\$85.31	\$90.48	\$70.51	
<i>Aug</i>	\$57.67	\$59.00	\$66.55	\$54.58	\$78.40	\$72.03	\$96.60	\$84.39	\$67.05	
<i>Sep</i>	\$56.97	\$62.36	\$55.00	\$54.34	\$64.93	\$82.38	\$127.29	\$83.74	\$66.46	
<i>Oct</i>	\$59.23	\$59.79	\$59.36	\$59.70	\$62.82	\$75.92	\$83.45	\$83.77	\$75.82	
<i>Nov</i>	\$64.18	\$62.14	\$64.60	\$63.80	\$63.60	\$70.47	\$96.34	\$73.03	\$85.85	
<i>Dec</i>	\$61.51	\$58.80	\$61.61	\$58.55	\$60.33	\$70.07	\$161.27	\$71.99	\$68.50	
<i>Yr Avg</i>	\$60.64	\$60.15	\$60.23	\$58.87	\$61.42	\$70.61	\$90.80	\$83.65	\$71.30	\$73.95
<i>Weighted Avg</i>	\$59.55	\$59.90	\$60.56	\$58.11	\$61.98	\$72.46	\$92.09	\$84.16	\$70.50	\$73.87

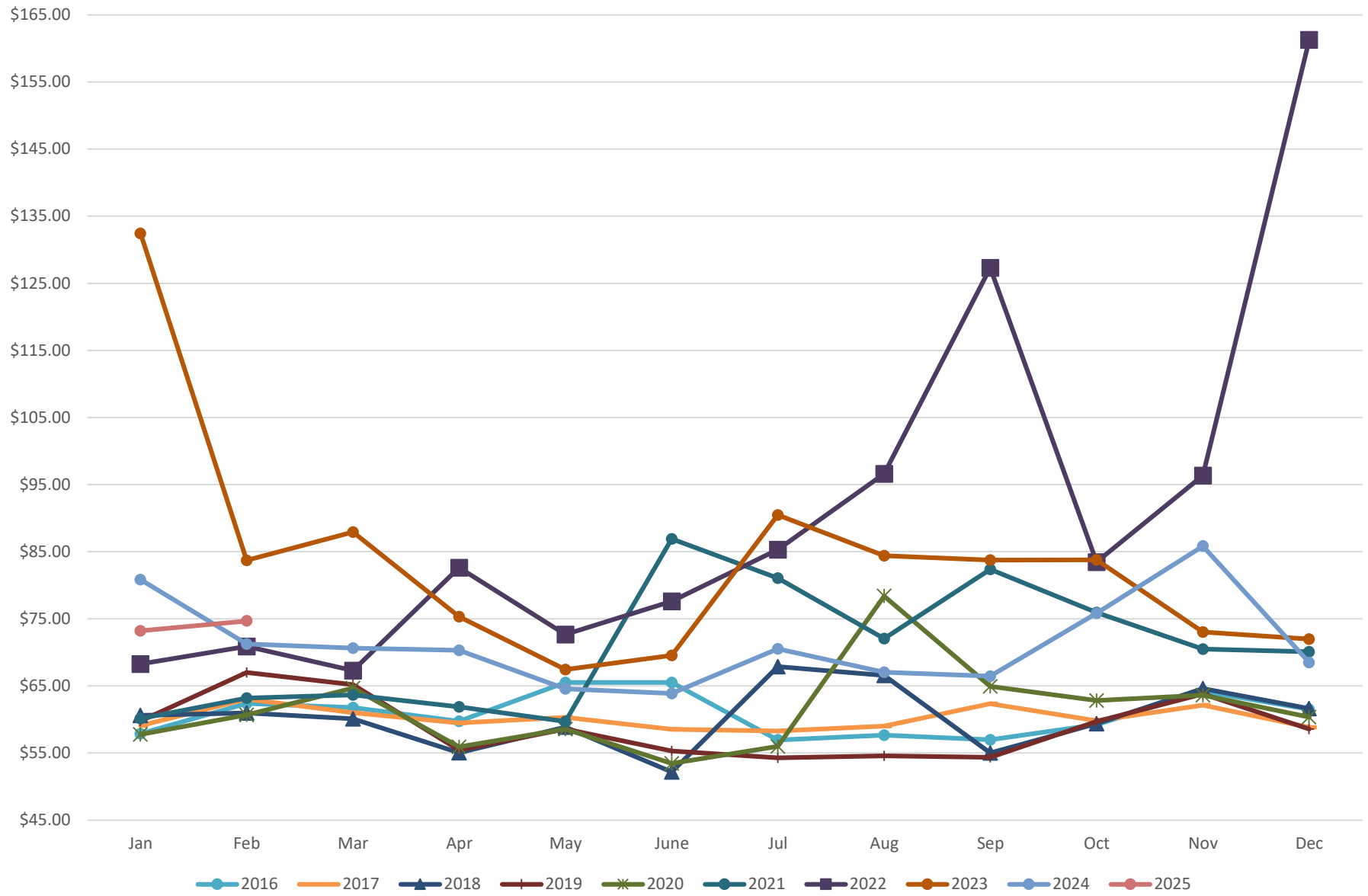
**Cy to
Date**

*These figures capture the total cost of power to the power department.
 The power department uses costs only associated with the purchasing
 and generation of power and includes debt payments and interest*

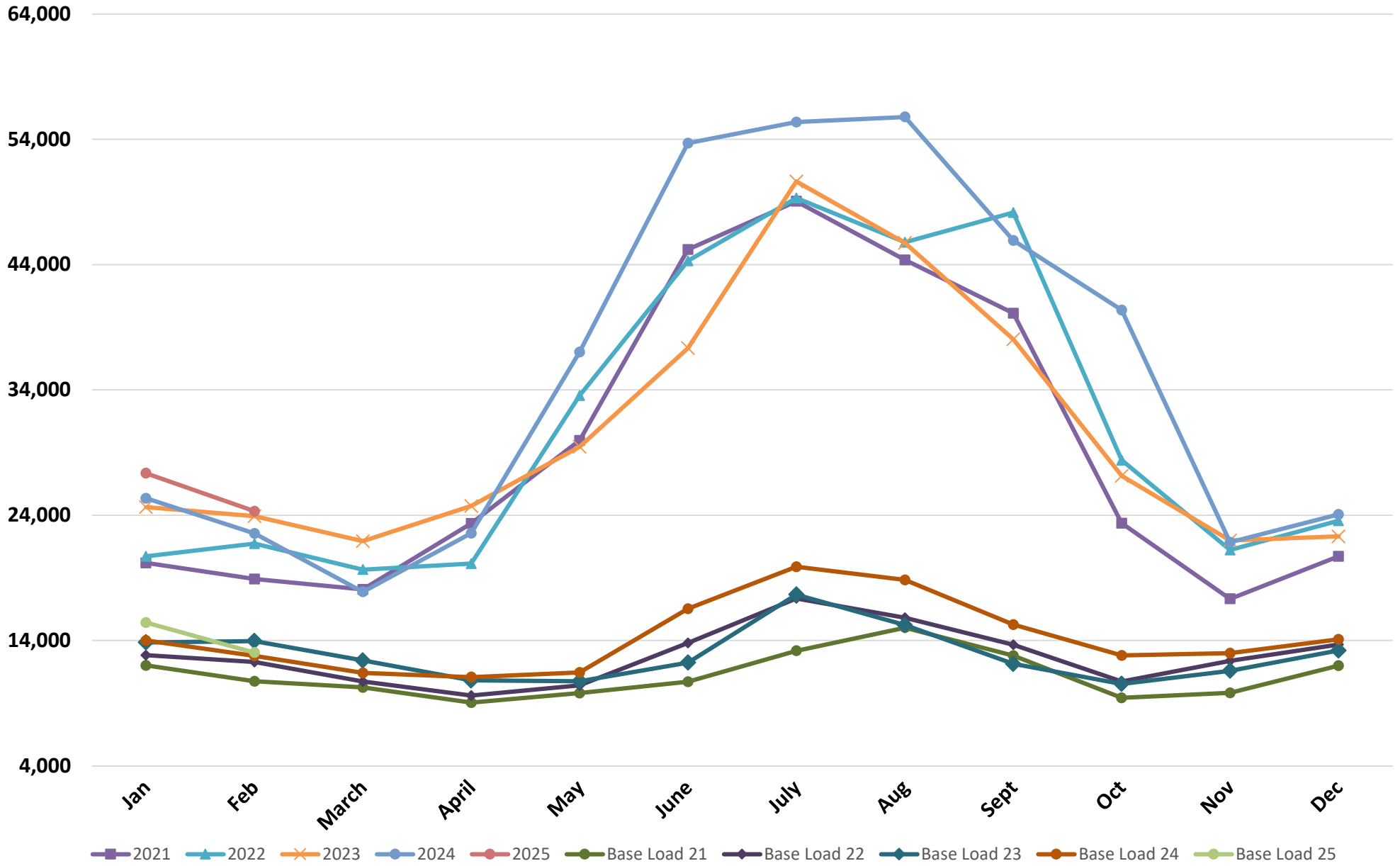
Feb



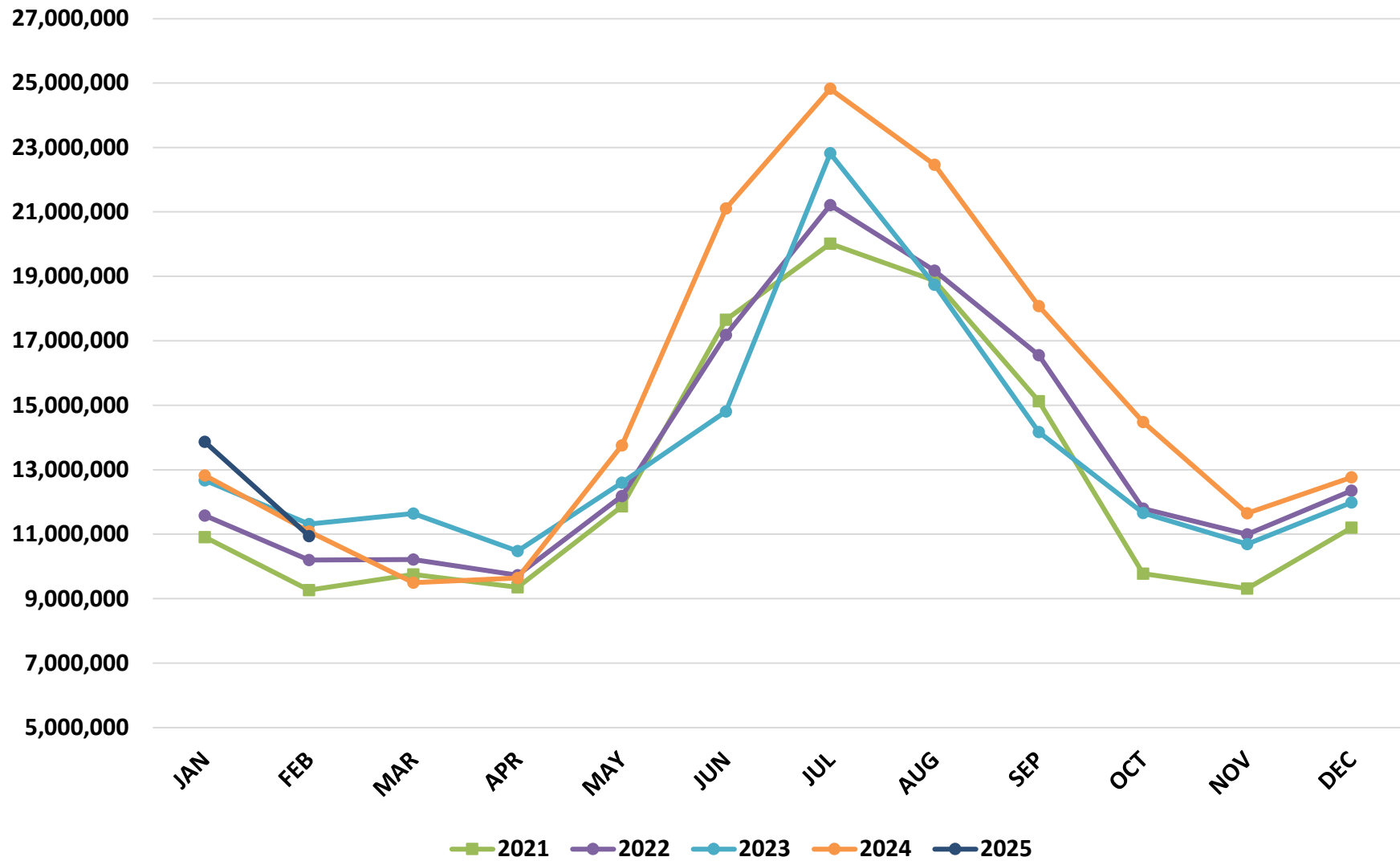
Avg Monthly Price



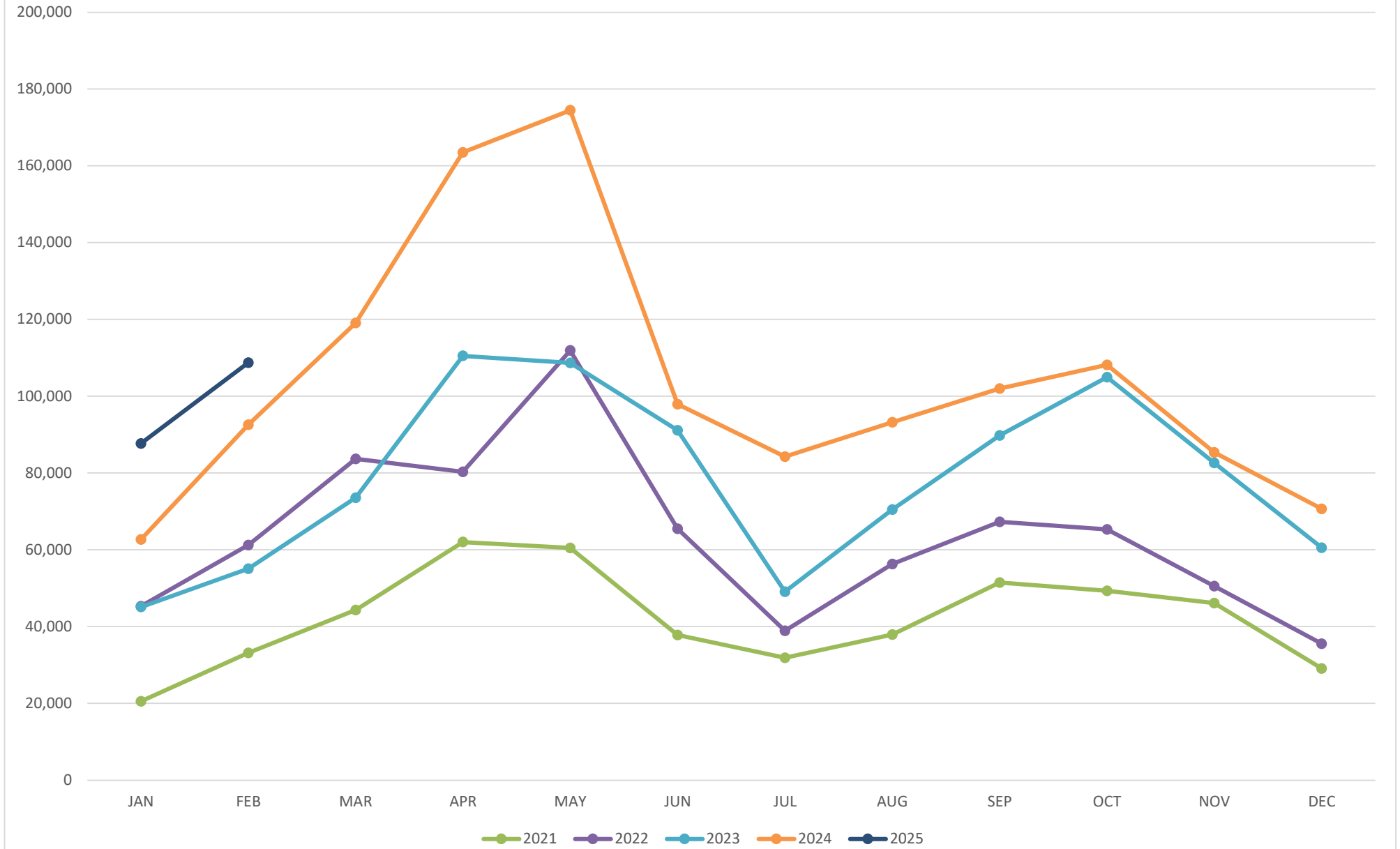
2021 - 2025 KW LOAD



2021 - 2025 KWH LOAD



Solar Kwh





STAFF COMMENTS

Item: Consideration and possible approval of Ordinance 2025-04 Approving a Power Impact Fee Facilities Plan, a Power Impact Fee Analysis, and an Impact Fee for Power on Development

Discussion: Hurricane City collaborated with LRB Public Finance Advisors and Intermountain Consumer Professional Engineers to conduct a new Impact Fee Analysis and develop an Impact Fee Facility Plan. The previous analysis was completed in 2018, when the City Council approved impact fees at 75% of the recommended rate. In November 2022, the Council adjusted the recovery rate to 100% of the 2018 calculation. The latest recommendation proposes a 132% increase in impact fees. The Power Board discussed this item at its last meeting, and the Power Board is expected to make a recommendation on April 2 (the day before the Council's meeting). A public hearing was held on March 20, 2025, with no public comments submitted. For a more detailed summary, refer to page 5 of the Impact Fee Analysis (IFA) document.

Findings:

Recommendation:



PUBLIC
FINANCE
ADVISORS



DRAFT

HURRICANE
UTAH

MARCH
2025

IMPACT FEE ANALYSIS (IFA)

ELECTRICAL TRANSMISSION AND
SUBSTATIONS

PREPARED BY:

LRB PUBLIC FINANCE ADVISORS
FORMERLY LEWIS YOUNG ROBERTSON & BURNINGHAM INC.

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NOTICE
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IMPACT FEE CERTIFICATION

IFA CERTIFICATION

LRB Public Finance Advisors certifies that the attached impact fee analysis:

1. includes only the costs of public facilities that are:
 - a. allowed under the Impact Fees Act; and
 - b. actually incurred; or
 - c. projected to be incurred or encumbered within six years after the day on which each impact fee is paid;
2. does not include:
 - a. costs of operation and maintenance of public facilities;
 - b. costs for qualifying public facilities that will raise the level of service for the facilities, through impact fees, above the level of service that is supported by existing residents;
 - c. an expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and the methodological standards set forth by the federal Office of Management and Budget for federal grant reimbursement;
3. offsets costs with grants or other alternate sources of payment; and,
4. complies in each and every relevant respect with the Impact Fees Act.

LRB Public Finance Advisors makes this certification with the following caveats:

1. All of the recommendations for implementations of the IFFP made in the IFFP documents or in the IFA documents are followed by City Staff and elected officials.
2. If all or a portion of the IFFP or IFA are modified or amended, this certification is no longer valid.
3. All information provided to LRB is assumed to be correct, complete, and accurate. This includes information provided by the City as well as outside sources.

LRB PUBLIC FINANCE ADVISORS



DEFINITIONS

The following acronyms or abbreviations are used in this document:

IFA:	Impact Fee Analysis
IFFP:	Impact Fee Facilities Plan
kVA:	Kilo-volt-amperes
kW:	Kilowatt
LOS:	Level of Service
LRB:	LRB Public Finance Advisors (Formerly Lewis Young Robertson & Burningham, Inc.)
M:	Million
MW:	Megawatt

NOTICE
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SECTION 1: EXECUTIVE SUMMARY

The purpose of the electrical transmission and substation Impact Fee Analysis (“IFA”) is to fulfill the requirements established in Utah Code Title 11 Chapter 36a, the “Impact Fees Act”, and assist Hurricane City (the City) in financing and constructing necessary capital improvements for future growth. This document will address the appropriate impact fees the City may charge to new growth to maintain the level of service (LOS) as defined in the Impact Fee Facilities Plan, dated August 2024.

- **Impact Fee Service Areas:** The impact fees identified in this document will be assessed within the proposed Service Area, as discussed in **SECTION 3**.
- **Demand Analysis:** A total of 39,883 additional kilowatts (kW) of demand will be generated within the current Service Area in the IFFP planning horizon. See **SECTION 3** for details regarding growth in kW.
- **Level of Service:** The LOS is based on loading to the base rating on substation transformers and system voltage criteria. **Section 3** provides the LOS information used in this analysis. New facilities are designed to maintain the diversified kW LOS.
- **Excess Capacity:** This analysis includes excess capacity related to substations and the transmission system.
- **Capital Facilities Analysis:** The IFFP has identified the growth-related projects needed within the next ten years. The total construction cost related to growth is **\$38.6M**, based on an inflation rate of four percent annually.
- **Financing of Future Facilities:** This analysis assumes the City will not utilize bond financing to fund future infrastructure.

SUMMARY OF PROPOSED IMPACT FEES

The impact fees proposed in this analysis will be assessed within the Service Area. The tables below illustrate the calculated impact fee for electric transmission and substation facilities.

TABLE 1.1: ILLUSTRATION OF COST PER NEW kW

	TOTAL COSTS	% GROWTH RELATED AND IMPACT FEE FUNDED	GROWTH RELATED & CITY FUNDED COSTS	GROWTH RELATED kW	COST PER NEW kW
Buy-In: Existing Substation Transformers	\$13,191,976	28%	\$3,758,111	39,883	\$94.23
Future System Improvements	\$49,006,901	79%	\$38,621,695	39,883	\$968.37
Financing	\$0	79%	\$0	39,883	\$0.00
Professional Expense	\$73,925	82%	\$60,363	26,740	\$2.26
Interest Credit	(\$406,000)	100%	(\$406,000)	39,883	(\$10.18)
TOTALS:	\$61,866,802		\$42,034,169		\$1,054.68

Professional expense is based on the cost to complete the IFFP and IFA.



TABLE 1.2: ILLUSTRATION OF IMPACT FEE BY PANEL SIZE

PANEL RATING	LINE-TO-LINE VOLTAGE	100% PANEL KVA	AVG PANEL LOADING	AVG PEAK DEMAND @ PANEL (KVA)	POWER FACTOR	ESTIMATED DIVERSIFIED KW	PROPOSED FEE	EXISTING FEE	% CHANGE
Residential (120/240, 1 phase)									
125	240	30	12.50%	3.75	95%	3.56	\$3,757	\$1,622	132%
200	240	48	12.50%	6.00	95%	5.70	\$6,012	\$2,595	132%
400	240	96	12.85%	12.34	95%	11.72	\$12,360	\$5,190	138%
600	240	144	12.85%	18.50	95%	17.58	\$18,540	\$7,785	138%
Commercial (120/240, 1 phase)									
200	240	48	25.00%	12.00	90%	10.80	\$11,391	\$4,902	132%
400	240	96	25.00%	24.00	90%	21.60	\$22,781	\$9,803	132%
600	240	144	25.00%	36.00	90%	32.40	\$34,172	\$14,705	132%
800	240	192	25.00%	48.00	90%	43.20	\$45,562	\$19,607	132%
Commercial (120/208, 3 phase)									
200	208	72	25.00%	18.01	90%	16.21	\$17,098	\$7,358	132%
400	208	144	25.00%	36.03	90%	32.42	\$34,197	\$14,715	132%
600	208	216	25.00%	54.04	90%	48.64	\$51,295	\$22,073	132%
800	208	288	25.00%	72.05	90%	64.85	\$68,394	\$29,431	132%
1,000	208	360	25.00%	90.07	90%	81.06	\$85,492	\$36,788	132%
1,200	208	432	25.00%	108.08	90%	97.27	\$102,591	\$44,146	132%
1,600	208	576	25.00%	144.11	90%	129.70	\$136,788	\$58,861	132%
1,800	208	648	25.00%	162.12	90%	145.91	\$153,886	\$66,219	132%
2,000	208	721	25.00%	180.13	90%	162.12	\$170,985	\$73,577	132%
2,500	208	901	25.00%	225.17	90%	202.65	\$213,731	\$91,971	132%
3,000	208	1,081	25.00%	270.20	90%	243.18	\$256,477	\$110,365	132%
Commercial (277/480, 3 phase)									
200	480	166	25.00%	41.57	90%	37.41	\$39,458	\$16,979	132%
400	480	333	25.00%	83.14	90%	74.82	\$78,916	\$33,958	132%
600	480	499	25.00%	124.71	90%	112.24	\$118,374	\$50,938	132%
800	480	665	25.00%	166.28	90%	149.65	\$157,832	\$67,917	132%
1,000	480	831	25.00%	207.85	90%	187.06	\$197,290	\$84,896	132%
1,200	480	998	25.00%	249.42	90%	224.47	\$236,748	\$101,875	132%
1,600	480	1,330	25.00%	332.55	90%	299.30	\$315,664	\$135,834	132%
1,800	480	1,496	25.00%	374.12	90%	336.71	\$355,122	\$152,813	132%
2,000	480	1,663	25.00%	415.69	90%	374.12	\$394,580	\$169,792	132%
2,500	480	2,078	25.00%	519.62	90%	467.65	\$493,225	\$212,241	132%
3,000	480	2,494	25.00%	623.54	90%	561.18	\$591,870	\$254,689	132%

A detailed explanation of the increase in the proposed impact fee is in **Section 6** of this report.

NON-STANDARD IMPACT FEES

The proposed fees are based upon growth in kW. The City reserves the right under the Impact Fees Act to assess an adjusted fee that more closely matches the true impact that the land use will have upon public facilities.¹ A developer may submit studies and data for a particular development and request an adjustment. This adjustment could result in a higher or lower impact fee if the City

¹ UC 11-36a-402(1)(c)



determines that a particular user may create a different impact than what is standard for its land use. The following formulas will help determine the non-standard impact fee.

Estimated Diversified kW Usage * \$1,054.68

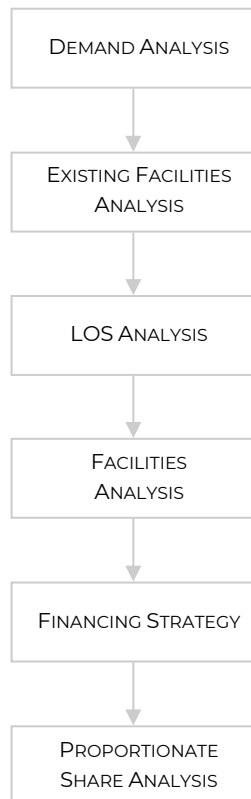
The formula for a non-standard impact fee should be included in the impact fee enactment (by resolution or ordinance). In addition, the impact fee enactment should contain the following elements:

- A provision establishing one or more service areas within which the local political subdivision or private entity calculates and imposes impact fees for various land use categories.
- A schedule of impact fees for each type of development activity that specifies the amount of the impact fee to be imposed for each type of system improvement or the formula that the local political subdivision or private entity will use to calculate each impact fee.
- A provision authorizing the local political subdivision or private entity to adjust the standard impact fee at the time the fee is charged to:
 - Respond to unusual circumstances in specific cases or a request for a prompt and individualized impact fee review for the development activity of the state, a school district, or a charter school and an offset or credit for a public facility for which an impact fee has been or will be collected.
 - Ensure that the impact fees are imposed fairly.
- A provision governing calculation of the amount of the impact fee to be imposed on a particular development that permits adjustment of the amount of the impact fee based upon studies and data submitted by the developer.
- A provision that allows a developer, including a school district or a charter school, to receive a credit against or proportionate reimbursement of an impact fee if the developer:
 - Dedicates land for a system improvement.
 - Builds and dedicates some or all of a system improvement.
 - Dedicates a public facility that the local political subdivision or private entity and the developer agree will reduce the need for a system improvement.
- A provision that requires a credit against impact fees for any dedication of land for, improvement to, or new construction of, any system improvements provided by the developer if the facilities:
 - Are system improvements; or,
 - Dedicated to the public and offset the need for an identified system improvement.

Other provisions of the impact fee enactment may include exemption of fees for development activity attributable to low-income housing, the state, a school district, or a charter school. Exemptions may also include other development activities with a broad public purpose. If an exemption is provided, the entity should establish one or more sources of funds other than impact fees to pay for that development activity. The impact fee exemption for development activity attributable to a school district or charter school should be applied equally to either scenario.

SECTION 2: GENERAL IMPACT FEE METHODOLOGY

FIGURE 2.1: IMPACT FEE METHODOLOGY



The purpose of this study is to fulfill the requirements of the Impact Fees Act regarding the establishment of an IFFP and IFA. The IFFP identifies the demands placed upon the City's existing facilities by future development and evaluates how these demands will be met by the City. The IFFP is also intended to outline the improvements, which are intended to be funded by impact fees. The purpose of IFA is to allocate the cost of the new facilities and any excess capacity to new development, while ensuring that all methods of financing are considered. The Impact Fee Act requires that the IFFP and IFA consider the historic level of service provided to existing development and ensure that the proposed impact fees maintain the existing level of service. The following elements are important considerations when completing an IFFP and IFA.

DEMAND ANALYSIS

The demand analysis serves as the foundation for the IFFP and IFA. This element focuses on a specific demand unit related to each public service – the existing demand on public facilities and the future demand as a result of new development that will affect system facilities.

EXISTING FACILITY INVENTORY

In order to quantify the demands placed upon existing public facilities by new development activity, to the extent possible the IFFP provides an inventory of the City's existing system facilities. The inventory valuation should include the original construction cost and estimated useful life of each facility. The inventory of existing facilities is important to determine the

excess capacity of existing facilities and the utilization of excess capacity by new development.

LEVEL OF SERVICE ANALYSIS

"Level of service" or LOS means the defined performance standard or unit of demand for each capital component of a public facility within a service area. Through the inventory of existing facilities, combined with the growth assumptions, this analysis identifies the existing LOS that is provided to a community's existing residents and ensures that future facilities maintain these standards.

EXCESS CAPACITY AND FUTURE CAPITAL FACILITIES ANALYSIS

The demand analysis, existing facility inventory and LOS analysis allow for the development of a list of capital projects necessary to serve new growth and to maintain the existing system. This list includes any excess capacity of existing facilities as well as future system improvements necessary to maintain the LOS. Any excess capacity identified within existing facilities can be apportioned to new development. Any demand generated from new development that overburdens the existing system beyond the existing capacity justifies the construction of new facilities.

FINANCING STRATEGY

This analysis must also include a consideration of all revenue sources, including impact fees, future debt costs, alternative funding sources and the dedication of system improvements, which may be used to finance system improvements.² In conjunction with this revenue analysis, there must be a determination that impact fees are necessary to achieve an equitable allocation of the costs of the new facilities between the new and existing users.³

PROPORTIONATE SHARE ANALYSIS

The written impact fee analysis is required under the Impact Fees Act and must identify the impacts placed on the facilities by development activity and how these impacts are reasonably related to the new development. The written impact fee analysis must include a proportionate share analysis, clearly detailing each cost component and the methodology used to calculate each impact fee. A local political subdivision or private entity may only impose impact fees on development activities when its plan for financing system improvements establishes that impact fees are necessary to achieve an equitable allocation of the costs borne in the past and to be borne in the future (UCA 11-36a-302).

NOTICE
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² 11-36a-302(2)

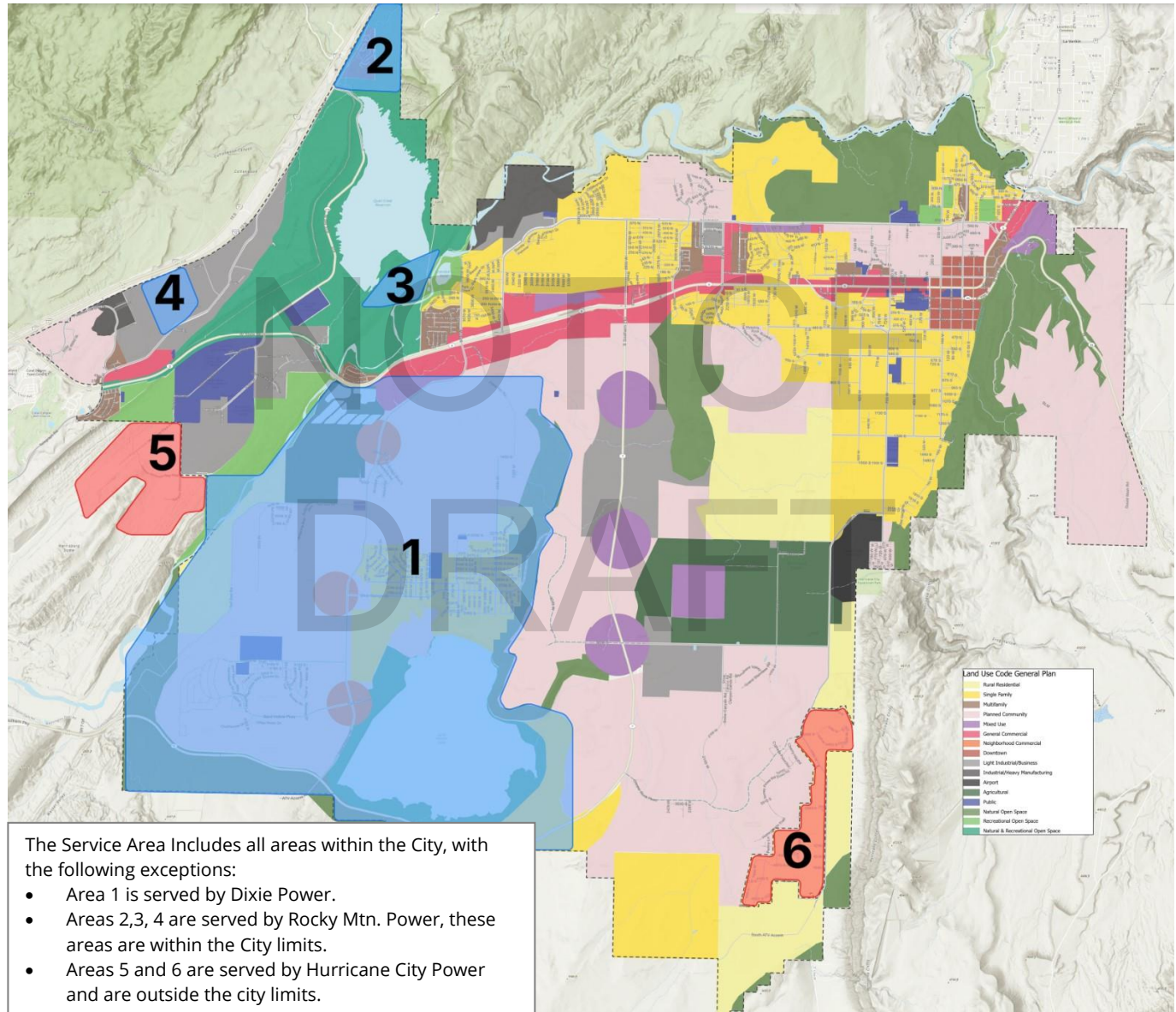
³ 11-36a-302(3)

SECTION 3: SERVICE AREA, DEMAND, AND LOS

SERVICE AREA

Utah Code requires the impact fee enactment to establish one or more service areas within which impact fees will be imposed.⁴ This document identifies the necessary future system improvements for the Service Area that will maintain the existing LOS into the future. According to the 2024 IFFP, the Service Area includes areas within the City boundary as shown in **Figure 3.1**.

FIGURE 3.1: POWER SERVICE AREA



⁴ UC 11-36a-402(1)(a)

DEMAND

The City's electrical system requires expansion to maintain the existing LOS as new growth and development activity occurs within the Service Area. To accurately determine the portion of the costs of future capital infrastructure that should be included in the impact fees, this analysis projects the future growth in megawatts (MW) and kilowatts (kW). The demand unit used in the calculation of the electrical impact fees is the estimated MW and kW at a power factor of 95 percent for residential and 90 percent for commercial.⁵ **TABLE 3.1** summarizes the projected annual increase in kW within the Service Area.

TABLE 3.1: PROJECTED DEMAND

DESCRIPTION	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Total System CP Demands (kW)	50,635	54,686	59,061	63,786	68,888	74,399	77,375	80,470	83,689	87,037	90,518
Ten Year Demand	39,883										

It is anticipated that new growth will have an impact on the City's existing services. Electrical facilities will need to be expanded to maintain the existing LOS. The IFFP, in conjunction with the impact fee analysis, are designed to accurately assess the true impact of a particular user upon the City's infrastructure.

LEVEL OF SERVICE STANDARDS

Impact fees cannot be used to finance an increase in the LOS to current or future users of capital improvements. Therefore, it is important to identify the LOS within the Service Area to ensure that the new capacities of projects financed through impact fees do not exceed the established standard. According to the most recent IFFP, the City plans, designs and operates its system based on the following criteria:

- Transformer ratings under varying load levels and loading conditions must remain below their ONAN/ONFA/ONFA 55-degree rating.
- Dual bay substations loading shall not exceed 75% of combined ONAN/ONFA/ONFA 55-degree MVA rating of power transformers.
- The system must be able to adequately serve load under single contingency (N-1) situations, where "N" is a power system element such as a transformer or line.
- The system switching required under an N-1 contingency should remain as simplified as possible to ensure that switching orders do not become unnecessarily complex.
- Distribution circuit loading criteria must remain below 90% of its maximum current rating.
- Transmission circuit voltage must remain between 95% and 105% of its nominal value.
- Distribution circuit voltage must remain between 98% and 105% (at loads) of its nominal value.
- Distribution circuit mains must be able to serve additional load under N-1 contingencies.

The above criteria were used to determine Hurricane City's facility needs based on the amount of load (i.e., demand) placed on the existing system over the study planning horizon.

⁵ Power factor (p.f.) is the ratio of working power, measured in kilowatts (kW), to apparent power, measured in kilovolt amperes (kVA). The power factor of the present system is acceptable, above 0.95. The system power factor is primarily influenced by the types and level of loads on the system and the amount of shunt capacitors installed in the system.

SECTION 4: EXISTING FACILITIES & EXCESS CAPACITY

This section is intended to summarize the existing public facilities related to electric transmission and substation infrastructure. The IFFP indicates the City is served by PacifiCorp's Purgatory Flat Transmission Substation with two radial 69kV lines, one line feeds Anticline substation and the other line feeds the other three 69kV substations. The radial 69kV line interconnects Hurricane City's four Distribution substations. Hurricane City's electrical system currently has four power distribution substations: Anticline Substation, Brentwood Substation, Clifton Wilson Substation, and Three Falls Substation. It is noted that during the time of this study Three Falls Substation was under construction but was not yet operating. So, the peak loading for Three Falls Substation was estimated.⁶

VALUE OF EXISTING INFRASTRUCTURE

Based upon data provided by the City using the electric utility depreciation schedule, the existing system is valued at approximately \$42M, based on original cost as shown in **TABLE 4.1**. Generation is excluded from the calculation of buy-in. Project improvements and non-eligible values are excluded from the analysis.

TABLE 4.1: VALUE OF EXISTING SYSTEM

Total System Value	\$42,235,807
Eligible Distribution/Transmission	\$4,951,860
Eligible Substations	\$8,240,115
Subtotal of Eligible Value	\$13,191,976
Estimate of Buildout Demand	140,000
IFFP Demand	39,883
% of Total	28%

EXCESS CAPACITY

The City maintains a network of transmission and distribution infrastructure. **TABLE 4.2** and **4.3** illustrate the capacity analysis for the existing transformers and feeder loads. Based on this analysis, there is excess capacity related to existing infrastructure. The excess capacity is assumed to serve development through buildout.

MANNER OF FINANCING EXISTING INFRASTRUCTURE

The City has funded its existing capital infrastructure through a combination of different revenue sources, including user fee revenues, service fees, and impact fees. Therefore, the City's existing LOS standards have been funded by the City's existing residents. The City does not foresee receiving revenues from other entities (i.e., grants, federal or state funds, other contributions, etc.) to fund new facilities.

⁶ IFFP p.7. This station is now in operation.



SECTION 5: CAPITAL FACILITY ANALYSIS

The capital project and engineering data, planning analysis, and other information related to future capital needs can be found in the 2024 IFFP. The accuracy and correctness of this plan is contingent upon the accuracy of the data and assumptions. Any deviations or changes in the assumptions due to changes in the economy or other relevant information used by the City for this study may cause this plan to be inaccurate and may require modification to this analysis to ensure accuracy.

SUMMARY OF FUTURE CAPITAL FACILITIES

Based upon the projected increase in kW and demand on the system, the City has identified the future capital projects that must be constructed over the next ten years to serve future development. The costs of these projects are summarized in **TABLE 5.1**. The percentage of the total cost that is attributable to growth is based upon the ratio of the capacity available for meeting future growth in the 10-year IFFP demand period to the total capacity provided by the project. All the projects listed in the table below have a life expectancy of more than 10 years.

TABLE 5.1: SUMMARY OF FUTURE CAPITAL PROJECT COSTS

PROJECT # & TITLE	OPINION OF PROBABLE COST	YEAR	CONSTRUCTION YEAR COST	% TO IFFP DEMAND	COST TO GROWTH
Replace Anticline T1	\$1,943,675	2025	\$2,021,422	50.0%	\$1,010,711
New 138kV line from Purgatory to Future Sub 1	\$6,404,366	2026	\$6,926,962	75.0%	\$5,195,222
New Future Substation 1	\$7,690,408	2027	\$8,650,663	100.0%	\$8,650,663
New 138kV line from Future Sub 1 to Three Falls	\$3,100,207	2027	\$3,487,311	75.0%	\$2,615,483
Three Falls Substation Bay 2	\$3,728,421	2029	\$4,536,194	80.0%	\$3,628,955
New 69kV line to Sky Mountain	\$200,805	2029	\$244,310	95.0%	\$232,094
New Sky Mountain Substation	\$5,503,354	2030	\$6,963,498	95.0%	\$6,615,324
New 138kV line to 600 North	\$685,450	2031	\$902,005	75.0%	\$676,504
New 138kV line from 600 North to Three Falls	\$1,339,409	2032	\$1,833,074	75.0%	\$1,374,805
Three Falls substation Bay 1 Upgrade	\$2,119,390	2032	\$2,900,532	60.0%	\$1,740,319
New 138kV line to Future Substation 2	\$210,848	2033	\$300,102	75.0%	\$225,077
New 138kV-69kV Future Substation 2	\$7,195,069	2033	\$10,240,827	65.0%	\$6,656,537
Total	\$40,121,402		\$49,006,901		\$38,621,695

The projected resource needs for the next several years are detailed in the following paragraphs. The estimated costs of future capital projects are based on historical experience with the system and projected growth patterns for the system.

SYSTEM VS. PROJECT IMPROVEMENTS

System improvements are defined as existing and future public facilities that are intended to provide services to service areas within the community at large.⁷ Project improvements are improvements and facilities that are planned and designed to provide service for a specific development (resulting from a development activity) and considered necessary for the use and convenience of the occupants

⁷ 11-36a-102(20)



or users of that development.⁸ The Impact Fee Analysis may only include the costs of impacts on system improvements related to new growth within the proportionate share analysis. However, impact fees will be used for the substations, etc. since these are considered system improvements.

FUNDING OF FUTURE FACILITIES

Future facilities are generally funded using the following resources:

UTILITY RATE REVENUES

Utility rate revenues serve as the primary funding mechanism within enterprise funds. Rates are established to ensure appropriate coverage of all operations and maintenance expenses, debt service coverage, and capital project needs not related to growth.

GRANTS AND DONATIONS

The City does not anticipate receiving grants or donations to fund improvements currently contemplated in this IFFP. However, the impact fees will be adjusted if grants become available to reflect the grant monies received. A donor may be entitled to reimbursement for the value of the system improvements funded through impact fees if donations are made by new development. **SECTION 6** further addresses proposed credits available to development.

IMPACT FEE REVENUES

Impact fees are charged to ensure that new growth pays its proportionate share of the costs for the development of public infrastructure. Impact fee revenues can also be attributed to the future expansion of public infrastructure if the revenues are used to maintain an existing level of service. Increases to an existing level of service cannot be funded with impact fee revenues. Impact fee revenues are generally considered non-operating revenues and help offset future capital costs. The City is opting to include the unincumbered impact fee fund balance, estimated at \$2,932,150, as a credit against future impact fee capital costs.

DEBT FINANCING

In the event the City has not accumulated sufficient impact fees to pay for the construction of time sensitive or urgent capital projects needed to accommodate new growth, the City must look to revenue sources other than impact fees for funding. The Impact Fees Act allows for the costs related to the financing of future capital projects to be legally included in the impact fee. This allows the City to finance and quickly construct infrastructure for new development and reimburse itself later from impact fee revenues for the costs of issuing debt. Debt financing costs are not included in this analysis.

EQUITY OF IMPACT FEES

Impact fees are intended to cover the costs of system improvements (infrastructure) that relate to future growth. The impact fee calculations are structured for impact fees to fund 100 percent of the growth-related facilities identified in the proportionate share analysis as presented in the impact fee analysis. Even so, there may be years when actual impact fee revenues cannot cover the annual growth-related expenses. In those years, growth-related projects may be delayed, or other revenues

⁸ 11-36a102(13)

such as general utility rate revenues may be borrowed to make up any annual deficits. Any borrowed funds are to be repaid in their entirety through subsequent impact fees.

NECESSITY OF IMPACT FEES

An entity may only impose impact fees on development activity if the entity's plan for financing system improvements establishes that impact fees are necessary to achieve parity between existing and new development. This analysis has identified the improvements to public facilities and the funding mechanisms to complete the suggested improvements. Impact fees are identified as a necessary funding mechanism to help offset the costs of new capital improvements related to new growth. In addition, alternative funding mechanisms have been identified to help offset the cost of future capital improvements.

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SECTION 6: ELECTRICAL IMPACT FEE CALCULATION

The calculation of impact fees relies upon the information contained in this analysis. Impact fees are calculated based on many variables centered on proportionality and LOS. The following paragraph briefly discusses the methodology for calculating impact fees. Impact fees can be calculated using a specific set of costs specified for future development. The improvements are identified in the IFFP as growth-related projects. The total project costs are divided by the total demand units the projects are designed to serve. Under this methodology, it is important to identify the existing LOS and determine any excess capacity in existing facilities that could serve new growth.

IMPACT FEE CALCULATION

Based on the growth-related projects, as well as the applicable buy-in fee, the cost per new kW is estimated at \$1,054.68, as shown in **TABLE 6.1**.

TABLE 6.1: ESTIMATE OF IMPACT FEE COST PER kW

	TOTAL COSTS	% GROWTH RELATED AND IMPACT FEE FUNDED	GROWTH RELATED & CITY FUNDED COSTS	GROWTH RELATED kW	COST PER NEW kW
Buy-In: Existing Substation Transformers	\$13,191,976	28%	\$3,758,111	39,883	\$94.23
Future System Improvements	\$49,006,901	79%	\$38,621,695	39,883	\$968.37
Financing	\$0	79%	\$0	39,883	\$0.00
Professional Expense	\$73,925	82%	\$60,363	26,740	\$2.26
Interest Credit	(\$406,000)	100%	(\$406,000)	39,883	(\$10.18)
TOTALS:	\$61,866,802		\$42,034,169		\$1,054.68

Professional expense is based on the cost to complete the IFFP and IFA.

The fee per kW is then applied to the general usage statistics for residential and commercial users, as shown in **Table 6.2**. The higher impact fee base cost per kW in this analysis comes from the type of proposed projects in this analysis, the higher cost of system components and the increased costs construction labor since the last analysis was done.

TABLE 6.2: ILLUSTRATION OF IMPACT FEE BY PANEL RATING

PANEL RATING	LINE-TO-LINE VOLTAGE	100% PANEL KVA	AVG PANEL LOADING	AVG PEAK DEMAND @ PANEL (kVA)	POWER FACTOR	ESTIMATED DIVERSIFIED kW	PROPOSED FEE	EXISTING FEE	% CHANGE
Residential (120/240, 1 phase)									
125	240	30	12.50%	3.75	95%	3.56	\$3,757	\$1,622	132%
200	240	48	12.50%	6.00	95%	5.70	\$6,012	\$2,595	132%
400	240	96	12.85%	12.34	95%	11.72	\$12,360	\$5,190	138%
600	240	144	12.85%	18.50	95%	17.58	\$18,540	\$7,785	138%
Commercial (120/240, 1 phase)									
200	240	48	25.00%	12.00	90%	10.80	\$11,391	\$4,902	132%
400	240	96	25.00%	24.00	90%	21.60	\$22,781	\$9,803	132%
600	240	144	25.00%	36.00	90%	32.40	\$34,172	\$14,705	132%
800	240	192	25.00%	48.00	90%	43.20	\$45,562	\$19,607	132%
Commercial (120/208, 3 phase)									
200	208	72	25.00%	18.01	90%	16.21	\$17,098	\$7,358	132%
400	208	144	25.00%	36.03	90%	32.42	\$34,197	\$14,715	132%



PANEL RATING	LINE-TO-LINE VOLTAGE	100% PANEL KVA	AVG PANEL LOADING	AVG PEAK DEMAND @ PANEL (kVA)	POWER FACTOR	ESTIMATED DIVERSIFIED kW	PROPOSED FEE	EXISTING FEE	% CHANGE
600	208	216	25.00%	54.04	90%	48.64	\$51,295	\$22,073	132%
800	208	288	25.00%	72.05	90%	64.85	\$68,394	\$29,431	132%
1,000	208	360	25.00%	90.07	90%	81.06	\$85,492	\$36,788	132%
1,200	208	432	25.00%	108.08	90%	97.27	\$102,591	\$44,146	132%
1,600	208	576	25.00%	144.11	90%	129.70	\$136,788	\$58,861	132%
1,800	208	648	25.00%	162.12	90%	145.91	\$153,886	\$66,219	132%
2,000	208	721	25.00%	180.13	90%	162.12	\$170,985	\$73,577	132%
2,500	208	901	25.00%	225.17	90%	202.65	\$213,731	\$91,971	132%
3,000	208	1,081	25.00%	270.20	90%	243.18	\$256,477	\$110,365	132%
Commercial (277/480, 3 phase)									
200	480	166	25.00%	41.57	90%	37.41	\$39,458	\$16,979	132%
400	480	333	25.00%	83.14	90%	74.82	\$78,916	\$33,958	132%
600	480	499	25.00%	124.71	90%	112.24	\$118,374	\$50,938	132%
800	480	665	25.00%	166.28	90%	149.65	\$157,832	\$67,917	132%
1,000	480	831	25.00%	207.85	90%	187.06	\$197,290	\$84,896	132%
1,200	480	998	25.00%	249.42	90%	224.47	\$236,748	\$101,875	132%
1,600	480	1,330	25.00%	332.55	90%	299.30	\$315,664	\$135,834	132%
1,800	480	1,496	25.00%	374.12	90%	336.71	\$355,122	\$152,813	132%
2,000	480	1,663	25.00%	415.69	90%	374.12	\$394,580	\$169,792	132%
2,500	480	2,078	25.00%	519.62	90%	467.65	\$493,225	\$212,241	132%
3,000	480	2,494	25.00%	623.54	90%	561.18	\$591,870	\$254,689	132%

NON-STANDARD IMPACT FEES

The proposed fees are based upon growth in kW. The City reserves the right under the Impact Fees Act to assess an adjusted fee that more closely matches the true impact that the land use will have upon public facilities.⁹ A developer may submit studies and data for a particular development and request an adjustment. This adjustment could result in a higher or lower impact fee if the City determines that a particular user may create a different impact than what is standard for its land use.

Estimated Diversified kW Usage * \$1,054.68

⁹ UC 11-36a-402(1)(c)



CALCULATION OF IMPACT FEE INTEREST CREDIT

This analysis calculates projected interest earnings and applies a credit in the fee calculation. The table below illustrates that the proposed impact fee revenue collections compared to impact fee expense, with interest credit applied.

TABLE 6.3: IMPACT FEE INTEREST CALCULATION

YEAR	KW	NEW KW	FEE PER KW	PROJECTED REVENUE	PROJECTED EXPENSE	PROJECTED BUY-IN EXPENSE	NET	CUMULATIVE	INTEREST EARNED
2023	50,635								
2024	54,686	4,051	\$1,055	\$4,272,509	\$0	(\$381,726)	\$3,890,783	\$3,890,783	\$38,908
2025	59,061	4,375	\$1,055	\$4,614,225	(\$1,010,711)	(\$412,256)	\$3,191,258	\$7,082,041	\$70,820
2026	63,786	4,725	\$1,055	\$4,983,363	(\$5,195,222)	(\$445,237)	(\$657,095)	\$6,495,766	\$64,958
2027	68,888	5,102	\$1,055	\$5,380,977	(\$11,266,147)	(\$480,761)	(\$6,365,931)	\$194,793	\$1,948
2028	74,399	5,511	\$1,055	\$5,812,341	\$0	(\$519,302)	\$5,293,040	\$5,489,781	\$54,898
2029	77,375	2,976	\$1,055	\$3,138,728	(\$3,861,050)	(\$280,428)	(\$1,002,751)	\$4,541,928	\$45,419
2030	80,470	3,095	\$1,055	\$3,264,235	(\$6,615,324)	(\$291,642)	(\$3,642,731)	\$944,616	\$9,446
2031	83,689	3,219	\$1,055	\$3,395,015	(\$676,504)	(\$303,326)	\$2,415,184	\$3,369,247	\$33,692
2032	87,037	3,348	\$1,055	\$3,531,069	(\$3,115,124)	(\$315,482)	\$100,462	\$3,503,402	\$35,034
2033	90,518	3,481	\$1,055	\$3,671,341	(\$6,881,614)	(\$328,015)	(\$3,538,288)	\$148	\$1
Total				\$42,063,802	(\$38,621,695)	(\$3,758,175)			

Assumes interest earnings based on one percent interest rate.

CONSIDERATION OF ALL REVENUE SOURCES

The Impact Fees Act requires the proportionate share analysis to demonstrate that impact fees paid by new development are the most equitable method of funding growth-related infrastructure. See **SECTION 5** for further discussion regarding the consideration of revenue sources.

EXPENDITURE OF IMPACT FEES

Legislation requires that impact fees should be spent or encumbered within six years after each impact fee is paid. Impact fees collected in the next five to six years should be spent or encumbered on only those projects outlined in the IFFP as growth-related costs to maintain the LOS or to reimburse existing development for excess capacity used. The existing impact fee fund balance is included in this analysis and will be spent on the projects that are shown here that were identified in the prior Impact Fee Facilities Plan (also included in this analysis).

PROPOSED CREDITS OWED TO DEVELOPMENT

Credits may be applied to developers who have constructed and donated system facilities to the City that are included in the IFFP in-lieu of impact fees. Credits for system improvements may be available to developers up to, but not exceeding, the amount commensurate with the LOS identified within this IFA. Credits will not be given for the amount by which system improvements exceed the LOS identified within this IFA. This situation does not apply to developer exactions or improvements required to offset density or as a condition of development. Any project that a developer funds must be included in the IFFP, if a credit is to be issued.

In the situation that a developer chooses to construct system facilities found in the IFFP in-lieu of impact fees, the decision must be made through negotiation with the developer and the City on a case-by-case basis.

GROWTH-DRIVEN EXTRAORDINARY COSTS

The City does not anticipate any extraordinary costs necessary to provide services to future development.

SUMMARY OF TIME PRICE DIFFERENTIAL

The Impact Fees Act allows for the inclusion of a time price differential to ensure that the future value of costs incurred at a later date are accurately calculated to include the costs of construction inflation. A four percent annual construction inflation adjustment is applied to projects completed after 2023 (the base year cost estimate).

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Hurricane City

Electrical Transmission and Substation Impact Fee Facility Plan

November 2024
Rev 1



**Intermountain Consumer
Professional Engineers, Inc.**
1145 East South Union Avenue
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SECTION I GENERAL

Introduction

Intermountain Consumer Professional Engineers, Inc. (“ICPE”) performed studies and analyses for Hurricane City to update their Electrical Power Capital Facilities Plan and Impact Fee Facilities Plan.

ICPE utilized load predictions in the studies that were developed using recent load data provided by Hurricane City and load trends observed in Hurricane City over the past several years. The future loads used in the studies are predictions and do not reflect actual values which prevents ICPE from guaranteeing or assuring that the recommendations reflect actual events that will occur in the future. However, it is believed that all predictions and observations used in the study are reasonable and appropriate for the purpose of the Capital Facilities Plan and Impact Fee Facilities Plan.

Impact Fees - General

Impact fees are generally used by cities to fund infrastructure projects necessary to provide services to new developments within the city’s boundary. The new development should bear the additional or incremental capital cost for the services, existing residents who do not benefit from the new development should not bear the costs for services to the new development. Impact fees are not intended for operating expenses or for corrections to existing deficiencies in the services presently being provided by a city. Impact fees are based on anticipated new load increase to the electrical system due to the new developments. The improvements outlined in the plans are required to maintain the present level of service to both new and existing customers.

Impact Fees - Utah

In Utah, impact fees are governed by state statute, specifically U.C.A. 1953 § 11-36a-102. The Statute requires that each governmental agency that imposes an impact fee shall (1) prepare an Impact Fee Facilities Plan (§ 11-36a-301), (2) perform an Impact Fee Analysis (§ 11-36a-303), (3) calculate the Impact Fee(s) (§ 11-36a-305) and (4) certify the Impact Fee Facilities Plan (§ 11-36a-306).

As stated in the Statute, the “Impact Fee Facilities Plan (“IFFP”) shall identify (a) demands placed upon existing public facilities by new development activity; and (b) the proposed means by which the political subdivision will meet those demands.” The IFFP shall also consider all revenue sources,

including impact fees, used to finance impacts on system improvements. This report incorporates the most recent Hurricane City Capital Facilities Plan (“CFP”), dated August 2024. In general, the CFP outlines all projects necessary to maintain electrical service to existing customers and the IFFP outlines fees for the improvements necessary to provide service to new developments and customers. Projects identified in the CFP may be due to the correction of an existing deficiency or improvement necessary to maintain reliability and are not included in the IFFP.

The Utah Statute requires the governmental agency that imposes an impact fee to perform an analysis of the impact fee and document the results. The agency is also required to provide a summary document of the analysis that can be understood by a layman. The estimated impacts on the existing electrical system due to the new development are to be included in the Impact Fee Analysis (IFA) along with the costs associated with addressing the impacts. The IFA is also required to include the costs of existing capacity that will be recouped.

Impact Fee calculations may include the following:

- (a) The construction cost.
- (b) The cost of acquiring land and material.
- (c) The cost for planning, surveying, and engineering fees for services provided to design the construction.
- (d) Debt service charges, if the impact fees are used to pay the principal and interest on bonds or other obligations to finance the costs of the construction.

Impact Fee calculations are to be based on local industry standard material and labor estimates. The assumptions used to develop the estimates are to be included in the IFA. The IFFP and the IFA are to be certified by the person or entity that prepared the documents.

Hurricane City



Hurricane City is located in southwest Utah in Washington County, approximately 140 miles northeast of Las Vegas, NV. According to the US Census, the land area is 31.5 square miles and the estimated population in 2022 was about 20,609 persons. The median resident age is 43.3 years, the average household size is 2.87 persons, and the median household income is about \$64,182.

Hurricane can best be described as a suburban community since many of its resident's commute to work in the City of St. George other nearby business areas. Hurricane, as well as the surrounding area has a rapidly growing population.

Electricity Supply

General

Figure 1 illustrates the three basic components of an electrical system, an electric generator that creates the electricity, a transmission system that carries the electricity to the distribution system; and the distribution system that delivers the electricity to the customer.

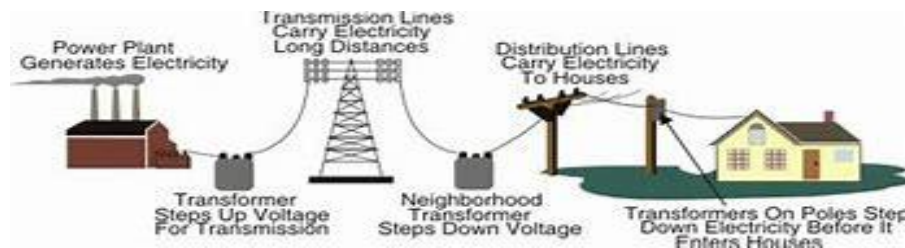


Figure 1

Illustration of a Typical Power Delivery System

Electricity Generation

Electricity is produced by a generator that is powered by a fuel source. The generator can be a steam, hydro, turbine, diesel engine, wind, solar or geothermal. The generated electricity is provided to a utility through purchased power agreements, which can be a firm power agreement (long-term and short-term); unit power (a portion of a specific generating unit) and non-firm (usually short-term). The type and amount of each generating resource that is used by a utility to meet the electrical demand depends on the amount and duration of the demand, the availability of the generating units and the cost of the electricity from the generating units. To meet the hourly demand for electricity, each available generating resource is evaluated according to its availability, capacity and operating cost and then dispatched accordingly to meet the demand for electricity in each hour of the day.

The utility's peak demand is the highest demand for electricity in any one hour. It is during these peak hours that a utility will use multiple generating resources including its own generating resources.

Electricity Transmission

The electricity leaving the generator is stepped up to a higher voltage by a transformer and delivered to the transmission system. The transmission system consists of transmission power poles or towers, conductors, substations and other equipment necessary to deliver electricity from the generators to the utility.

Transmission of electricity to Hurricane City is through the Utah Associated Municipal Power Systems (UAMPS) transmission system. UAMPS receives electricity through Rocky Mountain Power's transmission system.

Electricity Distribution

Electricity distribution is the final stage in the delivery of electricity to customers. An electricity distribution system receives electricity from the transmission system and delivers it to consumers. A typical electric distribution system includes medium-voltage (138kV, 69 kV & 12.47 kV) power lines, substations, transformers, service drops and metering. The distribution system begins where the voltage is stepped down through transformer(s) and ends at the secondary service point at the customer's meter. Distribution circuits begin at the low-voltage side of the transformer located in the City's substation. Conductors for the distribution delivery system are either located overhead on utility poles or buried underground.

Most electric customers are connected to a pole mounted or pad mounted transformer that reduces the distribution voltage to the low voltage used by customers. Each customer has an electrical service connection and a meter.

SECTION II CAPITAL FACILITIES PLAN AND IMPACT FEE FACILITIES PLAN

General

The Impact Fee Facilities Plan identifies the additional electrical load placed on an existing electrical system by new developments, identifies additions or modifications to the existing electrical system necessary to meet the increased load and provides costs for the system additions or modifications. The Plan will enable the utility to determine how they will fund the projects necessary to meet the load increase to the system.

The following summarizes the results of the Capital Facilities Plan Update that was completed in August 2024 where load increases were identified, projects were proposed to meet the load increase and costs were provided for the proposed projects.

Historical Population and Load Growth

According to the U.S. Census Bureau, the Hurricane City's population in 2020 was approximately 20,609. The population grew to 25,209 by 2024 for an approximate 22.3% increase in population over four years. The following table is a summary of the population growth since 1960.

Table 2-1
Hurricane City Historical Population

Historical population		
Census	Pop.	%±
1960	1,251	
1970	1,408	12.5%
1980	2,660	88.9%
1990	4,014	50.9%
2000	8,560	113.3%
2010	13,748	60.6%
2014	15,032	9.3%
2020	20,609	37.1%
Est 2024	25,209	22.3%

Hurricane City experienced a high growth rate between 1980 and 1990 and between 1990 and 2010. However, the electrical load during these periods did not increase as significantly as the population. The annual historical load growth since 1987 is shown in Table 2-2.

Table 2-2
Hurricane City
Electrical Load History

Year	PEAK kW	
	Summer Peak	% Growth (Summer)
1991	5,544	
1992	6,497	17.19%
1993	6,675	2.74%
1994	8,267	23.85%
1995	9,364	13.27%
1996	11,467	22.46%
1997	11,632	1.44%
1998	13,101	12.63%
1999	13,836	5.61%
2000	16,200	17.09%
2001	15,600	-3.70%
2002	18,200	16.67%
2003	19,700	8.24%
2004	21,200	7.61%
2005	25,700	21.23%
2006	27,800	8.17%
2007	31,300	12.59%
2008	29,300	-6.39%
2009	31,243	6.63%
2010	31,315	0.23%
2011	31,435	0.38%
2012	32,870	4.56%
2013	33,731	2.62%
2014	31,502	-6.61%
2015	34,228	8.65%
2016	37,411	9.30%
2017	37,527	0.31%
2018	38,483	2.55%
2019	39,148	1.73%
2020	44,416	13.46%
2021	49,060	10.46%
2022	49,314	0.52%
2023	50,635	2.68%

Electric Infrastructure and Future Needs

Transmission

Hurricane City Power is served by PacifiCorp's Purgatory Flat Transmission Substation with two radial 69kV lines, one line feeds Anticline substation and the other line feeds the other three 69kV substations. The radial 69kV line interconnects Hurricane City Power's four Distribution substations. Future Substation 1, Future Substation 2, and Three Falls Substation are planned to be fed by a 138 kV line originating at Purgatory Flat. Sky Mountain Substation is planned to be fed by the 69 kV line originating at Purgatory Flat.

In the 5-year planning horizon the new proposed Future Substation 1 will need a new 138 kV transmission line to provide power to the substation. This new 138kV transmission line would feed the new substation from the existing Purgatory Substation. The proposed 138kV line would be served by the 138kV bus of the Purgatory Substation. The line would be approximately 8.1 miles of single circuit 1272 ACSR conductor. Future Substation 1 would also need to be designed to allow for two transmission lines. The 138kV line needs to be extended to the Three Falls Substation from Future Substation 1. This line is necessary to provide power to the proposed second bay of Three Falls. This 138 kV would be approximately 4.6 miles of single circuit 1272 ACSR conductor. Three Falls was designed in a ring bus configuration to accommodate the building of this line.

In the 10-year planning horizon, Sky Mountain Substation will need to get power from the existing 69kV line that runs along 600 North, this line will be approximately 200 ft of 795 ACSR single circuit conductor. Future Substation 2 will need to get power from the existing 138kV line that runs along 600 North, this line will be approximately 400 ft of 1272 ACSR single circuit conductor. A new 138 kV transmission line is proposed that will make a connection between the existing 138kV line and the proposed line that will feed Future Substation 1, this line is necessary to build before Three Falls Substation is upgraded to a 138 kV substation. This 138 kV line would be approximately .9 miles of single circuit 1272 ACSR conductor. The existing 1/0 ACSR 69 kV transmission line that provides power to Three Falls Substation will need to be upgraded to accommodate the upgraded substation equipment and new bay. This new line will connect to the existing 138kV line along 600 North and will be approximately 1.9 miles of 1272 ACSR single circuit conductor.

Substations

Hurricane City Power system currently has four power distribution substations: Anticline Substation, Brentwood Substation, Clifton Wilson Substation, and Three Falls Substation. It is noted that during the time of this study Three Falls Substation was under construction but was not yet operating. So, the peak loading for Three Falls Substation was estimated.

In the 5-year planning horizon Anticline T1 will need to be upgraded to a 20 MVA transformer to meet growth requirements in the area. The Bay 1 voltage regulators will also need to be upgraded. Due to the projected growth in the area that Anticline Substation serves it will be necessary to have both bays of Anticline substation feeding load. The addition of one substation (Future Substation 1) will be necessary to meet growth requirements and to maintain the required current level of service. The location of Future Substation 1 should be in the general vicinity of 2700 South, east of Highway 7.

In the 10-year planning horizon the addition of Sky Mountain will be necessary to meet the estimated growth. The location of Sky Mountain is approximately 600 North and 2200 West. It will be necessary to install the second bay in Three Falls Substation to help take the load off Clifton Wilson and to help back up Future Substation 1. Sky Mountain Substation helps take load off Clifton Wilson and Brentwood Substations and helps provide backup of those substations during N-1 conditions. Three Falls substation should be upgraded from 69kV to 138kV. This is necessary to complete the 138kV loop for redundancy during N-1 conditions. Future Substation 2 will be a 138kV-69kV substation and will provide a second 69kV source for the 69kV substations during the loss of the 69kV line from Purgatory. The location of Future Substation 2 should be approximately 600 North in between Sky Mountain and Clifton Wilson.

Level of Service Standards

Consistent with current practice and level of service, Hurricane City plans, designs and operates its system based on the following criteria:

- Transformer ratings under varying load levels and loading conditions must remain below their ONAN/ONFA/ONFA 55-degree rating.
- Dual bay substations loading shall not exceed 75% of combined ONAN/ONFA/ONFA 55-degree MVA rating of power transformers.
- The system must be able to adequately serve load under single contingency (N-1) situations, where “N” is a power system element such as a transformer or line.
- The system switching required under an N-1 contingency should remain as simplified as possible to ensure that switching orders do not become unnecessarily complex.
- Distribution circuit loading criteria must remain below 90% of its maximum current rating.
- Transmission circuit voltage must remain between 95% and 105% of its nominal value.
- Distribution circuit voltage must remain between 98% and 105% (at loads) of its nominal value.
- Distribution circuit mains must be able to serve additional load under N-1 contingencies.

The above criteria were used to determine Hurricane City’s facility needs based on the amount of load (i.e., demand) placed on the existing system over the study planning horizon.

Demands Placed on Existing Facilities

Electrical demand loads on a system are measured in kilowatts (kW) or kilovolt-amperes (kVA) and are indicated as either coincident-peak (“CP”) demand or non-coincident peak (“NCP”) demand. The system CP demand is the maximum demand for the entire system measured at a point in time where the sum of all demands on the system is the highest for the system as a whole. The NCP demand is the sum of the maximum demands of individual customers or customer classes such as residential, commercial, industrial, measured for a period of time. The CP demand represents the combined loads across all customer classes measured at the system level where the NCP demand represents the total demand the system would be subject to if all customer classes peaked at the same time. The CP demand is usually lower than the NCP demand. For Impact Fees, CP represents the demand placed on the existing system as a whole, while NCP reflects the maximum demand placed on local facilities by individual customer classes. The CP demand is normally the demand that a utility plans for when sizing facilities that will be used to meet future growth on the system. However, each individual piece of equipment must be able to support its own individual peak demand even if that demand does not occur at the same time as the system’s CP.

Hurricane City’s projected CP demand between 2024 and 2033 are shown in Table 2-3. The System CP Demands for the planning period (2024 – 2033) were developed by ICPE.

Table 2-3
Summary of CP Demands
For the Period 2023 through 2033

Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Total System CP Demands (kW)	54,686	59,061	63,786	68,888	74,399	77,375	80,470	83,689	87,037	90,518

System Modeling for the CFP/IFFP

The recent CFP completed contains results of load flow analysis of the Hurricane City electrical system. The system load flows provide insight on substation transformer loading and system voltage drop. The study includes analyzing N-1 outage conditions. An N-1 outage condition is the loss of a major system component such as loss of a substation transformer or loss of a main line section. The existing substations that were studied include Anticline, Brentwood, Clifton Wilson, and Three Falls. The CFP study is primarily focused on Transmission (69kV or greater) and Substation requirements.

To perform load flow analysis a system computer model was developed. System model development and analysis were performed on SKM Power Tools. System modeling data was developed from data provided by Hurricane City. System load was modeled based on 2023 peak values since they were available at the time. Circuit models are based on the assumption that provided circuit maps and data (conductor sizes, circuit configurations, line lengths, etc.) are reflective of actual field conditions.

Model Results

The following System Improvement Summary from the CFP details the anticipated projects and estimated expenditures necessary to sustain the projected growth rate for Hurricane City's electrical system for the next 10 years. There is greater confidence in projecting requirements for 2 to 3 years than there is for a 10-year or longer outlook. However, it is necessary to forecast future projects due to the magnitude (and cost) of the modifications necessary. Substation and transmission line projects can take significant time from start to finish due to material lead times and permitting requirements. Substation and transmission line requirements need to be addressed to meet future needs of the city in a timely fashion.

The proposed projects will provide a method for Hurricane City to plan and budget for the facilities necessary to serve the anticipated electrical load growth. Existing electrical facilities as well as new facilities will be used to meet projected load levels. Table 2-4 is a summary of the recommended projects, timing and costs. Detailed cost estimates for the various projects can be found in the appendix of the CFP. Costs shown are based on present 2024 project material and labor pricing.

Table 2-4
Summary of CFP Improvement Projects
For the Period 2024 through 2033*

Project Number	Description	Project Estimated Cost (\$) **	Estimated Timeframe	IFFP Percentage	Adjusted Project Cost
1	Replace Anticline T1	1,943,675.00	2025	50%	971,837.50
2	New 138kV line from Purgatory to Future Sub 1	6,404,366.00	2025-2027	75%	4,803,274.50
3	New Future Substation 1	7,690,408.00	2027	100%	7,690,408.00
4	New 138kV line from Future Sub 1 to Three Falls	3,100,207.00	2027-2028	75%	2,325,155.25
5	Three Falls Substation Bay 2	3,728,421.00	2029	80%	2,982,736.80
6	New 69kV line to Sky Mountain	200,805.00	2029	95%	190,764.75
7	New Sky Mountain Substation	5,503,354.00	2030	95%	5,228,186.30
8	New 138kV line to 600 North	685,450.00	2031	75%	514,087.50
9	New 138kV line from 600 North to Three Falls	1,339,409.00	2032	75%	1,004,556.75
10	Three Falls substation Bay 1 Upgrade	2,119,390.00	2032	60%	1,271,634.00
11	New 138kV line to Future Substation 2	210,848.00	2033	75%	158,136.00
12	New 138kV-69kV Future Substation 2	7,195,069.00	2033	65%	4,676,794.85
	TOTAL	40,121,402.00			31,817,572.20

* Note: Project timing will vary based on actual load growth amount and location.

** Values have been rounded.

IFFP Capital Projects and Costs

As previously mentioned, the costs for the above projects are estimated in 2024 dollars. As with most capital facilities plans, the majority of these projects are scheduled to occur in the earlier planning windows. However, growth in demand on the system generally happens in “groups” or “lumps” according to actual commercial and residential development. Actual load growth may be sooner or later than shown based on current economic and development levels. Projects shown in the IFFP may be delayed or accelerated based on actual load growth locations and timing.

Certification of the IFFP

I certify that the attached Impact Fee Facilities Plan:

1. includes only the costs of public facilities that are:
 - a. allowed under the Impact Fees Act; and
 - b. actually incurred; or
 - c. projected to be incurred or encumbered within six years after the day on which each impact fee is paid;
2. does not include:
 - a. costs of operation and maintenance of public facilities;
 - b. costs for qualifying public facilities that will raise the level of service for facilities, through impact fees, above the level of service that is supported by existing residents;
 - c. an expense for overhead, unless the expense is calculated pursuant to a methodology that is consistent with generally accepted cost accounting practices and the methodological standards set forth by the federal Office of Management and Budget for federal grant reimbursement;

CERTIFIED BY:

Signature: Mac Fillingim

Name: Mac Fillingim

Title: ICPE, Senior Engineer

Date: August 2024



UTAH ASSOCIATED MUNICIPAL POWER SYSTEMS

March 2025

Project Meeting Overview Report

CARBON FREE POWER PROJECT (CFPP)

1. Discussed in Executive Session:
 - a. Project wind down status, timeline and DOE engagement.
 - b. BofA LOC extension including the 4th Amendment to the Revolving Credit and Security Agreement, and other items.
2. **Approved resolution regarding the Carbon Free Power Project, authorizing and approving the Fourth Amendment to the Revolving Credit and Security Agreement between UAMPS and Bank of America, and related matters.**

MILLARD COUNTY PROJECT

1. Discussed in Executive Session:
 - a. Project update including current status, site control work and next steps.
 - b. Owner Engineer/Prime Engineer Contract including details, selection, and next steps.
 - c. News on LGI including PAC's filing to FERC.
 - d. Target Price including analyzed multiple options.
2. **Approved Burns and McDonnell as the Owners Engineer/Prime Engineer, as discussed.**

POOL PROJECT

1. Discussed in Executive Session:
 - a. EDAM including policy approach, implementation, scheduling coordinator, UAMPS internal approach and generator consideration.
 - b. TEA Agreement(s) including negotiations and next steps.
2. **Approved substantial form of Amendment 1 to TEA Resource Management Agreement, Task Order 5 - EDAM Scheduling Coordinator Implementation Services through EDAM go live, and Task Order 6 - EDAM Scheduling Coordinator Services after EDAM go live, as discussed.**

RESOURCE PROJECT

1. Discussed in Executive Session:
 - a. Fremont Solar & Storage including current status, transmission update, Power Purchase Agreement delay and potential price impacts and next steps.
 - b. Power County Natural Gas including current status, subscription update, site activity, project sizing and next steps.
 - c. Utah Municipal Power Agency (UMPA) Joint Ownership Agreement (JOA) including updates and changes.
2. **Approved UMPA JOA, as discussed.**