

**Performance Infrastructure**  
Guaranteed Efficiencies  
DRAFT Development Update



# City Hall

## Initial Observations

- Mechanical equipment at or near end of ASHRAE life
- Mixture of lighting technologies
- Significant maintenance required
- High energy consumption

## Recommendation

- Replace two 6,000 MBH boilers and pumps with three new 3,000 MBH boilers and pumps
- Replace chiller
- Retrofit lighting to LED, add occupancy sensors

## Not included in project – City funds required

- Water piping analysis and repair
- Convert hot water distribution to variable volume

## Expected result

- Significant energy and O&M savings
- Enhanced lighting and control



# Main Library

## Initial Observations

- Mechanical equipment at or near end of ASHRAE life
- Mixture of lighting technologies
- Significant maintenance required
- High energy consumption

## Recommendation

- Replace chiller and cooling towers with right size and efficient new equipment
- Implement demand control ventilation for AH-1
- Retrofit lighting to LED, add occupancy sensors

## Expected result

- Significant energy and O&M savings
- Enhanced lighting and control



# La Crosse Center

## Initial Observations

- Mix of Mechanical equipment age and condition
- Mixture of lighting technologies
- High energy consumption

## Recommendation

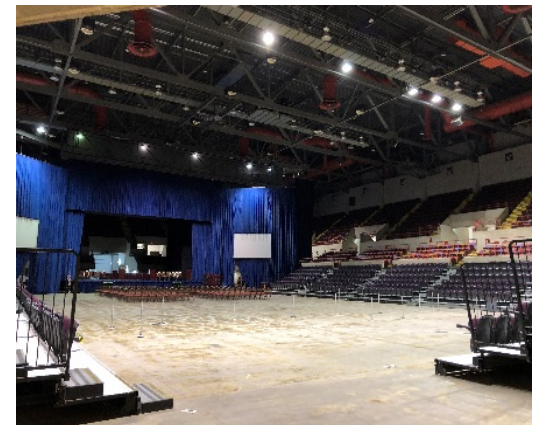
- Replace Arena lighting with LED and controls
- Rebuild Arena AHU in corners
- Replace VAV units in South Hall
- Trane controls update (by Trane)
- Retrofit South hall and lower lobby lighting to LED
- Parking ramp lighting to LED

## Not Included in project – additional design required

- Repair/replace Arena exhaust

## Expected result

- Significant energy and O&M savings
- Enhanced light quality and control



# Municipal Service Center

## Initial Observations

- Mix of mechanical equipment age and condition
- Extensive steam boiler maintenance

## Recommendation

- Retrofit lighting to LED

## Not included in project – City funds required

- Replace steam boiler with two modular high efficiency hot water boilers
- Install gas-fired thermal tube radiant heaters in maintenance bays

## Expected result

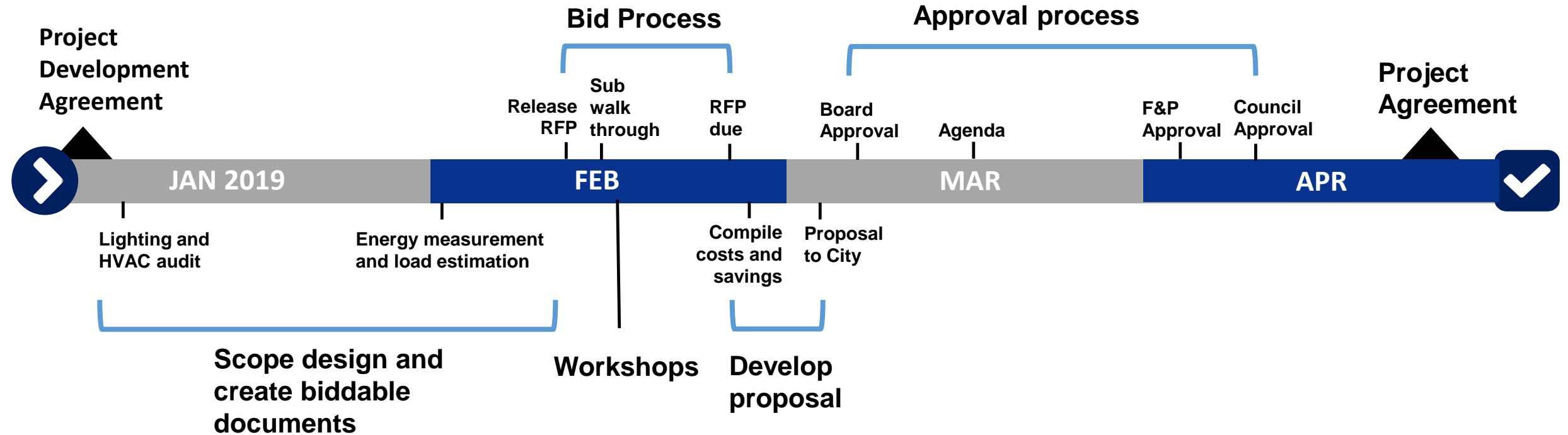
- Significant energy and O&M savings
- Improved comfort in the office



# Project Savings

		Energy			Total Annual Utility
		Electric Consumption	Annual Electric Demand	Natural Gas	
		kWh	kW	therm	
					MMBtu
ECM-1-LCCH Replace Existing Heating Plant	Dollars	\$ -	\$ -	\$ 7,672	\$ 7,672
	Units	-	-	12,707	
ECM-2-LCCH Replace Existing Chiller and Reconfigure Existing Chilled Water Plant	Dollars	\$ 5,568	\$ 4,038	\$ -	\$ 9,606
	Units	87,606	257	-	
ECM-4-LCCH Retrofit Lighting to LED	Dollars	\$ 6,786	\$ 1,136	\$ -	\$ 7,922
	Units	106,791	72	-	
ECM-1-LCC Retrofit Lighting to LED	Dollars	\$ 52,487	\$ 3,706	\$ -	\$ 56,193
	Units	825,910	243	-	
ECM-1-LCC-ALT Retrofit Parking Ramp Lighting to LED	Dollars	\$ 14,217	\$ 552	\$ -	\$ 14,768
	Units	223,704	36	-	
ECM-2-LCC Replace VAV Terminals	Dollars	\$ 2,464	\$ -	\$ -	\$ 2,464
	Units	38,763	-	-	
ECM-3-LCC Repair Arena AHUs	Dollars	\$ -	\$ -	\$ -	\$ -
	Units	-	-	-	
ECM-1-LCML Replace and Reconfigure Existing Cooling Plant	Dollars	\$ 4,668	\$ 4,209	\$ -	\$ 8,877
	Units	70,367	273	-	
ECM-2-LCML Retrofit Lighting to LED	Dollars	\$ 15,721	\$ 1,025	\$ -	\$ 16,745
	Units	237,107	66	-	
ECM-3-LCML Implement Demand Controlled Ventilation for AH-1	Dollars	\$ 134	\$ -	\$ 31	\$ 165
	Units	507	-	206	
ECM-2-LCMSC Retrofit Lighting to LED	Dollars	\$ 6,064	\$ 173	\$ -	\$ 6,236
	Units	92,228	14	-	
Total FIM Items	Dollars	\$ 108,107	\$ 14,839	\$ 7,703	\$ 130,649
	Units	1,682,985	961	12,913	-

# Development Schedule



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Thank You

