City of Lawrence
Energy Efficiency & Facility Improvement Project

January 17, 2017




City of Lawrence

WILLDAN | 360 energy engineers

Agenda

- Review of project goals and process history
- Performance contract and the role of the FCIP
- Final project pricing and scope highlights
- Energy savings guarantee
- Project financing discussion
- Next steps - approval and implementation

Project Goals

Reduce Costs

- Energy savings guaranteed
- Minimize maintenance expenses on outdated equipment

Upgrade Facilities and Systems

- Replace antiquated or failing equipment
- “Move up” future planned (and potential) CIP project

Improve Energy Efficiency

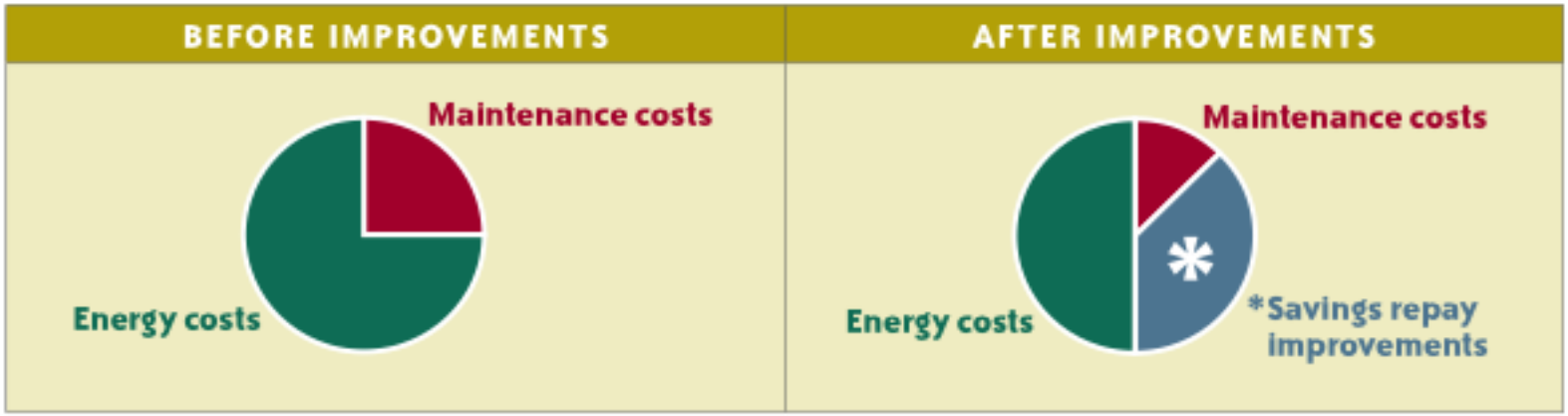
- Minimize energy wasted with outdated equipment and operation
- Remain a regional leader if energy efficiency

Support sustainability and GHG reduction goals

- Proposed project saves 3,201 tons of CO_2e annually
    - Equivalent to taking 676 passenger cars off the road each year
    - Equivalent to annual energy use of 383 homes

What is Performance Contracting?

- A method for making improvements in which energy and operational cost savings cover the debt service.



Three principles:

- Energy savings are identified
- Energy savings pay for the project
- Energy savings are guaranteed

Process History

December 2015

- Commission authorized pursuing energy-efficiency project
- City staff reviewed all pre-qualified Kansas ESCOs provided by KCC FCIP program

March 2016

- 360 Energy Engineers selected following competitive RFP process
- Company history with municipalities and reputation key qualifications
- Markup percentages also the lowest of firms considered

May 2016

- Commission authorized initiating the Investment Grade Energy Audit
- 360 conducts energy audits in 40+ buildings

September 2016

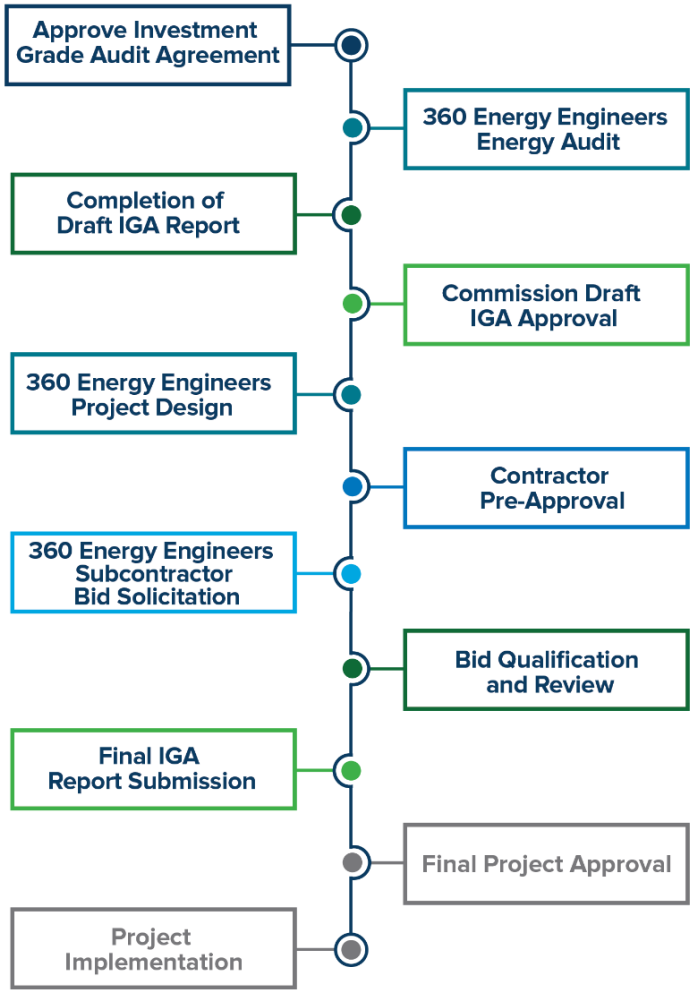
- Commission authorized 360 to finalize project scope, savings and pricing

January 2017

- Requesting final Commission approval of performance contract to implement project

Process History (Sept.– January)

1. Project Design (Sept. – Nov. 2016)
2. Contractor Pre-Qualification
   (Oct. – Nov. 2016)
3. Subcontractor Bid Solicitation
   (Dec. 2016)
4. Final IGA Report Submission
   (Jan. 2016)



Kansas FCIP

KANSAS ENERGY OFFICE
FACILITY CONSERVATION
IMPROVEMENT PROGRAM

Role in the Project

- Pre-qualifies Energy Services Companies to work with Kansas municipalities
- Requires competitive, open-book ESCO pricing
- Provides standard agreement for IGA and implementation contract
- Reviews savings calculations and methodologies
- Reviews design documentation
- Reviews M&V and commissioning plans
- Provides ongoing review during construction and M&V phases of project

360's Role


Continuous Commissioning
Performance Maximization
4
Measurement & Verification
Infrastructure Analysis
Planning & Analysis
1
Energy Auditing
360 Energy Engineers' Services
System Commissioning
3
Project Implementation
Construction Management
Systems Designs
2
Design & Procurement
Subcontractor Procurement

Comprehensive Project Pricing Details — City of Lawrence Energy Efficiency Project

Turnkey Implementation Cost	Cost	Energy Savings	Maint. Savings	Total Savings	Payback
Community Health: Replace Chiller with Premium Efficiency Unit	$209,897	$18,884	$18,497	$37,381	5.6
City Hall: Replace Cabinet Heaters	$18,488	$2,949	$113	$3,062	6.0
City-Wide: Building LED Retrofits, Replacements & Controls	$1,457,914	$152,283	$31,696	$183,979	7.9
Lawrence Arts Center: Replace Chiller with Premium-Efficiency Unit	$185,472	$8,230	$10,455	$18,685	9.9
Public Works: Pole Lighting Upgrades - Downtown, Parking Lots, etc.	$381,913	$30,315	$3,947	$34,262	11.1
City-Wide: Building Weatherization	$145,831	$13,068	$0	$13,068	11.2
Solid Waste Office: Replace Packaged Unit	$18,637	$976	$357	$1,333	14.0
Airport Terminal: Split System HVAC Replacements	$30,148	$970	$1,064	$2,034	14.8
Parks and Rec: Area Lighting in Parks	$299,049	$16,967	$2,389	$19,356	15.4
City Wide: HVAC Controls Upgrades, Additions and Optimization	$1,108,567	$65,296	$3,771	$69,067	16.1
Community Health: Install Electronic Air Cleaner Filtration	$96,294	$5,149	$804	$5,953	16.2
Indoor Aquatic Center: Energy & Indoor Air Quality Improvements	$1,760,249	$71,070	$22,805	$93,875	18.8
Fire Station #5: Solar Power Installation	$241,308	$12,583	$0	$12,583	19.2
Fire Station #2: Replace Outdated Rooftop Units	$44,824	$748	$696	$1,444	31.0
Fire Station #3: Replace Aging Rooftop Units	$58,451	$738	$1,081	$1,819	32.1
East Lawrence Rec Center: Replace Outdated Packaged Units	$154,399	$2,138	$1,978	$4,116	37.5
City Hall : Replace Windows	$347,017	$5,556	$3,522	$9,078	38.2
Community Health: Replace Boilers	$270,409	$0	$5,282	$5,282	-
Holcom Recreation Center: New Packaged HVAC System	$382,439	$5,279	$1,436	$6,715	-
Community Building: Replace Aging Packaged Units	$394,559	$3,051	$3,634	$6,685	-
Outdoor Aquatic Center: Boiler Replacement	$71,566	$0	$1,181	$1,181	-
Parks and Rec: Sports Field Lighting	$1,288,718	$6,981	$6,259	$13,240	-
Outdoor Aquatic Center: HVAC System Renovations	$46,716	$285	$227	$512	-
New Hampshire Parking Garage: Replace HVAC Units with Gas Heat	$49,923	$72	$462	$534	-
Prairie Park: HVAC System Upgrade	$159,136	$0	$1,419	$1,419	-
Fire Station #3: Replace Roof	$129,138	$276	$432	$708	-
Community Health: Replace Roof	$278,593	$307	$0	$307	-
Holcom Rec Center: Sports Field Lighting and New Poles	$955,669	$970	$0	$970	-
Community Building: Replace Roof	$281,462	$116	$0	$116	-
Vehicle Maintenance Office: Add Ductless Mini Split for Server Room	$6,685	$0	$0	$0	-
	$10,873,472	**$425,257**	**$123,507**	**$548,764**	**19.8**

Other Required Program Costs	Cost
FCIP Fee	$95,687
IGA Fee	$64,000
Anticipated Cost of Financing	$255,000

Total Project Amount Financed

$11,288,159

Comprehensive Project Pricing Details

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Heavy Mechanical Projects

Scope Highlights

- Holcom Rec Center HVAC
- Indoor Aquatic Center Upgrades
- Community Health boiler upgrades
- Community Health chiller upgrade
- Arts Center chiller replacement
- Outdoor Aquatic Center pool boiler replacement

Existing LAC air-cooled chiller

Community Health boilers

Light Mechanical Projects

Public Works Scope Highlights

- City Hall cabinet unit heaters
- Solid Waste rooftop unit
- Vehicle Maintenance ductless split
- Fire Station #2 & #3 rooftop units
- Airport Terminal split systems

Parks & Recreation Scope Highlights

- Community Building rooftop units
- East Lawrence Rec Center rooftop units
- Outdoor Aquatic Center AHU and split system
- PPNC Split Systems and Ventilation

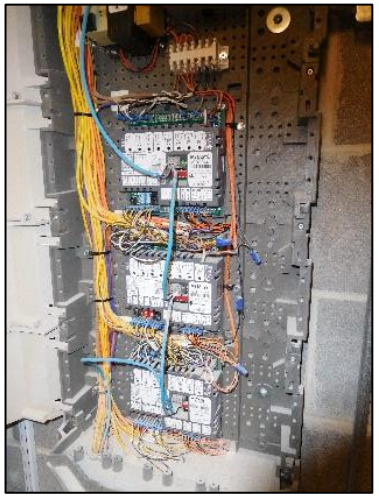
Outdated RTU at Fire Station No. 2

1993 RTU at Community Building

Building Automation Controls

Scope Highlights

- Various buildings internet-based thermostats
- Community Health new direct digital controls
- Fire Station #4 new direct digital controls
- Fire Station #5 new direct digital controls
- Lawrence Arts Center new direct digital controls
- City Hall JCI direct digital controls modifications



Aging JCI System

Existing Windows ‘98 Interface at LAC

Electrical Projects

Scope Highlights

- Various locations sports courts timer controls
- Indoor Aquatic Center electrical panel upgrade
- Electrical connections for various HVAC upgrades

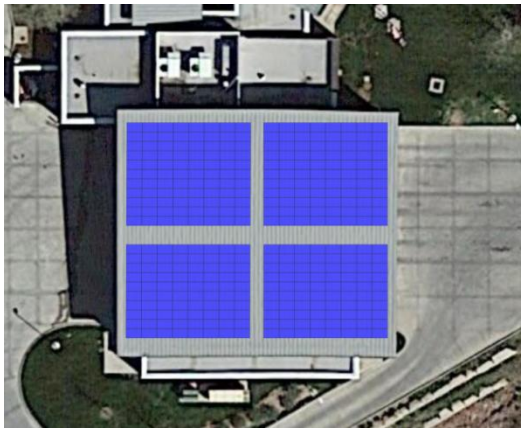
High-power outdoor court lighting

Existing electrical at IAC

Solar Projects

Scope Highlights

- Fire Station No. 5 Solar photovoltaic
- Provides 18% of the building's annual electrical consumption
- Highly visible from US 59 / Iowa St.



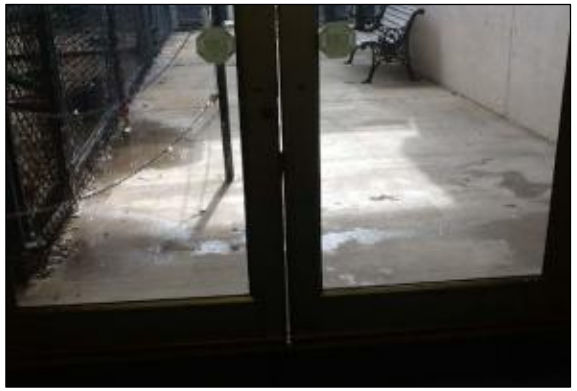
Fire Station No. 5 Roof

Building Envelope Projects

Scope Highlights

- City Hall window replacements
- Various buildings envelope weatherization

City Hall casement windows



Nature Center Doors

Roofing Projects

Scope Highlights

- Community Building new roof
- Community Health new roof
- Fire Station No. 3 new roof

Fire Station No. 3 roof deterioration

Comm. Health roof demineralization

Lighting Projects

Scope Highlights

- Parks lighting upgrades
- City-owned pole-lighting upgrades
- Building lighting retrofits and replacements
- Sports fields lighting upgrades

Holcom (Southwest Field) lighting

City-owned street lighting

Project Financial Overview

Project Funded Using Savings Generated

- Estimated energy savings of $425,257
- Estimated maintenance savings of $40,000
- CIP savings of $1.2M
- Calculated using conservative 3% rate of energy escalation

Addresses Future CIP & Other Infrastructure Projects

- Several projects completed from upcoming CIPs
- Additional priorities addressed that were under CIP threshold or on upcoming CIP

Makes Best Use of Taxpayer Dollars

- Funds already allocated are being used to operate more efficiently

CIP Projects Potentially Impacted

	Project Description	CIP Project #	CIP Request	Cost Paid	Annual Total
2017	Replace HVAC Units - Indoor Pool	PR1701CIP	$330,000	$330,000	$1,050,000
	Roof Replacement - Fire/Med #3	PW17B2CIP	$140,000	$140,000	
	Downtown Canopy Lighting sidewalk and roofing	PW17B4CIP	$350,000	$30,000	
	Community Health Boiler Replacement	PW17B6CIP	$225,000	$225,000	
	Community Health Chiller Replacement	PW17B6CIP	$325,000	$325,000	
2018	Replace HVAC Units - Indoor Aquatics Center	PR1811CIP	$330,000	$330,000	$1,655,000
	Holcom Park Center - HVAC Replacement (Gym)	PR1814CIP	$250,000	$250,000	
	HPSC Ball Diamond Light Replacement	PR1815CIP	$500,000	$500,000	
	Fire/Medical HVAC & General Repair	PW18B1CIP	$120,000	$75,000	
	Community Health Roof Replacement	PW18B3CIP	$500,000	$500,000	
2019	Pole Lighting and HVAC Upgrade Airport	PW19A1CIP	$75,000	$75,000	$125,000
	Fire/Medical HVAC Replacement	PW19B1CIP	$100,000	$50,000	
2020	Lighting Upgrade New Hampshire Garage	PW20B1CIP	$75,000	$75,000	$75,000
Project Totals			**$3,320,000**	**$2,905,000**	**$2,905,000**

Project Financing

Seeking to Issue First Green Bonds in Kansas

- Designates to investors that funds are used for sustainable purposes
- International designation catching on in the United States since 2013
- Process to qualify for “Green” designation already planned to be followed

Financing over 22 year period

- Matching period to life of improvements
- Planned general obligation with market rates determined at time of sale
- Preliminary analysis show financial estimates are reasonable
- Utilizes savings estimate to transfer from each department into debt service fund to make debt payment

Energy Savings Guarantee

Highlights:

- 360 Energy Engineers guarantees annual energy savings of $397,686 (projects additional savings beyond this amount)
- Savings will be measured for four years following contract execution (three years following completion of implementation).
- City has option to extend M&V period at its discretion
- 360 Energy Engineers will compensate the City for any energy-savings shortfall
- FCIP and City have reviewed calculation methodologies and M&V plan; will review future savings reporting
- Maintenance savings: NOT guaranteed, but based on sound engineering principles.

Contract Highlights:

- <u>360 Energy Engineers' responsibilities:</u>
- Has conducted an Investment Grade Audit of City Facilities.
- Has calculated annual energy and maintenance savings associated with the project.
- Will serve as general contractor for the project, managing the construction process and all subcontractors.
- Will monitor the annual energy savings for 36 months after project completion. If actual energy savings fall short of the energy savings guarantee, 360 ESCO shall reimburse the City for the full amount of the difference.
- Will not be responsible for maintenance of systems after installation, but will provide training to City of Lawrence staff on proper equipment operation.
- Will conduct a thorough and systematic performance test of each element and total system.
- Will extend warranties for all equipment to the City.

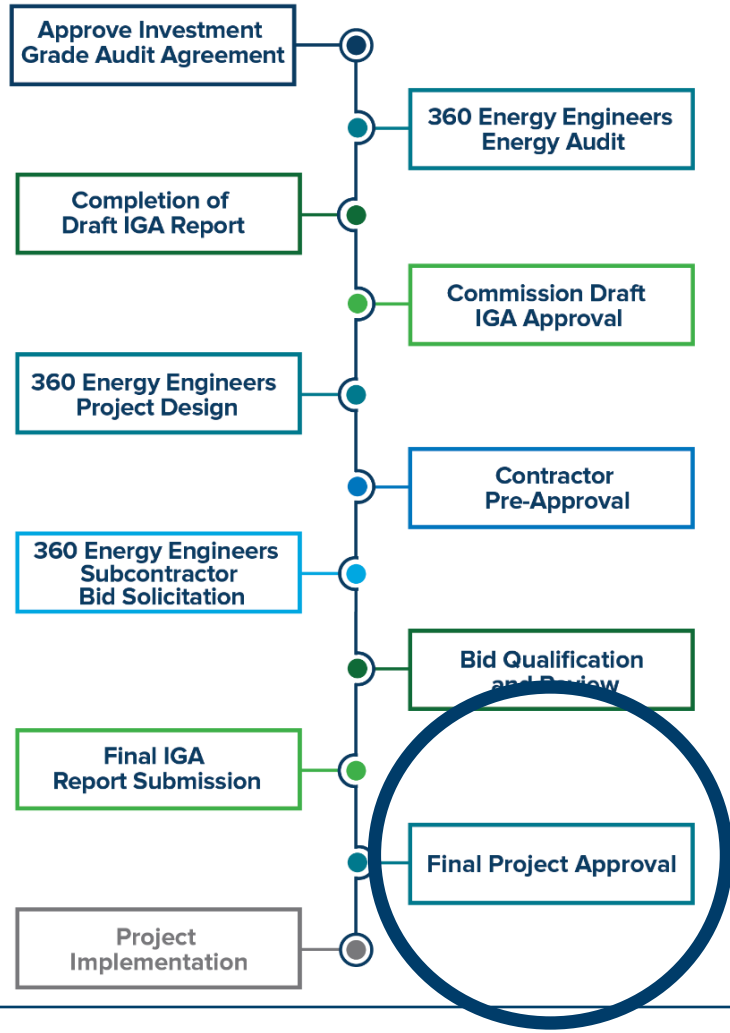
Contract Highlights:

- <u>City responsibilities:</u>
- Accepts the energy and maintenance savings calculations provided by 360.
- Will pay 360 Energy Engineers within 30 days of invoice receipt.
- Will be responsible for maintenance of all systems after installation.
- Will assist 360 in obtaining all necessary permits and approvals for installation of the equipment.
- Will work with 360 to coordinate installation and construction schedules.
- Will own all equipment installed, and will own all rights to the designs.
- Will provide access to City buildings for the completion of the work by 360 and subcontractors.
- Will notify 360 of any material changes that would impact the projected energy savings (i.e. change in use of the building, operating hours, etc).
- Will collaborate with 360 to allow them access to EnergyCAP, our utility tracking software to allow for timely tracking of Actual Energy Savings

Process Next Steps

Final Project Approval (Jan. 2017)

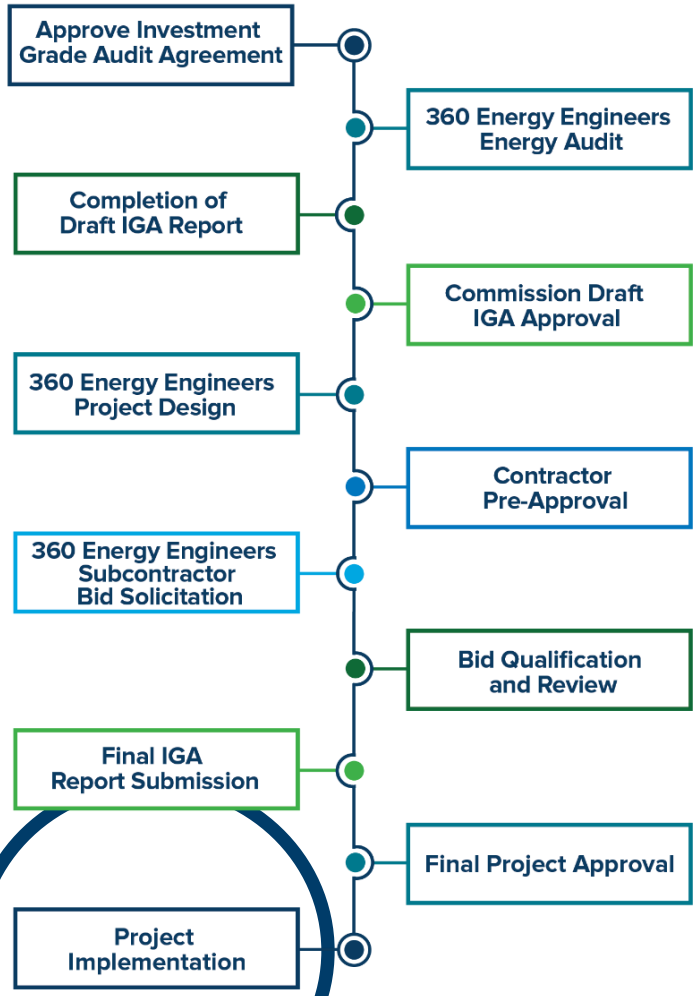
- City staff recommends final project
- Commission reviews staff recommendations
- Commission authorizes project implementation contract with 360 Energy Engineers
- City Commission reviews staff financing recommendations
- Commission authorizes project financing



Process Next Steps

Project Implementation (Feb. – Dec. 2017)

- 360 Energy Engineers manages all aspects of implementation
- Frequent progress updates with City staff
- Written updates to commission
- Full system commissioning
- Ongoing performance maximization
- Opportunity for communications campaign with citizens about energy efficiency



Questions?

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