# NÔRESCO

## D. EXECUTIVE / FINANCIAL SUMMARY

## **Overview**

Since March of 2021 the City of Fullerton and NORESCO have been developing a self-funding project that would allow the City to make investments in its infrastructure without the need of upfront capital or asking the public for additional revenue. NORESCO is pleased to submit the recommended Energy Infrastructure Modernization project under the RFP #4355. We are grateful to the City of Fullerton Staff, Allie Bridge Energy Solutions, and the City's Infrastructure and Natural Resources Committee for their assistance and recommendations.

This \$8.4M program will require no upfront capital from the City. It will generate approximately \$15 million dollars in savings, including over \$4.5M after completion of the project financing in years 19 through 25. NORESCO estimates this project will create at least 50 local jobs and will utilize local subcontractors comprised of over 95% union labor, as the project is constructed.

The City of Fullerton is developing a track record of commitment to energy efficiency and renewable generation through the work of the facilities management staff and the installation of Solar photovoltaic (PV) generation, energy demand reducing battery systems and electric vehicle

## **Project Highlights**

- An upgrade project with \$8.4 million in self-funding facility improvements
- Installation of renewable energy generation at three locations
- Upgrades to lighting, HVAC and mechanical systems
- Install new electric car charging stations
- Completion of design stage for series streetlight upgrades
- Rigorous measurement-based
  Measurement and Verification Plan
- \$521k annual total savings add up to \$15M over 25 years
- Local Southern California team
  providing engineering and support

charging stations throughout City facilities. The limiting factor has been the lack of funding available for extensive energy conservation commitments. The City is taking a proactive step to introduce a guaranteed energy savings project under California Government Code 4217. When implemented with a proven partner such as the NORESCO team, this program will allow the City to demonstrate the capability of energy cost savings to fund infrastructure improvements, Climate Change reduction strategies, and even large-scale modernization projects. This report contains energy conservation measures which can be bundled into the project scope. A "proposed" project scope was selected to show that savings drivers combined with capital projects can provide a viable project and demonstrate value to the City. We invite the public to view additional information, including a 3D map of where the improvements will be taking place by visiting: https://projects.noresco.com/fullerton/.

**Ready for Success:** The City is poised for immediate success with this project based on the following key points:

- Savings realism and measurement and verification: Savings realism during the Investment Grade Audit (IGA) stage, on site measurements and rigorous Measure & Verification (M&V) reduces the risk of the project failing in transition to construction and annual verification.
- **Detailed construction plan and schedule**: In addition to the description of our local design and construction plan, we have put together a detailed construction schedule included as IGA *Appendix 10: Project Schedule*, demonstrating our ability to get to work immediately and start achieving savings for the City.

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• Financial strength: In addition to paying for itself over the term of the financing, the selected project returns \$4.5 million in excess cashflow to the City in the years following payoff of the financing, while adhering to all the City and State financial constraints.

**Added Value to the City:** The advantages to the City from this project include:

• Savings Realism: Accurate cost and savings project values are valuable to the City in the success of this pilot project. NORESCO projects have a proven track record of accurate preliminary energy audits, such as provided with this proposal, and quick audit completion so the savings can be started. NORESCO's savings realism is the best in the industry with a guarantee miss rate of less than 0.04%. This is the result of a strong aftercare program resulting from commissioning, training, warranty, a robust M&V plan, and a

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"Cost and savings numbers were consistent with what NORESCO provided in the Technical Energy Audit (IFP). Savings have exceeded expectations during the construction period for both electric and water/sewer." John Borders

CIP Coordinator Division of Administration

Hawaii Department of Public Safety

24-hour call center. This track record of delivering sustainable savings coupled with strong financials provides the City the confidence they need to move forward with this program for the pilot and at a larger scale in future phases.

If savings are not realized, the City will lack the funds to pay for the program and other City Priorities. Savings from renewable energy solutions should be based on guaranteed output and measured for the entire term not stipulated. Savings begin with good design and construction and require a robust commissioning and M&V plan based on savings that are measured and not stipulated. Our approach to M&V is to measure major variables during the IGA and after the new equipment is installed. This same realism must also be used when looking at deferred capital cost reductions or Operational & Maintenance (O&M) savings, the savings must be for external costs or is not really savings. Often these categories are used by firms to increase savings numbers based on rough estimates of potential future work the City may need to do or potential reductions in O&M workforce.

The NORESCO team's level of savings realism and rigor during the IGA stage will limit the risk of project failure.

- Local Team with City Experience: The project team is the same team that has developed similar projects together for Cities and other public customers in and around Southern California. This project has been led by the NORESCO engineering project manager and account executive all located in within 30 miles of the City. We will provide local support to this project.
- **Design for Series Streetlight Conversions:** NORESCO will build upon the feasibility report for the Richman streetlight circuit by completing a design package, calculating annual cost savings, and working with area subcontractors to prepare an accurate budget for the project. This work will allow the City to both secure financing and move forward with a conversion of this circuit and create an accurate estimate of costs for the conversion of the reminder of the series circuits.

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In addition to utility cost avoidance, the project will provide the City with the following benefits:

- Reduces operating costs
- Includes much needed but capital-intensive HVAC and mechanical equipment replacements
- Improves occupant comfort
- Reduces the City's carbon footprint as shown in *Figure D-1*.

Figure D-1: Reduction in Greenhouse Gas Emissions







Figure D-2: The total combined reduction in greenhouse gases resulting from NORESCO's proposed project is the equivalent of planting 1,306 acres of trees.

NORESCO welcomes the opportunity to provide the City with a successful project as described in the RFP, site walks and meetings. We have described a proposal project within the guidelines of the RFP and additional potential solutions that will allow us to work with the City to tailor a program to meet your needs. Our Fullerton project team is ready to deliver a successful project implementation as demonstrated in the construction schedule attached as *Appendix 10: Project Schedule*. We have a proven track record of delivering successful projects in Southern California and throughout the State and look forward to continuing our work here, within the City of Fullerton.



Figure D-3: A reduction of 25% in energy costs at the upgraded buildings, parks and parking lots will provide more than \$12M in cost savings over the term of the project.

### **IGA Financial Summary**

The recommend project includes the following highlighted upgrades and deferred maintenance replacements to reduce utility costs at the City Buildings, Parks and Parking lots by 25%. A complete list of upgrades is found in *Table D-1*.

**Interior and Exterior Lighting and Controls Upgrades** - Upgrade of approximately 7,700 lighting fixtures with new LEDs, reducing energy consumption and extending lifespan to 20 years or more. Additionally, NORESCO will assist the City in working with Southern California Eddison (SCE) to convert an estimated 597 SCE owned streetlights to LED under the LS-1 Option E tariff, improving quality of light and savings approximately \$20,000 annually.

**Photovoltaic Energy Generation** – Three new PV systems providing renewable energy to the City facilities and shaded parking at the City Hall and Police Station. Integrated electric vehicle chargers at City Hall provide public access to clean transportation fuel and revenue for the City.

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Figure D-4: Locations of Recommended Renewable Energy Systems



**Chiller Replacements** - Replacement of the air conditioning chiller at the City Hall and Main Library that is well past its useful life and has been costing the City \$30k annually in external repair services.

Figure D-5: Existing Chiller at City Hall to be replaced

#### Table D-1: Recommended Project Scope

ECM	ECM Opportunity	ECM Cost	Year 1 <b>Guaranteed</b> Utility Savings	Year 1 O&M and Option E Tariff Savings	Total Savings
1a,b	Interior and Exterior LED Upgrades	\$1,818,832	\$246,335	\$48,475	\$294,810
1d	Smart City Lighting Controls Pilot	\$94,015	\$0	\$O	\$0
1e	Street Light Upgrades, Design Phase	\$100,577	\$O	\$0	\$0
2a	PV Generation Systems	\$4,366,806	\$136,064	\$0	\$136,064
2b	Electric Vehicle Charging	\$643,045	\$10,985	\$0	\$10,985
3a	Chiller Replacements	\$1,114,626	\$24,390	\$32,924	\$57,314
3c	HVAC Controls Updates	\$50,184	\$21,932	\$0	\$21,932
3d	HVAC Duct Sealing	\$58,139	\$2,893	\$0	\$2,893
3e	SCADA Historian Upgrade	\$106,850	\$0	\$0	\$0
3f	Pool Pump VFDs	\$105,117	\$12,465	\$0	\$12,465
4a	Plumbing Upgrades, M&V Only	\$0	\$5,216	\$0	\$5,216
	Totals	\$8,458,191	\$460,279	\$61,264	\$541,679

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Under California Government Code 4217, the City can generate proven and guaranteed utility and operational savings and reinvest into infrastructure. The legislation allows for project terms of up to 25 years. **This project pays for itself in 18 years generating \$12 million in savings during the payback period and \$1.5 million in years 19 to 25 as shown in Figure D-6.** 



The following financial benefits are provided while strictly adhering to both the state law and the financial requirements provided by the City:

- Energy Conservation Measures Included: This scenario provides a project that clearly demonstrates the value of energy savings projects to help the City solve deferred maintenance issues. In this scenario, cost effective upgrades to interior and exterior lighting and other low payback ECMs throughout the facilities provide cost savings to fund the expansion of renewable energy generation and the replacement of chillers at City Hall and the Main Library, key deferred maintenance issues.
- **Payback:** The payback of this project may extend to limits acceptable by state procurement law, but do not have to. While the state law allows project terms of up to 25 years, the project has a payback term of 18 years.
- Energy per-unit cost escalator, 2.6%: The rate projection used in this scenario is based on third party analysis and considers the expected 1% reduction in electrical generation fees as the City transitions to OC Power. Likely additional increases in electric rates over the term of the project will create additional cash flow to the City.
- Additional Benefits: Additional benefits that are not included in the cash flow include
  - \$1 million in additional electric savings based on the historical average TEP escalation rate of 3%.
  - Over two thousand hours of facilities maintenance labor costs that would be required replace the nearly 7,700 lamps that will fail in the next 18 years if not upgraded to LEDs as a part of this project.
  - Avoided deferred maintenance costs related to the City Hall and Library chillers which have reached the end of their useful lives.
  - O&M training for each ECM as a part of this project.
  - Support for future series streetlight conversion work following the delivery of the preliminary design package for the Richman Circuit.

#### Table D-2: Recommended Project - Project Cash Flow

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Year	Utility Savings	O&M + LS-1 Option E Savings	Expected Total Savings	Guaranteed Total Savings	Repayment of Lease	M&V Service	Total Cost	Net Cash Flow
1	\$483,298	\$81,399	\$564,697	\$541,678	\$486,609	\$27,137	\$513,746	\$27,932
2	\$494,747	\$83,887	\$578,634	\$555,070	\$524,937	\$O	\$524,937	\$30,133
3	\$506,476	\$86,453	\$592,929	\$568,806	\$537,928	\$O	\$537,928	\$30,878
4	\$518,490	\$89,097	\$607,587	\$582,892	\$551,249	\$0	\$551,249	\$31,643
5	\$530,798	\$91,824	\$622,622	\$597,341	\$564,914	\$O	\$564,914	\$32,427
6	\$543,406	\$94,635	\$638,041	\$612,159	\$578,928	\$O	\$578,928	\$33,232
7	\$556,323	\$97,533	\$653,856	\$627,359	\$593,302	\$0	\$593,302	\$34,057
8	\$569,557	\$100,522	\$670,079	\$642,952	\$608,049	\$O	\$608,049	\$34,903
9	\$583,114	\$103,602	\$686,716	\$658,943	\$623,172	\$O	\$623,172	\$35,771
10	\$597,005	\$106,779	\$703,784	\$675,350	\$638,688	\$0	\$638,688	\$36,662
11	\$611,237	\$110,053	\$721,290	\$692,178	\$654,602	\$O	\$654,602	\$37,576
12	\$625,819	\$113,430	\$739,249	\$709,442	\$670,929	\$O	\$670,929	\$38,513
13	\$640,760	\$116,910	\$757,670	\$727,152	\$687,677	\$0	\$687,677	\$39,474
14	\$656,070	\$120,500	\$776,570	\$745,322	\$704,862	\$O	\$704,862	\$40,461
15	\$671,757	\$124,200	\$795,957	\$763,962	\$722,490	\$O	\$722,490	\$41,472
16	\$687,833	\$128,016	\$815,849	\$783,089	\$740,578	\$O	\$740,578	\$42,511
17	\$704,305	\$131,950	\$836,255	\$802,710	\$759,134	\$O	\$759,134	\$43,576
18	\$721,186	\$136,006	\$857,192	\$822,843	\$778,174	\$O	\$778,174	\$44,669
19	\$203,480		\$203,480		\$O	\$0	\$0	\$203,480
20	\$207,489		\$207,489		\$O	\$O	\$0	\$207,489
21	\$211,576		\$211,576		\$O	\$0	\$0	\$211,576
22	\$215,744		\$215,744		\$O	\$O	\$O	\$215,744
23	\$219,995		\$219,995		\$0	\$0	\$0	\$219,995
24	\$224,328		\$224,328		\$0	\$0	\$0	\$224,328
25	\$228,748		\$228,748		\$0	\$0	\$0	\$228,748
Totals	\$12,213,541	\$1,916,796	\$14,130,337	\$12,109,248	\$11,426,222	\$27,137	\$11,453,359	\$2,167,249

#### **Cashflow Parameters**

- Implementation Fixed Price: \$8,458,191
- City Consultant Fee: \$150,000
- Guaranteed Utility Rebates: \$21,641
- Expected renewable energy generation savings shown for years 19-25 based on expected useful life of PV systems
- Utility Rate Escalation: 2.49% Annually
- Lease Interest Rate: 2.6%
- Initial 10% Mobilization payment due in 30 days
- \$19,570 in expected annual savings from SCE LS-1 Option E tariff switch escalated annually at corresponding electric escalation rate.

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### **Pricing Clarifications**

- Project Pricing is based on the Energy Service Agreement provided to the City for review
- No hazardous materials work anticipated or included

### In Conclusion....

- Design review and approval by City (not DSA, State Fire Marshall)
- Construction trailer located at Basque Yard, use of City restrooms permitted

We believe the recommended project provides the City the best opportunity to demonstrate the value of energy savings funded projects. The project was developed in collaboration with the INRAC committee, City facilities management staff, energy management, finance, and procurement staff to mitigate financial risks. This project will meet the criteria required by the State law, continue the stewardship of Climate Change responsibilities, provide visible upgrades at City facilities, reduce the time burden on the maintenance personnel and include key deep retrofits to address deferred maintenance issues. Our local team looks forward to continuing work with the City as we install and support the City on these upgrades and future energy conservation projects in the years to come.