SCHNEIDER ENGINEERING, LTD.

CITY OF GEORGETOWN
ELECTRIC RESOURCE MANAGEMENT
ASSESSMENT REPORT

PREPARED FOR

CITY OF GEORGETOWN

MAY 9, 2019

Disclosures

Schneider Engineering (SE) and its team currently have and previously have had historical relationships with the City of Georgetown.

Mr. Steve Moffitt, prior to joining Schneider Engineering, worked with the City regarding power supply planning and other issues. When he joined Schneider Engineering in August 2010, Mr. Moffit no longer maintained a professional relationship with the City until it joined with a group of existing SE Clients who opted not to renew their Lower Colorado River Authority (LCRA) contract and subsequently exited the contract prior to its natural expiration. This work was purely related to project management and coordination between the seven municipally owned utilities and cooperatives regarding their contract dispute. The LCRA contract dispute was resolved in 2015, at which point the project coordination relationship between GUS, the other SE Clients, and Mr. Moffitt was dissolved.

Mr. Ned Brown, Mr. Jay Hurst, and Mr. Ramsey Cripe have worked with Georgetown prior to this project, as well. Schneider Engineering has a relationship with GUS to provide regulatory support services related to compliance with standards, protocols and guidelines from North American Electric Reliability Corporation (NERC), Texas Reliability Entity (TRE) and ERCOT Protocols and Operating Guides. These functions are not related to finance, power supply, or related topics. Furthermore, Mr. Brown and Mr. Cripe performed some work assisting Mr. Moffitt in the project coordination efforts relating to the LCRA contract dispute.

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INTRODUCTION

INTRODUCTION

On March 8, 2019, Schneider Engineering entered into an agreement with the City of Georgetown (City), to provide an assessment of the City's Electric Resource Management business area. During the months of March and April 2019, Schneider Engineering's (SE) project team conducted various interviews, electric market analysis, and contract and electric generation resource research in accordance with the scope of work and terms agreed upon scope for an Electric Resource Management Assessment (RFP No. 201918). The assessment included a review and evaluation of the following confidential and non-confidential information and subject areas:

- Focus on the City's Electric Resource Management team within GUS, the development of the current wholesale power contracts, and the performance outlook for the contracts.
- Identify, establish and discuss significant factors that contributed towards decisions that culminated in significant increases in wholesale power costs.
- Review the impact of the power contracts on recent City's budgets, retail electric rates, and other City business areas.
- Offer a forward-looking evaluation of steps the City may consider to effectively manage and optimize the power contracts which considers market factors that may influence the performance of the contracts over the next several years.

The Assessment is organized into public (non-confidential) and confidential sections. Sections 1-6 contain non-confidential information:

1. **Background:** Provide contextual and time-period information related to the construction of a City / GUS wholesale power contracts and address the following questions:
    - *When did the construction of the power contracts begin?*
    - *What decisions and events in 2011-2012 occurred that shifted this responsibility to an internal City business function?*
    - *What are the foundational organizational structures in place for the management of the City's wholesale power supply procurement and management business area?*
2. **Financial Impact to the City**. Review the financial impacts of the contracts on the City's budgets, retail electric rates and other City business areas. This section will provide relevant information and insights and address the following questions:
    - *How has the performance of the power contracts impacted the City's power supply budget?*
    - *Why has it been difficult to accurately forecast wholesale power supply expenses?*
3. **Organizational Assessment:** An assessment of the City and GUS Electric Resource Management organization and answer the following questions:
    - *What challenges does the GUS Electric Resource Management organization face?*
    - *What are the implications of these challenges to the power supply contracts?*

4. **A forward-looking discussion and presentation of market-side and regulatory issues:** Given the makeup of the current contracts, it is important to consider market trends, issues and developments that may impact the performance of the current contracts. This section will provide relevant information and insights and address the following questions:
    - *What are the favorable market trends that may impact the performance of the current power contracts?*
    - *What are the non-favorable trends?*
    - *To what degree might these trends or developments change the performance of the individual power contracts?*

5. **Conclusions and Key Findings:** The assessment draws conclusions for each of the first four sections and are designed to provide the City with clear, unbiased, and objective findings related to the Electric Resource Management business area and power contracts. These conclusions and finding are intended to address the following questions:
    - *When did the City become fully responsible for the procurement of the City's power and energy requirements?*
    - *In retrospect, did the GUS Resource Management team provide sound recommendations regarding power supply procurement?*
    - *What has been the result of current wholesale power contracts?*
    - *What has been the financial impact to the City?*
    - *Has the organizational structure of the GUS Resource Management team contributed to current performance problems and issues with the power contracts?*
    - *Are there any market trends, likely developments that might improve (or negatively impact) the performance of the current contracts?*

6. **Recommendations:** The recommendations are organized into the following groupings: Impact Management, Policy Changes, and Issues to Study. These recommendations are designed to address the following questions:
    - *What procedures and actions can the City take to manage, track, and forecast the financial impacts of the power supply contracts?*
    - *What policy changes should the City/GUS consider based on lessons learned from this experience?*
    - *What issues related to this business area (if any) warrant further study?*

7. **Confidential Information – Appendix E:** This section contains confidential information in order to comply with Section 551.086 of the Texas Government Code governing Public Power Utilities and the protection of confidential information.

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ELECTRIC RESOURCE MANAGEMENT ASSESSMENT REPORT

SECTION 1: BACKGROUND

1.0 BACKGROUND

This section is intended to provide contextual and time-period information related to the construction of a City / GUS wholesale power contract portfolio and will address the City utility structure, the City Council, the GUS Advisory Board, the GUS Resource Management business area and also review some key milestone dates that provide the framework for the information in the report.

1.1 City Utility Structure

As a traditionally structured, municipally owned utility, GUS and its components are ultimately the responsibility of the City Council. However, through Section 5.02 of the City of Georgetown Home Rule Charter, the City Council has delegated this authority such that "The City Manager shall be responsible to the council for the proper administration of all affairs of the City" (City of Georgetown 2019).

Administration and management functions are delegated, by necessity and standard practice, to various members of City administration and staff to ensure appropriate operations of all aspects of the City government and the services it offers; Georgetown Utility Systems (GUS) is the GUS departmental area responsible for establishing and managing the City's wholesale power contracts structure, its impact on the City's electric rates, as well as ensuring proper oversight and control mechanisms are in place to effectively manage this contracts.[1]

1.2 City Council

The City of Georgetown City Council is ultimately responsible only to the voters for all actions taken by the City; therefore, it is the body ultimately responsible for all matters relating to the Electric Utility. This practically applies towards the approval of wholesale power contracts and changes to rates, other than to the Power Cost Adjustment (PCA). As such, all contracts currently contained within the wholesale power contracts were approved by the City Council.

The City Council deliberates wholesale power contracts in executive session, as it is generally considered a protected competitive matter and, therefore, is not subject to open records standards under Texas law. Much of what occurs or is discussed within executive session is privy only to the Council, the Mayor, and various members of City administration to whom matters being discussed are relevant.

1.3 Georgetown Utility Systems Advisory Board

The GUS Advisory Board (Advisory Board, Board) is a body of seven appointed representatives designated "to review and analyze the policies and resources of [GUS] concerning the business aspects of such policies and resources as they relate to … electric rates, impact fees, and other Council-assigned projects, and to report recommendations to the City Council" (City of Georgetown 2015). Generally, the City Council relies on the Board for advice and subject matter expertise when it comes to decisions relating to GUS, particularly on matters relating to wholesale power supply and electric rates, as described in various staff interviews. Ultimately, while the Council relies on the judgment of the Advisory Board for direction, all recommendations made by the Board to Council are non-binding. As such, the Council can opt to take action that deviate from or go against the Board's recommendations.

Furthermore, the Advisory Board has no power over the internal decisions, policies, or actions taken by GUS, its management, or its staff. While the Board's Bylaws establish it as an oversight body "to review and analyze

[1] City and GUS organizational structures can be found in greater detail in Appendix A and B.

the policy and resources of [GUS]," there is nothing within that very same document that allow the Board to be effective in that role.

1.4 Georgetown Utility Systems and Resource Management

Georgetown Utility Systems was established as a result of a vote in 1910 by Georgetown voters for a bond approval to build the Georgetown Light and Water Works Plant (City of Georgetown n.d.). The resulting facility was a coal plant that served the City for a number of years; the power plant played such a significant role for the City and the Utility that it appears on the GUS centennial celebration logo. Interviews with City and GUS staff indicated that most of the wholesale power supply planning and strategy development occurred internally within GUS, with support from consultants, which were then presented to the Advisory Board and City Council for approval. This is inclusive of the decisions related to renewable energy procurement and natural gas hedging. Interviews with staff indicated that the Council delegated responsibilities relating to the execution of hedges and bilateral contracts to the Assistant City Manager who oversees GUS.[2] With so much responsibility vested in the GUS staff, understanding how each role contributes to strategies and decisions relating to the wholesale power contracts will be key in shaping policy and organizational recommendations moving forward.

Key GUS Resource Management Positions / Personnel

Assistant City Manager and Georgetown Utility Systems General Manager of Utilities

The Assistant City Manager and Georgetown Utility Systems General Manager of Utilities is a cross-functional employee between the City and GUS, serving as an Assistant City Manager in addition to the role of General Manager of Utilities, and is currently filled by Jim Briggs. In this role, he oversees the administration, operation, and maintenance of a department that houses both some of the single largest expenditures and revenue streams to the City.

The GUS General Manager of Utilities was critical to developing an integrated resource plan (IRP) in 2008, evaluating the contract extension offered by the Lower Colorado River Authority (LCRA) in the late 2000s and early 2010s, the early termination of the LCRA contract by the City of Georgetown, the wholesale power contracts, and establishing and monitoring rates. Furthermore, the Council has established that the sole person within the City that can execute hedges and bilateral trades on behalf of the City without prior approval from Council is the General Manager. SE, as a consulting engineering firm to a number of public utilities, recognizes this as a common practice across the industry; what is uncommon about the implementation of this delegation of authority is that there were not any mechanisms put in place to allow for secondary or backup authority, in the event that the person filling this role is not available.

Deputy General Manager of Utilities

The Deputy General Manager of Utilities is a relatively new role, developed in 2013, designed to help relieve some of the growing administrative burdens on GUS General Manager of Utilities due to the split responsibilities between the City and GUS. This role is currently held by Mike Babin. Mr. Babin oversees the daily operations of Utilities and Transportation departments and various aspects of departmental performance; furthermore, the Deputy General Manager develops, monitors, and evaluates various strategic planning initiatives, programs, and projects.[3] In addition to these functions, the Deputy General Manager

[2] Shown in the documents presented in Appendix A and B.

[3] Additional and more detailed descriptions of the Deputy General Manager's responsibilities can be found in Appendix C.

oversees the Energy Resources Management department, the group directly responsible for overseeing the wholesale power contracts. This role is also identified as the person responsible for performing the functions of the General Manager in their absence; however, there is a general understanding by GUS Staff that the ability to transact on hedges and bilateral transactions does not extend to the Deputy General Manager under these circumstances.

Manager of Resource Planning and Integration

The Manager of Resource Planning and Integration was a position designed and filled in late 2013. Technically, this position remained in the City's finance department until 2016. This role is currently held by Mr. Chris Foster. As the manager of the Energy Resources Department, the Manager of Resource Planning and Integration is the direct manager of the wholesale power contracts, along with many of the ancillary functions relating to that role. This includes the development and maintenance of various resource plans, market and pricing forecasts, and models relating to consumption and use for both the water and electric departments.

As it specifically relates to the wholesale power contracts, the Manager of Resource Planning and Integration is the primary point of contact for the City's current energy manager and power supply consultant. Therefore, it is incumbent upon the position that the person responsible must be well versed in market trends, events, and forecasts to verify and direct the energy manager and wholesale power supply consultant according to GUS and City strategies; in some instances, this may include challenging these outside resources as to whether the strategy presented is in the interest of the City, the Utility, or its customers. This position also has responsibilities related to the City's cost-of-services, cost forecasting, rates and fees for both the electric and water utilities.

External Energy Manager and Power Supply Consultant

While, functionally, the Energy Manager and the Power Supply Consultant can be separate roles external to the organization, since at least 2008, they have functionally rested with Neil McAndrews. Mr. McAndrews has been a consultant to GUS to advise the City on matters regarding the ERCOT and natural gas markets. Prior to the break with LCRA, Mr. McAndrews provided market advice relating to the Market Purchase Option (MPO), a provision in the LCRA contract that allowed customers to receive up to ten percent of their energy from other counterparties in the ERCOT market. Mr. McAndrews also worked significantly in reviewing LCRA's facts and figures relating to new generation projects in which they were considering investing. He helped the City develop, publish, and evaluate the RFPs that eventually resulted in the contracts for the Spinning Spur wind farm and the Buckthorn solar farm, as well as the contract with Mercuria.

Currently, functioning more as the City's energy manager, Mr. McAndrews develops and prepares strategies relating to management of the wholesale power contracts. This means the development of bids in the long-term and monthly congestion revenue rights (CRR) auctions with ERCOT, as well as verifying and developing energy schedules to be delivered to the City from its renewable resources. In doing so, Mr. McAndrews works to sell excess energy in the ERCOT Day Ahead (DAM) and Real Time (RTM) markets to optimize their value.

1.5 Important Background Issues and Timeframes

In the review of the City's current wholesale power supply situation, it became clear that there were important issues and milestone events that impacted the City's approach and planning related to constructing the City's wholesale power contracts.

- Integrated Resource Plan (2008): The City embarked on an electric resource planning project in 2008 in order to understand the wholesale energy market and as part of the due diligence related to the

LCRA contract renewal or extension decision. This IRP process had been established as an industry best practice, primarily for utilities that owned generation assets and had decisions and alternatives to consider for future power supply. The IRP process examined and identified all types of generation resources and fuel types along with demand-side alternatives including energy efficiency, load management and energy conservation.

The 2008 IRP eventually settled on a 30 percent coal, 30 percent natural gas, 30 percent nuclear, and ten percent market purchase contracts and was internally referred to as the 30/30/30 IRP. The strategy behind the IRP was to future-proof the contracts by having low or no-carbon emission fuel options comprising the majority of the contracts, in an effort to mitigate against environmental regulation, through the natural gas and nuclear components, but recognize the then low-cost benefits of coal in the contracts. To accomplish the goals identified in the IRP, GUS would have to contract its power supply contracts with specific generation assets in the market. This is a generally accepted practice by electricity market participants as a way to point their power supply towards certain types of generation or to specific power plants, even though the electrons produced from the generation facility may not end up serving the contracted market participant because the contract rate that the market participant pays to the generator goes specifically towards the cost to operate, maintain, and produce energy from that plant.

The impact on the contracts of having a wholesale power contracts based on capacity rather than energy is that the contracts is going to have excess energy against the load the contracts is required to serve, otherwise termed a long contract or long in energy, during various market intervals. This is quite common among market participants due to variations in forecasting load and production, and very rarely does the load and production match. However, with a strategy to cover peak load demand through generation tied capacity contracts, the contracts can become significantly long during periods where a utility is experiencing low loads, such as the Spring and Fall and nights and weekends. These positions are often manageable with appropriate planning and oversight, but to do so, an organization must have internal market expertise and flexibility that allows for quick transactions within acceptable risk boundaries. In meeting both of these conditions, a market participant can manage their long position to transact on favorable conditions in the market to mitigate risks that they are bearing through the long contracts and its exposure in the DAM and RTM.

- LCRA Contract Notice (June-2011): In the late 2000s, LCRA and its customers began coordinating on contract terms and agreements regarding extending or renewing the wholesale contract. The existing power contract set the date of June 25, 2011 as the date whereby wholesale customers would provide notice to LCRA regarding extending or renewing the existing power supply contract. After careful consideration, the City and ten other utilities[4] provided notice to LCRA that it would not renew, extend, or agree to the contract extension. This 2011 notice was significant for the following reasons:
    - The result of this notice and the position taken by LCRA regarding the existing contract meant that the City would continue to purchase the majority of the City's energy requirements from LCRA through June 25, 2016.

[4] The complete list of customers who notified LCRA that they were not going to renew were Central Texas Electric Cooperative, the City of Boerne, the City of Georgetown, the City of Seguin, the City of Yoakum, Fayette Electric Cooperative, Guadalupe Valley Electric Cooperative, Kerrville Public Utility Board, New Braunfels Utilities, and San Bernard Electric Cooperative.

- For practical purposes, the City had a significant period (approximately five years) to develop strategies and take steps to have a City-directed power supply contracts in place June 25, 2016.
- In effect, 2011 notice ushered in a new era for the City. A date of June 25, 2016 was set as the date whereby the City would be responsible for supplying 100% of the City's power and energy requirements.

- LCRA Contract Early Termination Negotiations (May-2012): Georgetown began coordinating with six of these other utilities[5] that culminated in providing a notice of breach of contract to LCRA relating to the treatment of customers who opted to extend the contract against those who decided to leave LCRA in 2016.[6]
- LCRA Contract Early Termination (June-September 2012): Over the course of several months this group negotiated to either resolve the contract breach or be allowed an early termination from the contract with LCRA, but the discussions proved unsuccessful. Eventually, this issue led the group to provide LCRA a notice of breach of contract on June 28, 2012. Shortly after this notice, the seven utilities sent LCRA a Notice of Termination Letter on August 13, 2012 and a Contract Termination Letter on September 13, 2012. As of the effective termination date of the contract, the City became responsible for the entirety of its wholesale power supply obligations.

[5] These included Central Texas Electric Cooperative, the City of Boerne, the City of Seguin, Fayette Electric Cooperative, Kerrville Public Utility Board, and San Bernard Electric Cooperative.

[6] One important element of the negotiations included an issue related to LCRA's equal treatment of customers who opted to not against those who opted to extend the LCRA contract. Those that had extended had the ability to access the ERCOT power supply market for a portion of their power supply requirements through a new program called the Customer Supply Obligation, an evolution of the MPO program. For those who had decided against extending the contract, LCRA denied that opportunity, an action that violated a clause in the LCRA contract that forced all LCRA customers to be afforded the same opportunities, benefits, and costs as any other LCRA counterparty.

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SECTION 2: FINANCIAL IMPACT OF POWER CONTRACTS

2.0 FINANCIAL IMPACT OF POWER SUPPLY CONTRACTS

2.1 Budgeting

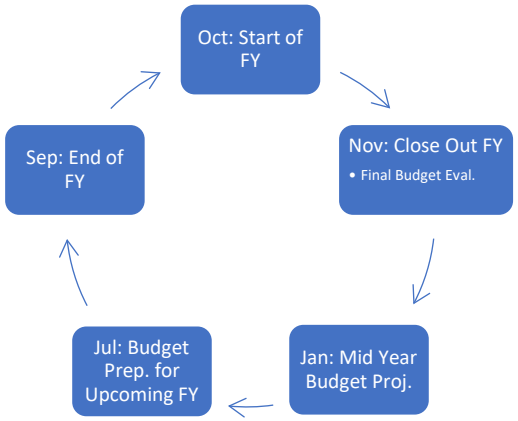
The practical application of the performance of the contracts first manifests itself in the preparation of the City's budget and Certified Annual Financial Report (CAFR).[7] The City's budget and CAFR serve important roles relating the operations of GUS, helps the City identify whether there are adjustments necessary with the PCA, while the latter contributes to the evaluation of the financial health of the electric utility. Where these are particularly important is the intersection of the City's Fiscal Year, which runs from October 1 to September 30, and natural revenue cycle for GUS, where less revenue is generated in Winter while more is generated in Summer due to natural cycles in energy consumption and sales.

- **Timeline**

The development of the budget for wholesale power supply costs, its updates, and its year-end evaluation have proved problematic for the City primarily due to conflicting timelines between the City and the wholesale power supply market. The conflict in the timelines stem from the Summer being the highest revenue generating months of the year due to greater kWh sales and the period with the greatest pricing volatility in the ERCOT markets. Meanwhile, the City completes is budget for the upcoming fiscal year during that same period, closing out the fiscal year at the same time as the end of the defined Summer season within ERCOT. This naturally leads to some conflicts, as budget projections are traditionally developed on historical production, and with the cost and revenues for such a market dependent contracts still in flux during budget preparation season makes it very difficult to determine budget forecasts for the upcoming year.

To address this issue, the City has resolved to introduce a budget adjustment following the completion of the fiscal year as an accommodation. This budget adjustment comes relatively yearly in the fiscal year, usually in November. Figure 5 below illustrates the budgeting cycle with key steps by month.

Figure 5 - Annual Budget Planning Cycle



This end of year reporting is a function driven by several things. The primary of these is a driven by a desire to get the end of years numbers to be as accurate as possible; practically, this means relying on settlement invoices from GP&L, functioning as the City's QSE, rather than on any internal data that GUS may maintain.

[7] The CAFR, in this instance, refers to the variety of end of year reports that the City prepares for either internal or external consumption; the CAFR is one of these. CAFR was chosen because most of the other end of year reports either fee into or are derived from information within the document.

In preparing this report and in discussions with GUS staff, it was not clear whether there is an internal methodology for tracking the daily settlement of the GUS contracts. Some of this is driven by a data availability issue, primarily that GUS does not get real time output reads from the generation facilities and is, therefore, dependent upon GP&L to report to GUS the MWh delivered to GP&L on behalf of GUS from each asset. Without knowing the volume of the energy produced, it becomes difficult to maintain any meaningful internal tracking sheets. GUS has taken steps to reduce the lag to report these values by having GP&L produce weekly reports of production, trades, and settlements reported to GP&L. These reports are intended to be interim, with preliminary settlement data, to be used expressly for budgetary and planning purposes and not meant to replace the monthly invoice that is based on verified data from ERCOT. While this helps reduce the data lag, there is still a one-week gap between the last day reported on the report and the date the report is received. This means that, at best, GUS is receiving data for evaluation relating to its contracts within seven days from the end of the month, but depending on when the month ends, could be up to fourteen days. For the end of the fiscal year, that means the last preliminary data for the month could be received in the middle of October, with the final invoice sent to GUS from GP&L about a week thereafter.

With the City striving to evaluate forecasts and revise its budget as quickly as possible following the end of the fiscal year, it is imperative for GUS to be able to incorporate the data that it receives from GP&L and its other providers as quickly as possible into its models and subsequent reports. It may not be feasible to expedite the process, but as a core imperative to the City, this reporting function appears to not be receiving the appropriate priority, according to City management.

- **Forecast Accuracy**

Perhaps the biggest driver to get accurate budget numbers as quickly as possible is that budget forecasts and subsequent revisions are significantly different than the realized settlement of the contracts. While no forecast is perfect, there have been some fiscal years where the initial budget projection and the realized settlement have varied by more than $10 million. An almost 25% discrepancy between the initial forecast and the realized settlement has ramifications across GUS and City budgets. Table 7 identifies budgetary performance over the past three fiscal years.

Table 7 - GUS Purchased Power Performance

		Revised Projection		Realized Settlement		
Fiscal Year	Initial Budget	Total $ Value	% Diff. to Init.	Total $ Value	% Diff. to Init.	% Diff. to Rev.
FY 2016	$34,000,000	$33,607,125	-1.16%	$40,321,083	18.59%	19.98%
FY 2017	$36,500,000	$39,500,000	8.22%	$46,038,447	26.13%	16.55%
FY 2018	$42,000,000	$45,000,000	7.14%	$53,657,284	27.76%	19.24%

While there are significant adjustments between the initial budget projection and the revised budget projection, published in November, the difference between the initial budget projection and the realized settlement values are substantially off. Even during the revision process, there is a clear disassociation between the forecasting methodology and the revised results. The fact that, for FY 2018, the revised budget

forecast still under-projected the total settlement value of the contracts by 19.24%, or $11.6 million, limits the credibility of the forecasting tool in the budgeting process. Given that the budget originates in the Energy Resources Management department, there was a clear failure by the department to either recognize that there was either a problem in the forecast methodology or to appropriately report the lower and upper bounds within the forecast.

Forecasting contracts performance can be a very difficult task due to the substantial number of significant variables influencing market behavior and prices. Based on discussions with GUS staff, the method regarding the approach to developing the budget was to rely on forward curves in the market. This can be a relatively easy way to value the estimated production within the contracts against the market. However, forward market prices are not indicative of actual settlement prices, simply the value that market participants are willing to bear to hedge their risk during a particular interval. Therefore, when preparing a budget forecast, unless the excess contracts is hedged at that price, the forward prices in the market have little bearing during the real settlement of the energy. The result is that the contracts can be vastly over-valued, resulting in a lower budget forecast, compared to performance in the market, particularly during periods where pricing volatility did not occur as projected.

This is not to say that using forward markets is an incorrect methodology to performing the budget forecast, but it must be one of many approaches, producing a range of results, from which the GUS staff and the City can evaluate which one to prepare the budget around. With a single value reported to the City's finance department and City management, there becomes an implication that only one, potentially flawed, methodology was used for developing the cost estimate for the wholesale power contracts.

2.2 Impact on Retail Electric Rates

Rates and billing are generally where the electric utility interacts with its customers most directly. This interaction occurs monthly, and when electric rates are on the agenda for review by the Council, it can prompt citizens to become involved with city government, often for the first time. A cost of service and rate study is a comprehensive evaluation of the financial health, wellbeing, and status of the entirety of the electric system and to identify imbalances in the cost recovery associated with each rate class, specifically whether some rate classes are subsidizing others. These studies are often precursors to changes and updates to assessed rates to customers. The general practice among electric utilities is to conduct a cost of service and rate study every three to five years, depending on growth and changes on the system.

Between June and September 2018, GUS made several presentations to the GUS Board and to City Council regarding a cost of service and rate study that the Utility had commissioned. This was an update to the previous cost of service study, which was last completed in 2013 but started in 2011. The prolonged study period during the previous cost of service study was a result of the LCRA contract dispute and its uncertainty as to whether there would be any additional costs that GUS would be liable for, should the Utility have been found to be in breach of the contract. While there was a difference in five years from the completion of the 2013 and 2018 studies, the City has an internal target to complete a cost of service study and validate its rates every three years.

Following the completion of the cost of service study, the City opted to pursue a rate adjustment to the City's rates to help in the recovery of increased expenses to own, operate, and maintain the electric system. For residential customers, this resulted in an effective rate increase of $4.80 per month, collected exclusively on the Customer Charge, a fixed fee in the electric tariffs that is designed to recover the administrative expenses

relating to electric system operations. This rate change, upon approval, was set to take effect on January 1, 2019.

On January 22, 2019, however, the City announced that it would be increasing the PCA for electric customers. The PCA is a component of the rates that is designed to recover a portion of the wholesale power costs assessed to the City. As this rate component is designed to capture the naturally occurring variance in wholesale power costs, changes to this, and only this portion of the rate can be implemented without Council approval (City of Georgetown 2018).[8] The $0.0135/kWh increase to the PCA was attributed to declining reserves dedicated towards maintaining wholesale power cost stability (City of Georgetown 2019). GUS knew that these reserves were declining but balanced this reality with an optimistic forecast of the long position for the summer season, and therefore opted not to increase the PCA. The practical reality of wholesale power expenses is that they vary monthly, despite the best implementation of fixed wholesale power expenses.[9] With the increase to the PCA, the average residential customer's bill increased an additional $12.82 on their monthly bill (City of Georgetown 2019).

With two rate increases happening in such proximity to each other, the average customer's bill from January 2019, assessed for consumption in December 2018, and March 2019, assessed for consumption in February 2019, increased $17.62. GUS management, in their interviews, stated that the PCA increase is designed to be temporary and that they could reduce the PCA significantly within eight months of implementation. Part of the reason for the drastic increase in the PCA is the considerably condensed timeline that the City is striving to recover the shortfall in budgeted wholesale power supply costs to restore fund reserves to acceptable levels.

A major factor in the declining reserves related to the wholesale power cost contracts was the internal target GUS used for budgeting purposes regarding the energy portion of the wholesale power cost expenditures. Beginning in September 2015, GUS began planning around a target energy only wholesale power cost rate. The collective cost of the PPA on the wholesale power contracts is significantly higher than the target price for the contracts. Being long in energy and natural gas means more cost is spread across the total amount of MWh consumed by the City's electric customers.

[8] The City also carries a Transmission Delivery Cost Adjustment (TDCA) mechanism, but with 2018 rate revisions, what had been assessed for TDCA was incorporated into the Energy Charge, effectively setting the TDCA to $0.00/kWh.

[9] The variance in wholesale power cost expenses calculated under the can be attributed to misalignment of retail billing cycles against calendar month billing cycles under wholesale power supply contracts and additional market costs and fees that the City is required to bear.

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SECTION 3: ELECTRIC RESOURCE MANAGEMENT ORGANIZATIONAL ASSESSMENT

3.0 ELECTRIC RESOURCE MANAGEMENT ORGANIZATIONAL ASSESSMENT

Section 3 indicates the contracts for power supply are not performing at a satisfactory level. The responsibility for the current contracts and the performance of the contracts resides with the GUS Electric Resource Management (ERM) business area, which includes the internal GUS staff and external resources described in Section 1 of this report. SE evaluated the organization of the ERM and identified specific areas within the organization that likely contributed to the situation.

3.1 Transition from LCRA Contract

The transition from the LCRA full requirement contract to energy independence lacked sufficient staff and staff resources to adequately manage the change in contracts structure.

The transition from LCRA as a full requirements power supplier in 2012 was a significant milestone for the City of Georgetown. For decades, behind the scenes at LCRA, numerous analysts, contracts managers, and risk managers managed a complicated generation contracts that included fossil fuel assets, renewable assets, and purchase power agreements in order to meet the electricity demands of the wholesale customers, such as Georgetown.

With the departure from LCRA in 2012, a new era was ushered in as the City began to take ownership in the development and implementation of its own power supply contracts. The contracts were developed and constructed through 2016 with much of the complexity of the LCRA contracts, which introduced significant risk as well. However, within the organizational structure of the City of Georgetown, little was done to address the need for the appropriate staff or outside consultants necessary to manage contracts of this complexity.

Many of the other wholesale customers who left LCRA at the same time as Georgetown retained outside consultants effectively as augmentations to their staff in order to manage the complexities of energy contracts that now were more specifically tied to the market and, as such, impacted by daily and ongoing changes in the market.

3.2 Responsibilities of GUS General Manager of Utilities

Within the current organization, the responsibilities of GUS General Manager of Utilities, are too broad to allow for appropriate engagement in contracts management.

Currently this position is responsible for the following business areas:

- Business and Resource Management
- Customer Care
- Engineering
- Public Works
- Utility Operations

There also exists from a practical perspective, an “other duties as assigned” potential within the organization that can add additional responsibilities to the already substantial responsibility list housed within the Assistant City Manager / GUS General Manager of Utilities role in the City of Georgetown. As a practical matter, given the level of engagement and oversight required to manage an energy contracts of this level of complexity, it is extremely challenging for a person in this role to adequately devote time and attention to this oversight. The demands on a person in this role are vast and potentially changing with some frequency,

yet the demands of complex contracts management are daily and require a level of consistency that most likely is not achievable by a person currently in this role as identified.

3.3 Multiple Single Points of Failure

There are multiple points of failure that can negatively impact the contracts management success.

In interviews with GUS staff, SE identified three single points of failures within the organization that pose a significant risk to the long-term operation of the system. These are The GUS General Manager of Utilities, the Manager of Resource Management and Integration, and the External Energy Manager and Power Supply Consultant. Should any one of the three individuals currently in these roles be incapacitated or unavailable for any reason, the management of the wholesale power contracts is at risk.

- The GUS General Manager of Utilities role serves as a single point of failure in that within that role, the person is the only person authorized by City Council to transact bilateral contracts or to implement natural gas hedges. Because of the significant responsibilities that are allocated to the GM role outside of managing the contracts within the ERM team, it is inconceivable that the GUS General Manager of Utilities could devote the attention necessary to provide required oversight and management of this business area.
- The Manager of Resource Management and Integration, as the focal point for all daily wholesale power supply operations, serves as the one person who is familiar with the intricacies of the daily strategies within GUS. As the party primarily responsible for verifying outside consultant bids and strategies in the DAM and RTM markets, this role serves a critical function in ensuring that the daily management of the contracts meet the established strategies.
- As the primary person responsible for the development and implementation of the GUS generation and load schedules, the External Energy Manager and Power Supply Consultant is, perhaps, the single largest point of failure within the entire system. Within this role, there is significant reliance on daily availability, including holidays and weekends, in order to ensure that opportunities to optimize the resource contracts are maximized. The current selection of outside consultant has staffing limitations needed to support the daily operation needed to manage these contracts, thereby placing significant burden on the current consultant to always be available. Given that the daily scheduling process helps mitigate the risks that GUS may face in the RTM, this role is key to the continued management of the wholesale power contracts, in its current form.

These single points of failure within GUS create significantly more opportunities for critical failure than marginal streamlining of procedures. No single point of failure is worth risking the operations of a multi-million-dollar wholesale power contracts; the fact that there are three single points of failure within the organization is a significant outstanding weakness.

3.4 Organizational Impacts

As GUS transitioned away from LCRA, the organization became increasingly stressed and burdened by the new responsibilities that the ownership of a complex self-supplied power contracts.

As the 2008 IRP called for, the contracts were tied towards covering the peak load through capacity-tied power supply contracts, meaning that GUS was going to be a long position for its energy for the first time in a modern energy market. Evaluating and managing these new-found contracts introduced or exasperated issues within the organization.

- With the new responsibilities relating to self-supply significantly accelerated from 2012 to 2016, GUS found itself needing to craft new contracts for 2016 and beyond in addition to its gap position from 2012 to 2016. In charge of that effort was the General Manager, but because he is responsible for all of GUS, not including his other roles relating to the operations of the City, he delegated most of this responsibility to the Manager of Resource Planning and Integration and the External Power Supply Consultant. Therefore, he was not able to be as vested and involved in the process as he would have otherwise preferred.
- In the management of the current wholesale power contracts, the General Manager's obligations towards other aspects of the Utility and in his role as the Assistant City Manager limit his ability to be more involved with the active management of the contracts. As an identified in Section 3.3, this has ramifications on the contracts, but with the current structure of the organization, very little can be done to increase the General Manager's active involvement in wholesale power supply management.
- The Manager of Resource Planning and Integration was placed in a position to oversee the work performed by the Power Supply Consultant on two very complex contracts, both of which were new to the Manager. As such, instead of serving as a balance to the Consultant and challenging the evaluation of the proposed contracts was instead learning how to evaluate these contracts from the very party he was meant to be overseeing.
- Upon the implementation of the contracts and GUS fully assuming the long contracts position, the Manager's role was isolated as the only position within GUS responsible for verifying the daily bid strategy in the ERCOT DAM and RTM; this role, too, was a new function where the Manager was dependent upon the external consultant to learn how to participate in the ERCOT DAM and RTM in addition to selling long positions in the forward markets.
- The external Power Supply Consultant and, subsequently, the External Energy Manager developed and published RFPs and evaluated market responses in coordination with the General Manager and the Manager of Resource Planning and Integration, guided by the 2008 IRP. As it became clear that continuing to pursue the 2008 IRP may no longer be advantageous to GUS, since it required GUS to lose the fuel diversity identified in the IRP and take long positions within the contracts, the Power Supply Consultant advised the GUS Management, Board, or the City Council that pursuing the identified strategy would place the Utility in a position exposed to market forces. Upon implementation of the contracts, the Power Supply Consultant became the External Energy Manager. Therefore, the External Energy Manager, as the party with access to proprietary models and software and the only one with significant market expertise within GUS, became essential for the daily management of the contracts within the ERCOT Markets. Without the internal expertise within the Utility, there options to verify, evaluate, and reconsider the recommendations became significantly limited.

CITY OF GEORGETOWN

ELECTRIC RESOURCE MANAGEMENT ASSESSMENT REPORT

SECTION 4: FORWARD LOOK AT MARKET AND REGULATORY ISSUES

4.0 FORWARD LOOK AT MARKET AND REGULATORY ISSUES

With such a large portion of the GUS wholesale power supply portfolio exposed to the energy markets, either ERCOT or natural gas, market trends have the potential to significantly impact the Utility's portfolio. Given how complicated these markets are, much of this evaluation is an educated estimate on these trends on the market. Moreover, the forward forecasts evaluated exist only in the moment that they are evaluated; the general trends and patterns may remain relatively constant, but the specific cost or impact to the wholesale power supply portfolio may change as other factors intervene. As such, this section is designed to highlight market trends that may affect the GUS portfolio and in what way they might do so.

4.1 Favorable Trends

- **Diminishing Reserve Margins**

  In March 2019, ERCOT published is Seasonal Assessment of Resource Adequacy (SARA) for Summer 2019, providing an updated assessment of the Summer 2019 Capacity, Demand, and Reserves Report (CDR), published in December 2018. In the SARA, ERCOT reported a 7.4% reserve margin, a historically low level of reserve capacity compared to forecasted generation within ERCOT (ERCOT 2019). This was an expected decrease from the previously assessed CDR for 2019, which estimated an 8.1% reserve margin (ERCOT 2018). What these diminishing reserve margins indicate is that there will be less available generation within ERCOT available during intervals where ERCOT has traditionally peaked. As with many scarcity scenarios, market prices tend to increase. In ERCOT, this is not due to market manipulation, but rather through the dispatch of more expensive resources.[10]

  Note: Additional information related to Diminishing Reserve Margins is included in Appendix E-3.

- **Long-Term System Growth**

  Many of the municipalities along the Interstate 35 corridor in Texas are among the fastest growing communities in the United States; Forbes, in their 2018 rankings, cited Austin-Round Rock Metropolitan Statistical Region as the eighth fastest growing region in the Country (Sharf 2018). As Georgetown serves as the county seat of Williamson County, one of the five counties that comprise the statistical region, the growth that Austin and its surrounding communities will experience will likely continue to affect GUS, too (United States Department of Labor 2018). This potential for significant load growth, both in the short and long-terms, has significant impact on portfolio supply planning.

  Having a long wholesale power supply portfolio position can effectively mitigate this risk, as the energy that is needed by the new and growing customer base is already controlled by the utility. GUS, by purchasing a long position while experiencing high growth, potentially mitigated costly contract carveout provisions, piecemeal contracts serving only three to five megawatts at time, that due to their size, are significantly more expensive. Just like other municipally owned utilities in Texas, such as GP&L and CPS, building a long position in the portfolio can mitigate potential future market

[10] ERCOT dispatches generation resources based on their ability to perform at certain price points, as well as other factors. To significantly simplify the dispatch process, ERCOT evaluates system conditions, then determines whether more generation is needed. If more generation is needed, ERCOT will then instruct the next available generator who is willing to operate at the lowest price to begin producing electricity. When less generation is needed, this process is reversed.

risk, so long as the long position is effectively managed via bilateral contracts and other market mechanisms until it is needed.

- **Resolution of Constraints**

  One of the issues that has been plaguing the Spinning Spur and Buckthorn assets is congestion constraints that force the price paid for the energy delivered to the City is greater than the price paid at the original source of the energy; this is the result of a market mechanism known as congestion. Congestion can be hedged through CRRs, a topic already discussed in previous sections of this document. However, congestion can pose a significant increase to the end cost of the electricity, significantly higher than the initial contract price for the energy.

  The resolution of these constraints, which have or will improve present opportunities for GUS to either stabilize or improve its wholesale power supply portfolio performance compared to previous years, for when these congestion constraints become resolved, the performance of the asset, their associated hedges, and auxiliary costs, such as paying for the energy that would have been produced during a curtailed interval, become considerably more predictable.

  Note: Additional information related to Resolution of Constraints is included in Appendix E-3.

- **Expiration of Federal Incentives**

  The expiration of Federal PTC impacts the operation of wind farms in West Texas. PTCs provide subsidies on a dollar per megawatt hour basis to generators based on the number of megawatt hours produced. Therefore, a common pricing behavior for many wind generators who are receiving the PTC is to set the minimum price that they are willing to produce energy as the product of the PTC multiplied by negative one. This value allows the wind generator to continue to operate at a profit, even though they are technically paying ERCOT to take the wind that the wind farm is producing.

  The net effect of these negative prices is that it drags the mean market price down, not just in the region but across the market as a whole. Any entity that is long power traditionally relies on periods of extremely high prices or sustained periods prices that are competitive with more traditional generation facilities, neither of which ERCOT has experienced for a significant time. However, the expiration of the PTCs may change the market value, as negative pricing becomes less of a norm and more of an exemption. As prices return to a baseline of $0/MWh rather than negative values for energy, the mean market price is likely to increase.

  Note: Additional information related to Expiration of Federal Incentives is included in Appendix E-3.

4.2 Disadvantageous Trends

- **Continued Transmission Constraints**

  Transmission constraints are likely to be lessened with the completion of several projects in the ERCOT market.

  Ultimately, the vast renewable energy resources available to Texas and ERCOT are competing for space, both geographically and electrically. As a result, the ERCOT West Hub and Load Zone can be subject to significant swings in price, as the price is largely dependent upon how much generation in the region is being driven by wind. Therefore, even while the immediate transmission constraints may be resolved, mitigating curtailment risk, the real threat of congestion risk is likely to stay.

Note: Additional information related to Continued Transmission Constraints is included in Appendix E-3.

- **Continued Renewable Energy Penetration**

  Continued renewable energy penetration poses as significant threat to the long-term ownership of energy delivered at the generation node in the West Hub and West Load Zone. Renewable resources are largely concentrated within the same geographical region of Texas, with solar installed in far West Texas and wind installed from far West Texas through the western edge of the Hill Country. This means that the generation resources installed in the region are dependent upon either continued load growth, primarily related to oil and natural gas exploration and extraction, or increased transmission export capabilities to the load centers in Dallas, the Interstate 35 corridor, and Houston.

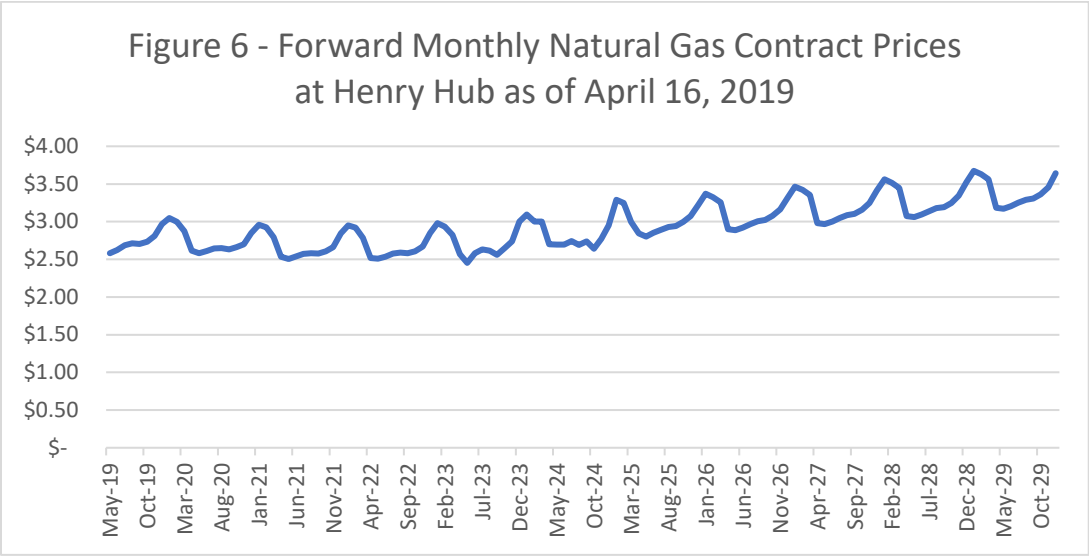
  Note: Additional information related to Continued Renewable Energy Penetration is included is Appendix E-3.

- **Depression of Natural Gas Prices**

  Currently, ERCOT forecasts natural gas to be the predominant provider of electricity in the region for the next five years, as shown in Figure 6. With approximately two thirds of the market share, natural gas generally serves as the marginal fuel source in the market, essentially making natural gas units the price setter in the current and forward markets.[11] Current forward monthly natural gas prices at the Henry Hub are at historically low levels, as shown in Figure 6 (The Wall Street Journal 2019). Forward natural gas prices at the Henry Hub are trading, as of April 16, 2019, roughly three dollars or below on a dollar per million British Thermal Unit basis. The efficiency of natural gas units generally degrades at a relatively minor rate – the assumption used by significant portions of the market is that the cost, year over year, to produce one megawatt of energy at three dollars per million British Thermal Units is about thirty cents.[12] This means, provided there is not a run in forward natural gas prices, that low market prices will be sustained for the foreseeable future.

[11] This may change by subregion within Texas, such as renewables in the West, but this discussion is focused on the entirety of the ERCOT market.

[12] It should be noted that many parties in the ERCOT market also trade at the WAHA hub in West Texas. As of April 16, 2019, forward monthly contract prices for May, June, and July 2019 are trading either in negative values, meaning buyers are being paid to take the natural gas, or close to zero. It is unlikely that these prices will be sustained long-term as new pipelines are built to transport natural gas from West Texas to Central Texas and Houston but could remain low until those pipelines are completed.



Note: Additional information related to Depression of Natural Gas Prices is included in Appendix E-3.

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SECTION 5: CONCLUSIONS AND KEY FINDINGS

5.0 CONCLUSIONS AND KEY FINDINGS

The primary conclusions and finding identified in this section of the report are intended to provide a factual basis for the state of the City's power supply situation and the foundation for recommendations on how effectively address and manage the situation going forward. The findings are developed and organized based on the previous sections of the report.

Section 1: Background

- **Decisions regarding the LCRA contract fundamentally shifted the responsibilities for power supply procurement to the City.** Once GUS terminated the LCRA contract, the Utility became the responsible for supplying the energy requirements for the City's retail electric customers.
- **The date for GUS to self-supply its power supply contracts moved forward from June 2016, the expiration date of the LCRA contract, to September 2012, the date when GUS officially left LCRA.**
- **The early termination of the LCRA contract accelerated the planning and implementation of these new responsibilities.** The GUS Electric Resource Management team worked to implement interim and long-term power supply strategies to meet the needs of the system while striving to beat internal energy price targets for its retail customers.

Section 2: Financial Impact to the City

- **During CY2016 to 2018, the contracts has cost the City significantly more than its budget projections.** By under-forecasting the wholesale power supply costs, the ERM team has forced GUS and City management to make budgetary decisions regarding the Utility in an effort to minimize the impact to customers. Actions were limited and financial positions were exasperated due to delayed reporting of the realized performance against the budget of the wholesale power contracts.
- **With the limited tools available, GUS raised the PCA in 2019 to recover fund balances that was used to support the wholesale power cost contracts.** The limited actions available to GUS and City Management resulted in the drawing on reserve accounts to mitigate impacts to customers. With the end of FY 2018, GUS's reserves could not be drawn upon any more, forcing the City to pass through the cost of the entirety of the cost of the power supply contracts through an increase in the PCA.
- **The cost increases in power supply have challenged the City's reporting, forecasting and budgeting procedures.** Obtaining accurate information and forecasts has been frustrating and has produced ineffective budgeting.

Section 3: Organizational Assessment

- **The structure of the GUS Electric Resource Management business area has contributed to problems with the development, management and performance of contracts.** Concerns in this area include the depth of the current resources, the effectiveness of outside consulting resources along with the observation that single points of failure currently exist within the GUS Electric Resource Management business area.

Section 4: A Forward-Look at Market-Side Issues and Developments

- **Changing ERCOT market dynamics make it difficult to determine the long-term performance of the contracts within the contracts.** Energy markets are complex and subject to myriad significant variables that impact prices.

Note: Additional findings for the Current Power Contracts in included in Appendix E-3.

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SECTION 6: RECOMMENDATIONS

6.0 RECOMMENDATIONS

The recommendations presented to the City are organized in the categories of impact management, policy changes, and issues to study. Each of these recommendations will need to be discussed and developed in more detail. While it is clear from the assessment, that no quick and easy solution(s) are available to the City, with improved management of the contracts and clear understanding of the financial impacts to the City, the overall situation can be improved.

6.1 Management of Current Contracts

1. **Procure third party energy management services.** These services can be provided by firms that are focused on this business area and have considerable depth of resources to ensure all decisions are fully considered and vetted. Energy Managers are individuals or organizations that specialize in the optimization of energy contracts in the long and short-term markets. These functions are often associated with a QSE, but energy managers may be found as a consultant, only.

   Energy managers carry a significant advantage over the current GUS team in that they are significantly more involved with variations and swings in the market, which would allow GUS to, potentially, optimize its assets through more long and short-term bilateral agreements. This would primarily be related to the energy manager's active monitoring the market, which will allow GUS to more rapidly respond and react to market conditions that are favorable to transacting hedges.

   Beyond the additional potential to transact on hedges that could mitigate the long contracts position, an energy manager will also help in the preparation, and if they also serve as the QSE for GUS, submission of bids for CRRs and energy in the appropriate ERCOT auction and market sequences. These bids will be tailored to market conditions and fit with the needs of the GUS contracts. Where the current practice will likely change is in the strategies relating to these positions, unless the City explicitly instructs the energy manager to the contrary.

2. **Implement additional enabling contracts with market participants.** This allows for transactions among a wider pool of market participants.

   These contracts will generally be between GUS and a QSE, but potential counterparties may include other load serving entities in the ERCOT market, such as retail electric providers or another municipal utility or electric cooperative. In establishing these contracts, GUS will lay the foundation to expeditiously transact with other market participants when the market demand facilitates the City's strike prices. These favorable conditions may last for a couple of hours, a couple of days, or a couple of weeks, but whatever the case, the Utility ought to have these in place to accommodate expedient transactions, as recommended by the energy manager or by internal staff.

3. **Direct energy manager to consider appropriate insured products in relation to serving native GUS load and optimizing the value of the contracts in the market.** This will allow the energy manager to extract value and, in some cases, lock-in known costs for existing contracts.

   An insured product can take a variety of forms, but within the wholesale power contracts, would most likely be used to provide a firm generation shape, around which the Utility can plan. An insured product works differently from other, more traditional, power supply arrangements within the GUS contracts in that it ties the forecasted generation production to a shape that can be incorporated into the contracts.[13]

[13] Depending on how the contract is structured and implemented, this may be a financial transaction or for firm power.

Because of the complexity that can be associated with this form of contract, SE recommends that GUS work with an energy manager to implement and manage a contracts with an insured product.

4. **Leverage internal and external resources to increase oversight and accountability for decision making regarding contracts management**.

   The wholesale power portfolio's construction and performance are considerably more complicated than many other matters that come before the City Council, which may require a more involved discussion than typical timeframes may allow. GUS has one of the largest department budgets, with significant revenues and expenditures. Because these expenditures and revenues are tied directly to utility customers who are also citizens of the City, any substantial impacts to GUS, and subsequently to rates, may be magnified significantly. Therefore, allocating the time and resources proportional to the potential impacts to customers will be key in ensuring that future significant decisions relating to GUS will be thoroughly vetted by those parties who are ultimately responsible for the Utility.

6.2 Impact Management

1. **Establish mark-to-market and other valuation procedures**. **This will provide GUS staff, City management, and oversight bodies a clear understanding of contracts performance on a short, medium, and long-term basis.**

   Establishing means and methodologies through which GUS can evaluate its current and future positions will be key, as the Utility will be required to manage its long position for a considerable time. Therefore, GUS must develop myriad methodologies for internal and external reporting and forecasting the financial impacts of its wholesale power contracts.

   The City would benefit by receiving or developing an in-house process for creating a daily MTM report with a clear goal of understanding the contract's future MW position measured against the future fair value of the market and create oversight on this report. The City must understand that MTM accounting is not realized revenue, but rather aims to provide a realistic appraisal of GUS's energy positions through time and this report would be the starting point to managing and controlling the City's expectations on power procurement costs.

   Another benefit for modelling GUS's contracts in MTM accounting style is the City could realistically start evaluating the Value at Risk or VAR of the contract's positions and create policies that mandate VAR threshold controls. These controls would maintain the operational parameters of the contracts at all times. This would allow GUS to develop the operational policy foundation that will help the utility engage the forward energy markets with more knowledge and control of power procurement costs.

   Both MTM and VAR serve as important performance metrics that can help GUS understand the position of their wholesale power cost contracts against the general market. However, because these performance metric benchmark against the forward markets, they gauge the risk to which the contracts are exposed. Therefore, it is imperative that GUS not rely on these valuations for budgeting purposes, due to the fact that these metrics are not necessarily tied to realized revenue, and GUS must pursue other strategies to establishing budget numbers.

2. **Establish reporting guidelines for each level of wholesale contracts management oversight, from the ERM team to the City Council and customers.**

Upon the preparation of forecasts and the incorporation of historical performance into models, this data must be reported to various levels of GUS and the City. How and to whom this data is presented is particularly important, as each level of oversight is concerned with different aspects of the contracts. Practically, this means that the ERM team that is involved in the daily optimization of the contracts will require one set of data and reports, while the City Council will require something completely different. Establishing which level of the organization needs to see what data and in what format is essential to establishing a clear and effective understanding of the wholesale power contracts and its performance.

Implementing these reporting methodologies are going to be a collaborative effort, with those preparing the reports depending upon feedback from those who are reading and reviewing them. This collaborative process will either inform the reviewer of the data being studied or direct the preparer to revise how the data is prepared to more effectively communicate its meaning. This second point is particularly important, as simply presenting the data is not sufficient, as the reviewer may not have a contextual understanding of the information in front of them; instead, the data must be presented to the reviewer in such a way that it communicates not just the findings, but how those findings are impactful. This recommendation may be one of the most difficult and lengthy to implement due to the collaborative nature of each level of reporting, a process that requires significant commitment from those preparing and those reviewing the reports.

3. **Set appropriate target levels for rate stabilization fund and manage power cost adjustment to meet target levels by adjusting periodically**.

The PCA is the only mechanism within the City's electric rates that does not have to be approved by the Council prior being changed by GUS. This is because these are a direct assignment of costs by the Utility of wholesale power supply expenses to customers uniformly across all customers. The City has the flexibility to adjust this rate component at its discretion, depending on the budgeted period for the established PCA. The City's approach has been to adjust the PCA as little as possible, by striving to meet strict wholesale power supply targets, as a way to stabilize costs for customers by insulating them from market volatility. This effort can be misguided, especially in a contract that is so dependent upon market settlement as GUS.

GUS already took significant steps towards this, dedicating GUS reserves as a rate stabilization fund. However, a rate stabilization fund is a reserve account specifically dedicated toward the maintenance and stabilization of the retail PCA that should not be used towards other GUS financial obligations. This is because, when the PCA is drawn upon, it not only impacts the account balance and management of the PCA but also the other obligations to which the fund is dedicated, potentially doubling the impact to the fund, mitigating the efficacy of the account. In maintaining the rate stabilization fund, PCA must be actively managed. This does not mean that the PCA has to be adjusted monthly; instead, the PCA can be set for any interval of time, but should the rate reserve fall outside of certain target thresholds during that period, the PCA will need to be adjusted.[14] This will allow the reserve fund to absorb some of the impact to customers, as the PCA can be adjusted more gradually, as the City can adjust the PCA as it forecasts approaching the upper or lower fund boundaries in the reserve account.

[14] SE generally recommends the PCA be set no longer than annually. Monthly tracking of the PCA is imperative, but adjusting the PCA monthly, quarterly, or annually are all common approaches towards PCA management.

6.3 Policy Changes

1. **Develop and implement comprehensive risk management policy. This policy, while not addressing past issues, will increase the probability of good power supply outcomes in the future.**

   The interviews with GUS personnel identified the perception that the limited scope of the existing risk management policy underperformed in establishing and guiding the evaluation, selection, and incorporation of some of the contracts currently within the wholesale power contracts. A comprehensive risk management policy that establishes boundaries for risk tolerances for all aspects of energy market participation, inclusive of ERCOT market participation, natural gas management, and other, related financial obligations, is important for dictating to Utility staff in what manner they ought to approach the management and administration of the wholesale power contracts. Should the Council or City Management opt to implement some or all the recommendations relating to active management of the long and short positions within the GUS contracts, a comprehensive risk management policy will be imperative in guiding both internal and external parties responsible for executing or approving transactions in their evaluation.

   Establishing boundaries on market behavior is a generally recognized practice among most market participants; there are utilities that are willing to take absolutely no risk in the wholesale power supply market and opt to pay a significantly higher premium to mitigate as much risk as possible while others bear significant risks in the ERCOT RTM. While there are variations to defining what forms and how much risk a utility is willing carry, it commonly known or established what sorts of risks are permitted with regards to market participation. The current City Risk Management Policy does not meet this prudent utility practice, leaving the ERM team to determine among themselves what are reasonable risks for the City to undertake.

6.4 Issues to Study

1. **Study the installation of separate governance structure for Georgetown Utility Systems. While any changes to GUS governance structure will not impact past decisions, this issue is worth considering for future management of GUS power supply and other electric utility management.**

   GUS, as a department of the City, is currently pressed to compete with every other department for money, resources, and attention from the City Council and City Management. Each department has pressing issues to be resolved, and often, the Council must provide guidance on these topics. However, GUS houses the City's utilities, making this department the home to some of the single largest expenditures and revenue streams across all departments.

   Some Municipally-owned utilities (MOUs) utilize other structural models to separate all utilities or just the electric utility from the City. Examples of these structures include CPS Energy, New Braunfels Utilities (NBU), Brownsville Public Utility Board (BPUB) and Kerrville Public Utility Board (KPUB). Other utilities do not separate the Utility function from the rest of the City, instead assigning many of the duties associated with market performance to a risk management committee, a body specifically dedicated towards understanding, overseeing, and instructing the Utility how to act with regards to its risky positions. There are myriad options available to GUS and Georgetown with regards to the correct form of governance structure; it simply becomes a matter of which framework is the best fit for the Utility.

2. **Study the potential implications to the existing power supply contracts and GUS/City in Opt-In scenario. While the Opt-In issues is present for all retail public power entities to consider, having a solid understanding of how existing power supply contracts would be dealt with (especially long-term contracts) is an important element in the potential evaluation of this issue.**

   While beyond the scope of this report, as GUS and the City look to manage the risk and uncertainty that inherently stems from its contracts and mitigate future unforeseen price impacts to customers, opting in to the retail market may present itself as an option. Prior to committing towards that option, the City will need to evaluate all potential impacts to the system. This is not just in terms of the financial implications of just owning and operating the distribution utility, but also including the impacts of the long-term contracts on GUS customers. This study should not be performed just in preparation for opt-in, but as method to understand all the potential financial impacts the wholesale power contracts may have on customers and the City.

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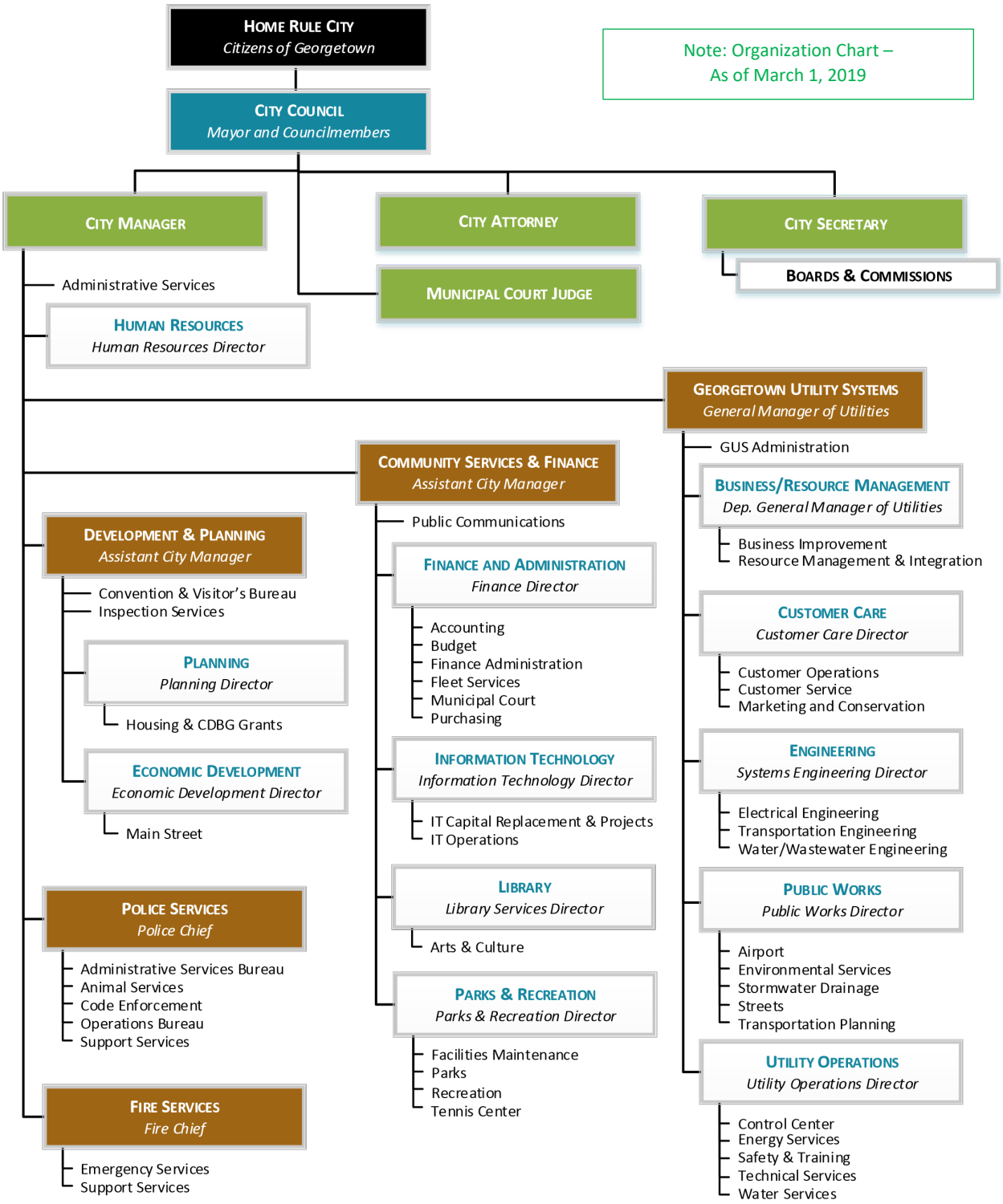
CITY OF GEORGETOWN

ELECTRIC RESOURCE MANAGEMENT ASSESSMENT REPORT

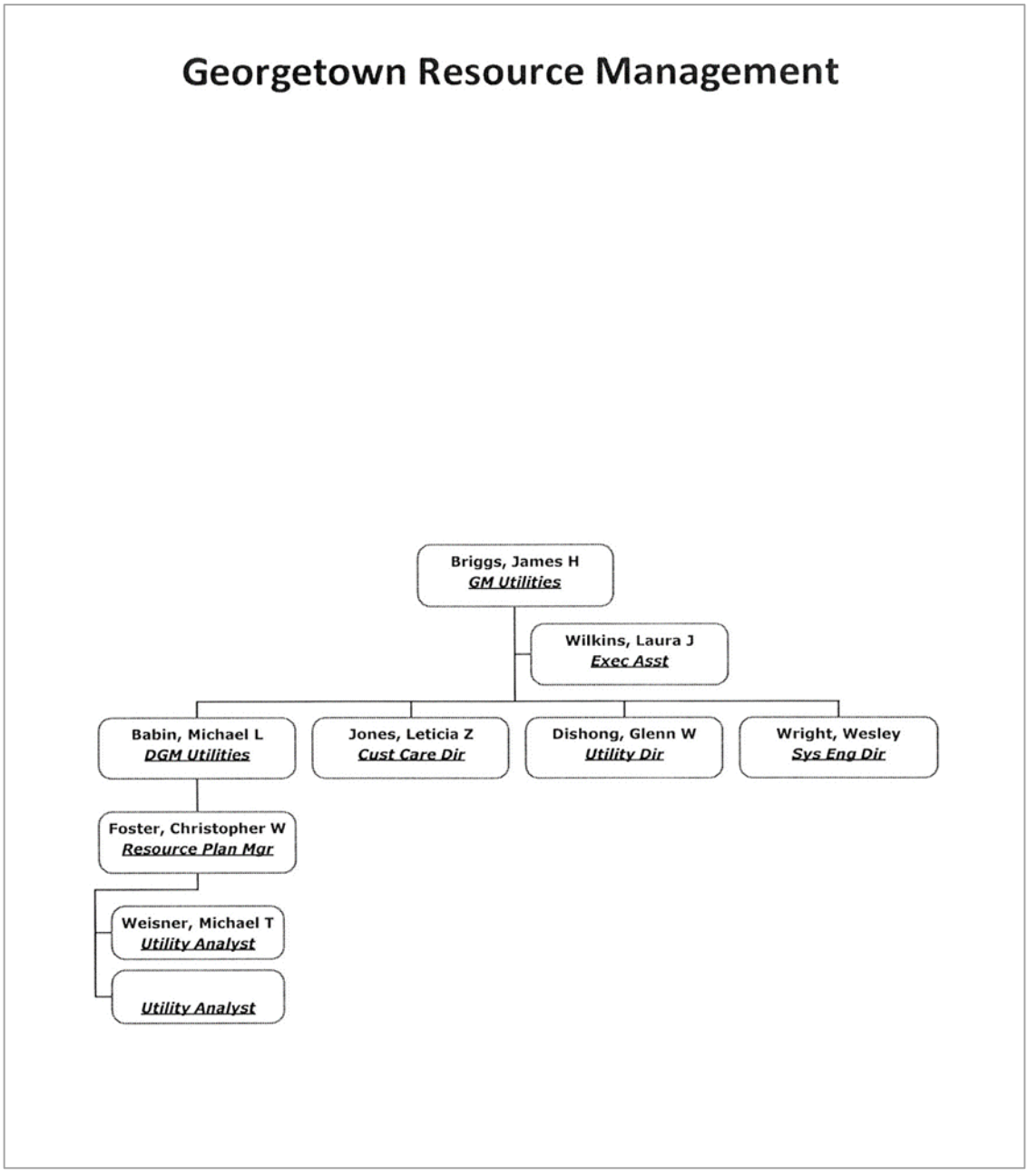
APPENDICES - NON-CONFIDENTIAL INFORMATION

APPENDIX A – CITY OF GEORGETOWN ORGANIZATION CHART



(City of Georgetown n.d.)

APPENDIX B – GEORGETOWN UTILITY SYSTEMS ORGANIZATION CHART



(City of Georgetown n.d.)

APPENDIX C – GUS JOB DESCRIPTIONS AND RESPONSIBILITIES

City of Georgetown
JOB DESCRIPTION

Job Title:	**Deputy General Manager of Utilities**	FLSA Category:	Exempt
Pay Grade:	XX	Effective Date:	10/01/2013
		Revision Date:	

SUMMARY:

Assists the General Manager in leading the Georgetown Utilities Systems Division. Provides direction and oversight to internal functions and operational areas to include direct supervision of Departmental Directors. Represents the Division on inter and intradepartmental management teams in the areas of Information Technology, Financial, Policy and regional planning issues. Work is performed under the broad policy guidance of the General Manager.

ESSENTIAL FUNCTIONS: *Essential functions, as defined under the Americans with Disabilities Act, may include any of the following representative duties, knowledge, and skills. This is not a comprehensive listing of all functions and duties performed by incumbents of this class; employees may be assigned duties which are not listed below; reasonable accommodations will be made as required. The job description does not constitute an employment agreement and is subject to change at any time by the employer. Essential duties and responsibilities may include, but are not limited to, the following:*

- Superintends the daily business operations of Utilities and Transportation Departments.
- Selects, supervises, trains, and evaluates the performance of Department Directors.
- Leads and manages the development and implementation of the Division's strategic planning efforts.
- Oversees the preparation of annual work plans, and performance management systems; ensures that programs and departments function within budget limitations.
- Provides leadership and direction in the development of short and long range plans.
- Interprets data, and prepares studies and summary reports; makes presentations to the City Council, General Manager, City Manager, other officials and advisory boards when required.
- Oversees policy development and implementation, program planning and development, budget development and administration, division and business unit administration, and organizational development.
- Monitors and evaluates the performance of work programs and projects to ensure the proper allocation of resources.
- Represents the Division at professional and governmental meetings, citizen advisory committees, regional agencies, and to the media; stays abreast of trends and innovations in the field of utilities, energy and transportation.
- Assists the General Manager in responding to Division and City-wide issues.
- Insures that Capital Improvement Plans, Business Plans, Marketing Plans all are developed and implemented consistent with the Mission and Strategic plans of the Organization.
- Performs the duties of the General Manager in his/her absence.
- Performs related work as required.

MINIMUM QUALIFICATIONS:

Education, training and Experience Guidelines

- Bachelors Degree from an accredited college or university with major course work in public administration, business, finance or a closed related field. Eight years of full-time progressively responsible experience in public utilities and/or public works division/department in a municipality, Four years of the required experience must have been at a level equivalent to a director, deputy director or assistant director performing tasks requiring similar knowledge and level of complexity as the essential job functions. **OR** Any equivalent combination of education, experience and training that provides the required knowledge, skills, and abilities.

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Knowledge of:

- Business processes, regulations, and laws applicable in deregulated energy markets and specifically in ERCOT.
- Principles, practices and procedures of public and business administration as applied in a large organization.
- State and federal legislative processes and regulatory requirements.
- Emergency operations including National Incident Management System and Incident Command System protocols and operations.
- Budgeting processes and accounting principles, practices and procedures as applied in a large organization.

Skills in:

- Providing clear and persuasive oral and written communications to individuals and groups.
- Negotiating and administering contracts with outside vendors and service providers.
- Resolving conflicts and gaining cooperation among competing interest groups.
- Identifying, implementing, and refining the department's organizational structure to generate desired results as efficiently as possible.
- The use of office equipment, computers and MS Office software programs (Word, Excel, PowerPoint, etc.)
- Understanding of the Communities political environment and sensitivities; ability to function effectively within that environment.
- Establishing and maintaining effective working relationships with other City Departments, policy makers, General Manager's Office and external stakeholders.
- Understanding of IT infrastructure and the practical business applications of such technology.

LICENSES AND CERTIFICATION REQUIREMENTS: NONE

PHYSICAL DEMANDS AND WORKING ENVIRONMENT

What approximate percentage of your total time on this job do you spend doing the following? (These may add up to more than 100%).

Standing	10	%	Walking	15	%	Sitting	30	%	Driving	3	%
Listening	20	%	Talking	15	%	Other (give examples)			/		%

How much weight are you required to manually **lift** and/or **carry** at any one time: 25 Pounds
Is the lifting/carrying done regularly? ☐Yes ☒No How many hours per day? 5 Hours

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City of Georgetown
JOB DESCRIPTION

Job Title:	**Manager, Resource Planning and Integration**	FLSA Category:	Exempt
Pay Grade:	35	Effective Date:	12/17/13
		Revision Date:	01/02/2014

SUMMARY: Under the broad guidance of the Deputy General Manager researches, develops, and implements utility resource plans for the division and ensure that the strategies meet the current climate and regulations. Provides professional and technical support to the General Manager, Chief Financial Officer, and Deputy General Manager of Utilities. Creates and presents research reports to management, executive teams, regulatory officials, City Council and other elected officials.

ESSENTIAL FUNCTIONS: *Essential functions, as defined under the Americans with Disabilities Act, may include any of the following representative duties, knowledge, and skills. This is not a comprehensive listing of all functions and duties performed by incumbents of this class; employees may be assigned duties which are not listed below; reasonable accommodations will be made as required. The job description does not constitute an employment agreement and is subject to change at any time by the employer. Essential duties and responsibilities may include, but are not limited to, the following:*

- Develops and implements energy/water integrated resource plan.
- Designs, develops and implements quantitative models of relevant energy and water markets for analysis of economic data, identifying risk factors and forecasting, supply and pricing.
- Prepares and evaluates requests for proposals; negotiates, prepares, and administers contractual agreements for supply, sales of energy, water rights, fuels hedging and related consultant services.
- Evaluates opportunities for long-term water, energy, fuel supply and transmission by long-term purchase contracts.
- Performs modeling, analysis and forecasting of City load use patterns and resource utilization; identifies factors affecting utility load and use and the related impact upon the use.
- Evaluates resource needs to meet forecasted use patterns and performs technical and economic analysis of resource options.
- Acquires and evaluates preliminary and official market survey data and potential opportunities for power supply purchases and power project participation; interprets and evaluates economic analysis, planning data and study results and produces recommendations for implementation.
- Develops implements and manages strategies to enhance and optimize the Utilities' position within the energy market.
- Develops and implements procedures to effectively improve the utilities resource, transmission and load portfolio within the acceptable risk policy standards of the City. Monitors, evaluates and participates in Federal, State and Local legislations and regulations, such as but not limited to resource adequacy, environmental matters, wholesale operations that affect the utilities' resource supply business.
- Provides economic forecasting and analysis to other departments for cost/benefit analysis, rate making, contract negotiations and forecasting.
- Develops, monitors and controls the annual energy/water resources budget; prepares long-term power cost forecasts and justifications for budget items.
- Develops and implements rate analysis for rate management, trends, costs and analysis impact to rate structure.

MINIMUM QUALIFICATIONS:

Education, training and Experience Guidelines

Bachelor's Degree from an accredited college or university in Public or Business Administration, Economics, Engineering or a closely related field. Five years of progressively responsible utility management experience in resource planning, energy contracts, environmental legislation and regulations, power generation or wholesale operations. A MS or MPA may be substituted for one year of the required experience.

Experience in deregulated energy markets and specifically in ERCOT is preferred.

Knowledge of:

- The principles, practices and procedures of resource planning, scheduling and dispatching of power systems; power pooling, central area operations, resource adequacy, and energy interchange, power distribution, generation and transmission systems supply chain.
- Contract law and Federal and State utility regulations.
- Current environmental legislation and regulations affecting power supply and resource planning.
- Engineering economics and utility financing practices.
- Pertinent Federal, State and local laws, codes and regulations.
- State and federal legislative processes.
- Budget process and accounting principles, practices and procedures as applied in a large organization.

Skill in:

- Handling confidential information and applying strong ethical standards.
- Tracking, evaluating, and responding to evolving environmental regulations.
- Developing short-term, mid-term and long-term strategies related to environmental issues, utility industry regulations and market conditions.
- Producing high level economic forecasts and interpreting economic date.
- Performing complex research, evaluating economic factors of bulk power resources and recommending effective actions.
- Establish and maintaining cooperative working relationships with City employees and officials at all levels of the organization and with representatives of external organizations and the public.
- Understanding the community's political environment and sensitivities and functioning effectively with that environment.
- Resolving conflicts and gaining cooperation among competing interest groups.

LICENSES AND CERTIFICATION REQUIREMENTS
Valid Texas Driver's License

PHYSICAL DEMANDS AND WORKING ENVIRONMENT
Standing, sitting, walking, office environment.

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APPENDIX D – CURRENT RISK MANAGEMENT POLICY

CHAPTER 13.38. - RISK MANAGEMENT POLICY

Sec. 13.38.010. - Authority for staff participation in the ERCOT CRR Market.

Georgetown Utility Systems has the authority to participate in any Electric Reliability Council of Texas's (ERCOT) Congestion Revenue Rights (CRR) auction in accordance with ERCOT protocols and the City's policies to cover any congestion risks associated with delivery of energy associated with any wholesale power agreements the City has in place.

A. The General Manager of Utilities shall be responsible for Market participation and may delegate this authority to any appropriate staff member as necessary.
    1. Any representative of the City participating or evaluating the City's participation in the CRR auction must be able to demonstrate reasonable knowledge of CRRs and the auction process.
B. The Georgetown City Council, Georgetown Utility Systems Advisory Board, the individual Advisory Board Members, and individual Council Members are prohibited from trading or purchasing CRRs.

(Ord. No. 2013-20, § 3(Exh. A))

Sec. 13.38.020. - Management of risk exposure.

A. The Georgetown City Council shall oversee all risk undertaken by Georgetown Utility Systems (GUS).
B. The General Manager of Utilities must report to the City Council the following GUS related transactions:
    1. Any participation in the ERCOT CRR auction;
    2. Any wholesale power agreements;
    3. Any gas futures contracts; or
    4. Any other transactions that expose the City to significant risk.
C. The City Council shall be notified of any risk exposure in the initial report referenced in Subsection B. and shall be informed of the level of exposure to the risk as additional information becomes available.
D. The General Manager of Utilities shall issue a report on the status of participation in the CRR auction to the City Council at the City Council meeting immediately prior to the next month's CRR auction.
    1. The report shall include:
        a. Maximum exposure in upcoming auctions, including CRRs intended to be

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purchased and the bid price that the City will be submitting for each CRR block.

b. Performance of the previous month's CRRs against not participating in the market.
   i. Performance includes total monies spent on CRR purchases and total monies earned on CRR revenue.

c. Total exposure to congestion in the current month.

2. In the first meeting following the end of the fiscal year, the General Manager of Utilities shall report to the City Council:
   a. Overall performance of the past year's CRRs.
   b. The valuation or mark to market of the previous and forthcoming year's risk positions.

E. Should the City Council find that GUS is acting in manner contrary to the risk profile that the City Council had previously established, the City Council may:
   1. Order GUS to cease the offending risk exposing activities.
   2. Issue guidelines for the risk exposing activities to follow.
   3. Allow GUS to continue acting as it had previously.

(Ord. No. 2013-20, § 3(Exh. A))

Sec. 13.38.030. - Maintenance of records.

The City shall maintain records of all monetary transactions and transfers related to participation in the CRR market and of all bid prices and amounts placed in the CRR auction for a minimum of five years or in accordance with the City's records retention policy, whichever is longer.

(Ord. No. 2013-20, § 3(Exh. A))

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(City of Georgetown 2013)