

City of Angleton - Facilities Project

“Finding the right balance”



90% Development Overview - Update

November 2023

Scope of Work Development

90% Development Matrix

5/10 Kickoff meeting

6/28 30% meeting

7/19 60% meeting

7/24 Financing
Workshop

9/26 60% presentation

10/10 Final Scope
Presentation to
Council

11/14 Updated scope
presentation to
council

ECM ID	Opportunity	City Hall	Police	Rec Center	Animal	FS 1	FS 2	FS 3	City Hall Annex	WWTP	BG Peck	Dickey	Bates	Freedom	Veterans	Masterson	Dog Park	Number of Sites per Opportunity
	Lighting																	
1	Interior LED Lighting	Green		Green	Green	Green	Green	Green	Green									7
2	Exterior LED Lighting	Green		Green	Green	Green	Green	Green	Green									7
3	Sports Field LED Lighting										Red	Red		Red				
4	Park Area LED Lighting										Green	Green	Green		Green	Green	Green	6
	Mechanical, Electrical, and Plumbing																	
5	HVAC Unit Replacement	Red	Red	Red	Red	Red	Red	Red	Red									
6	HVAC Armor	Green	Green	Green	Green	Green	Green	Green	Green									7
7	Building Envelope	Green	Green	Green	Green	Green	Green	Green	Green									7
8	Chlorine Generation for Pools			Red														
9	Water Meters	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	
	Building Automation and Control																	
10	Comprehensive Network Building Automation System	Green	Green	Green	Green	Green	Green	Green	Green									8
11	Retrocommissioning of HVAC Units Existing to Remain	Red	Red	Red	Red	Red	Red	Red	Red									
	Sustainability and Resiliency																	
12	Solar PV		Green	Green						Green								3
13	Battery Energy Storage and Microgrid		Red	Red														
14	Back Up Generator			Red														
15	EV Public Charging			Red														
16	EV Fleet Charging	Red																
17	EV Fleet Vehicles	Red																
	Total Number of Opportunities per Site	5	4	6	5	5	5	5		1	1	1	1	0	1	1	1	

Red – removed from continued development Green – fully developed

How were solar locations selected? Solar should be erected where consumption is steady and high. WWTP and Rec Center are the two largest consumers.

Can they be placed elsewhere? Yes, however they would not serve the goal of reducing consumption at the meter.

Why was carport the proposed array option? Roof at Police bldg. has sloped, standing seam roof and Rec center location has mechanical equipment on it so not a lot of unused area on the roof for an array. Will provide shade for public and City vehicles. Open space by Rec Center and Police Dept protected for future expansion by Parks and Police, while WWTP has open field area.

What is the difference in cost of ground mount vs. carport mount? Police Dept carport system is about 15% more expensive than the WWTP ground mount system, on a per watt basis. Rec Center carport system is about 50% more expensive than the WWTP ground mount system, due to the distance from the parking lot to the main electrical point of connection behind the building. This distance would be greater for a potential ground mounted system over the storm drain detention pond to the west of the Rec Center. Ground mounted system in the detention pond would hinder pond maintenance (mowing, etc.) and collect debris from storms. Racking foundation would need to be deeper due to continually wet soil.

What will solar tax credit amount be? 40% of the amount that was spent to build the arrays.

How can SE be sure of that number? Many before have applied and received tax credits, the rates are published publicly, and we have had it vetted by a third-party consultant for this project.

How can the City ensure the buy back rate on the overproduction of kWh? City electrical provider TXU worked with SE to review and confirm our calculations, based on raw data received from TXU.

What are the costs to own/operate solar fields? Insurance of an asset is needed to protect it, similar to any City building. Repairs and maintenance are minimal, one inspection and tune up (if necessary) per year. 30-year warranty on modules, 10-year warranty on inverters

Why are the costs higher on the smaller project? Development and fixed costs for construction costs are spread out over the entirety of the project, less scope ends up being higher cost distribution.

How to balance this project with current needs of the city

Projects are Net Positive

Without any changes to proposed project scopes

Solar Project

Borrow	\$6.5M
<u>ITC Reimbursement</u>	<u>\$1.9M</u>
Actual Project Cost	\$4.6M
Utility ECM Rebates	\$69K
<u>Solar Incentives</u>	<u>\$318K</u>
Net project costs	\$4.3M
<u>Total Svgs. 20yrs</u>	<u>\$7.4M</u>
Cash flow over 20yrs	+\$3.1M

Base Project (no solar)

Borrow	\$1.59M
<u>One time rebate</u>	<u>\$69K</u>
Actual Project Cost	\$1.5M
<u>Total Svgs. 20yrs</u>	<u>\$2.1M</u>
Cash flow over 20yrs	+\$579K

Above includes solar buy back revenue for 2025 – 2044 of \$1.1M

Add 10 additional years of buy back for another \$550k for \$1.7M total (over 30year life of the array)

Lost Opportunity costs without the project

Without any changes to proposed project scopes

2025 – Buy-back Revenue, Energy Savings, and O&M Savings \$136K

2031 – Buy-back Revenue, Energy Savings, and O&M Savings \$1.2M

Total revenue and savings over 20yr cash flow \$7.4M

City can leverage these savings and revenue for other projects or repay debt service.

In 2026, leverage ITC rebate \$1.9M for city projects (roads, drainage, animal shelter, gutters, parks) while also reducing Kw consumption and generating revenue from buy back.

risk of waiting – increased labor costs, loss of Kw revenue generation, ITC goes away

Opportunity Options Vetted

Optimized Payback Project - \$6.5M

Takes advantage of \$1.9M in monetized tax incentives

Description	Estimated Cost	2024 Utility Savings*	2031 Utility Savings**	Operations & Maintenance Savings	Incentives & Rebates		Net Estimated Cost	2024 Simple Payback* (Years)	2031 Simple Payback** (Years)
					TNMP	Fed ITC			
Interior & Exterior LED Lighting	\$ 310,000	\$ 17,000	\$ 34,000	\$ 4,000	\$ 63,000	\$ -	\$ 247,000	12	7
Park Area LED Lighting	\$ 160,000	\$ 2,000	\$ 3,000	\$ 1,000	\$ 2,000	\$ -	\$ 158,000	53	52
Building Automation System	\$ 380,000	\$ 6,000	\$ 11,000	\$ -	\$ 3,000	\$ -	\$ 377,000	63	34
HVAC Armor	\$ 90,000	\$ 2,000	\$ 5,000	\$ 11,000	\$ -	\$ -	\$ 90,000	7	16
Building Envelope	\$ 70,000	\$ 2,000	\$ 3,000	\$ -	\$ 1,000	\$ -	\$ 69,000	35	23
Solar PV - WWTP	\$ 1,470,000	\$ 20,000	\$ 41,000	\$ -	\$ 87,000	\$ 500,000	\$ 883,000	44	22
Solar PV - Police Dept	\$ 600,000	\$ 12,000	\$ 25,000	\$ -	\$ 31,000	\$ 200,000	\$ 369,000	31	15
Solar PV - Rec Center	\$ 3,410,000	\$ 59,000	\$ 119,000	\$ -	\$ 131,000	\$ 1,160,000	\$ 2,119,000	36	18
Chlorine Generation for Pools	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
HVAC Unit Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
Sports Field LED Lighting	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
Rec Center Pool HVAC	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
Animal Shelter HVAC	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
Battery Energy Storage	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
PROJECT TOTAL	\$ 6,490,000	\$ 120,000	\$ 241,000	\$ 16,000	\$ 318,000	\$ 1,860,000	\$ 4,312,000	32	18

* Based on Current 2023 Electric Rates as the Savings Baseline. For the IGA sites, the 2023 baseline electric cost is approximately \$400,000, with the TXU 2020 10-yr contract rate of \$0.04/kWh.

** Based on Estimated 2031 Electric Rates with a new TXU contract, assuming current 2023 TXU 10-yr contract rate of \$0.08/kWh with 4% Annual Escalation.

For the IGA sites, the 2031 baseline electric cost is estimated at approximately \$800,000. With the above measures implemented, the 2031 electric cost would be reduced to \$559,000.

Opportunity Options Vetted

Minimum Project - \$1.6M

Description	Estimated Cost	2024 Utility Savings*	2031 Utility Savings**	Operations & Maintenance Savings	Incentives &		Net Estimated Cost	2024 Simple Payback* (Years)	2031 Simple Payback** (Years)
					TNMP	Fed ITC			
Interior & Exterior LED Lighting	\$ 490,000	\$ 17,000	\$ 34,000	\$ 4,000	\$ 63,000	\$ -	\$ 427,000	20	13
Park Area LED Lighting	\$ 250,000	\$ 2,000	\$ 3,000	\$ 1,000	\$ 2,000	\$ -	\$ 248,000	83	83
Building Automation System	\$ 600,000	\$ 6,000	\$ 11,000	\$ -	\$ 3,000	\$ -	\$ 597,000	100	54
HVAC Armor	\$ 140,000	\$ 2,000	\$ 5,000	\$ 11,000	\$ -	\$ -	\$ 140,000	11	28
Building Envelope	\$ 110,000	\$ 2,000	\$ 3,000	\$ -	\$ 1,000	\$ -	\$ 109,000	55	36
Solar PV	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
Chlorine Generation for Pools	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
HVAC Unit Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
Sports Field LED Lighting	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
Rec Center Pool HVAC	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
Animal Shelter HVAC	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
Battery Energy Storage	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
PROJECT TOTAL	\$ 1,590,000	\$ 29,000	\$ 56,000	\$ 16,000	\$ 69,000	\$ -	\$ 1,521,000	34	27

* Based on Current 2023 Electric Rates as the Savings Baseline. For the IGA sites, the 2023 baseline electric cost is approximately \$400,000, with the TXU 2020 10-yr contract rate of \$0.04/kWh.

** Based on Estimated 2031 Electric Rates with a new TXU contract, assuming current 2023 TXU 10-yr contract rate of \$0.08/kWh with 4% Annual Escalation.

For the IGA sites, the 2031 baseline electric cost is estimated at approximately \$800,000. With the above measures implemented, the 2031 electric cost would be reduced to \$744,000.

How to balance this project and city needs vs. available funds?

- SE has designed a reduced scope project
- Cost is less, payback is quicker
- Still provides solar with revenue generation
- Still addresses lighting and HVAC needs in facilities
- Still affords the ITC opportunity and the utility rebates
- Best sites for solar have been retained in this project



Opportunity Options Vetted

Additional option - Lowest Payback Project - \$4.8M

Takes advantage of \$1.5M in monetized tax incentives

Description	Estimated Cost	2024 Utility Savings*	2031 Utility Savings**	Operations & Maintenance Savings	Incentives & Rebates		Net Estimated Cost	2024 Simple Payback* (Years)	2031 Simple Payback** (Years)
					TNMP	Fed ITC			
Interior & Exterior LED Lighting	\$ 340,000	\$ 17,000	\$ 34,000	\$ 4,000	\$ 63,000	\$ -	\$ 277,000	13	7
HVAC Armor	\$ 100,000	\$ 2,000	\$ 5,000	\$ 11,000	\$ -	\$ -	\$ 100,000	8	6
Solar PV - Police Dept	\$ 650,000	\$ 12,000	\$ 25,000	\$ -	\$ 31,000	\$ 220,000	\$ 399,000	33	16
Solar PV - Rec Center	\$ 3,680,000	\$ 59,000	\$ 119,000	\$ -	\$ 131,000	\$ 1,250,000	\$ 2,299,000	39	19
Solar PV - WWTP	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
Building Envelope	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
Park Area LED Lighting	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
Building Automation System	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
Chlorine Generation for Pools	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
HVAC Unit Replacement	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
Sports Field LED Lighting	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
Rec Center Pool HVAC	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
Animal Shelter HVAC	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
Battery Energy Storage	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	N/A	N/A
PROJECT TOTAL	\$ 4,770,000	\$ 90,000	\$ 183,000	\$ 15,000	\$ 225,000	\$ 1,470,000	\$ 3,075,000	29	16

* Based on Current 2023 Electric Rates as the Savings Baseline. For the IGA sites, the 2023 baseline electric cost is approximately \$400,000, with the TXU 2020 10-yr contract rate of \$0.04/kWh.

** Based on Estimated 2031 Electric Rates with a new TXU contract, assuming current 2023 TXU 10-yr contract rate of \$0.08/kWh with 4% Annual Escalation.

For the IGA sites, the 2031 baseline electric cost is estimated at approximately \$800,000. With the above measures implemented, the 2031 electric cost would be reduced to \$617,000.

Conclusion

*Projects were designed in tandem with city personnel.
Three options available for consideration.*

What this project will do for the City of Angleton!

- 1 **Monetized tax credit to reimburse 40% of the solar project**
- 2 **Project will bring new technology to the city**
- 3 **Addresses lighting and mechanical needs in your facilities**
- 4 **Provides an opportunity to generate new revenue for the city**
- 5 **Identifies rebates that will bring cash back to the city**
- 6 **Identifies solar incentives that will also bring cash back to the city**
- 7 **Provides a financial path to pay for the project through the guarantee**
- 8 **Angleton can still address current needs along with this project**

Life Is On



Schneider
Electric