



# Facility Renewal Projects

Lewis County Jail & Department of Health Buildings

July 19, 2022

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## Today's Agenda

- Introductions
- Summary of current conditions at Jail and Health Buildings
- Scope of Work
- Project Financials
- LOCAL Loan, utility incentives, and grants
- Open Discussion

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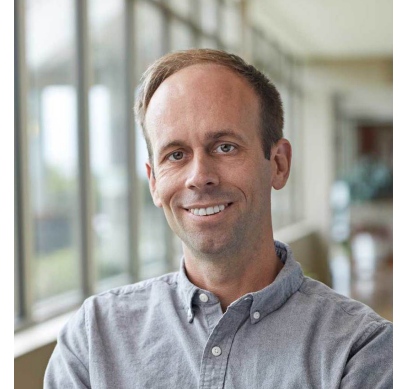
# Introductions



Millig Design Build is an integrated engineering, design, and construction firm specializing in facility improvements that address energy efficiency, building health and safety, and core infrastructure needs.



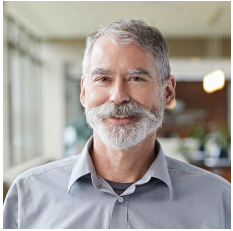
Lauren Donley, CEM,  
CBCP  
Project Development  
Lead



Scott McVey, PE  
Project Manager & Lead  
Mechanical Designer

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# Lewis County's Design, Construction & CX Team



Leigh Myers, PE  
Engineering



Christian  
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Deryl Sarver,  
Construction



Dan Nguyen, PE  
Engineering



Josh Slocum, PE  
Controls &  
Commissioning



Jon Howard, PE  
Engineering



Justin Pape,  
Construction

## Project Background

- 2018-2019 Lewis Co vetted firms for Jail project
- Millig was contracted in August 2021
- The project is using the Department of Enterprise Services (DES) via an Inter Agency Agreement
- DES acts as owner's rep for Energy Services Performance Contracting program (ESPC)



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## Project Goals

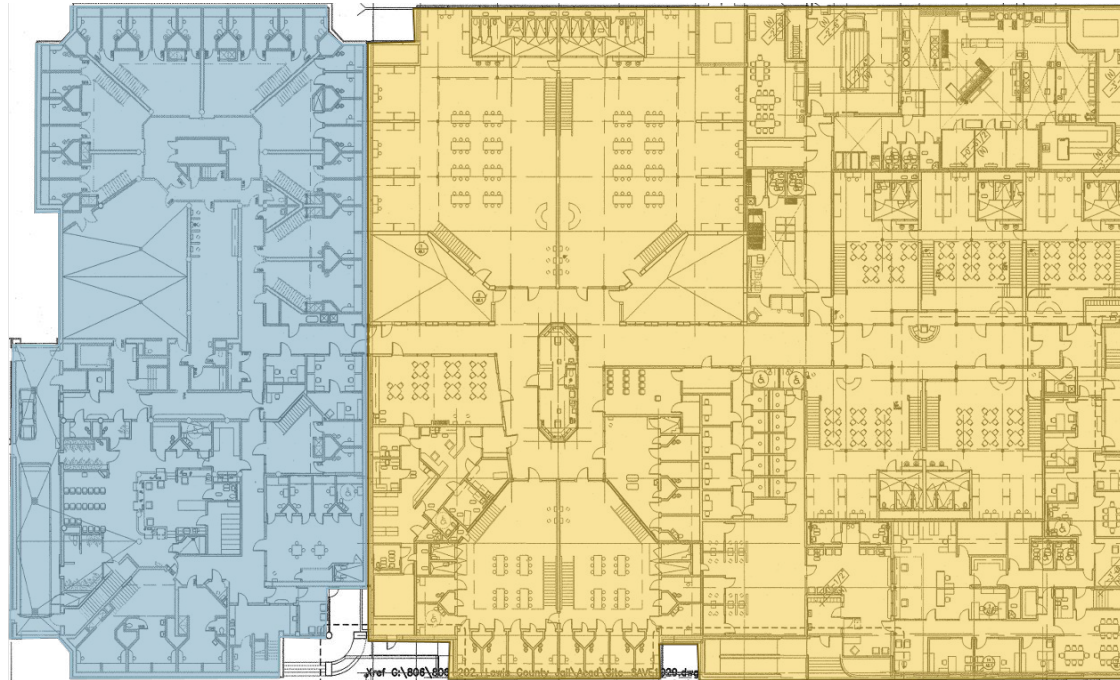
### **Renew critical County facilities for the long term with practical, fiscally-responsible system upgrades.**

- **Jail Building:**
  - Replace Failing and End-of-Life HVAC Equipment
  - Replace Failing and Obsolete Building Automation Controls
  - Replace Leaking and End-of-Life Roofing System
  - Reduce Facility Energy Use to Meet Clean Building's Act Requirements
  
- **Health Building:**
  - Add Ventilation and Cooling
  - Improve Comfort
  - Replace Leaking Windows
  
- **All Projects:**
  - Pursue All Possible Grants and Incentives to Minimize First Costs
  - Reduce Energy and Maintenance Costs while Improving System Reliability

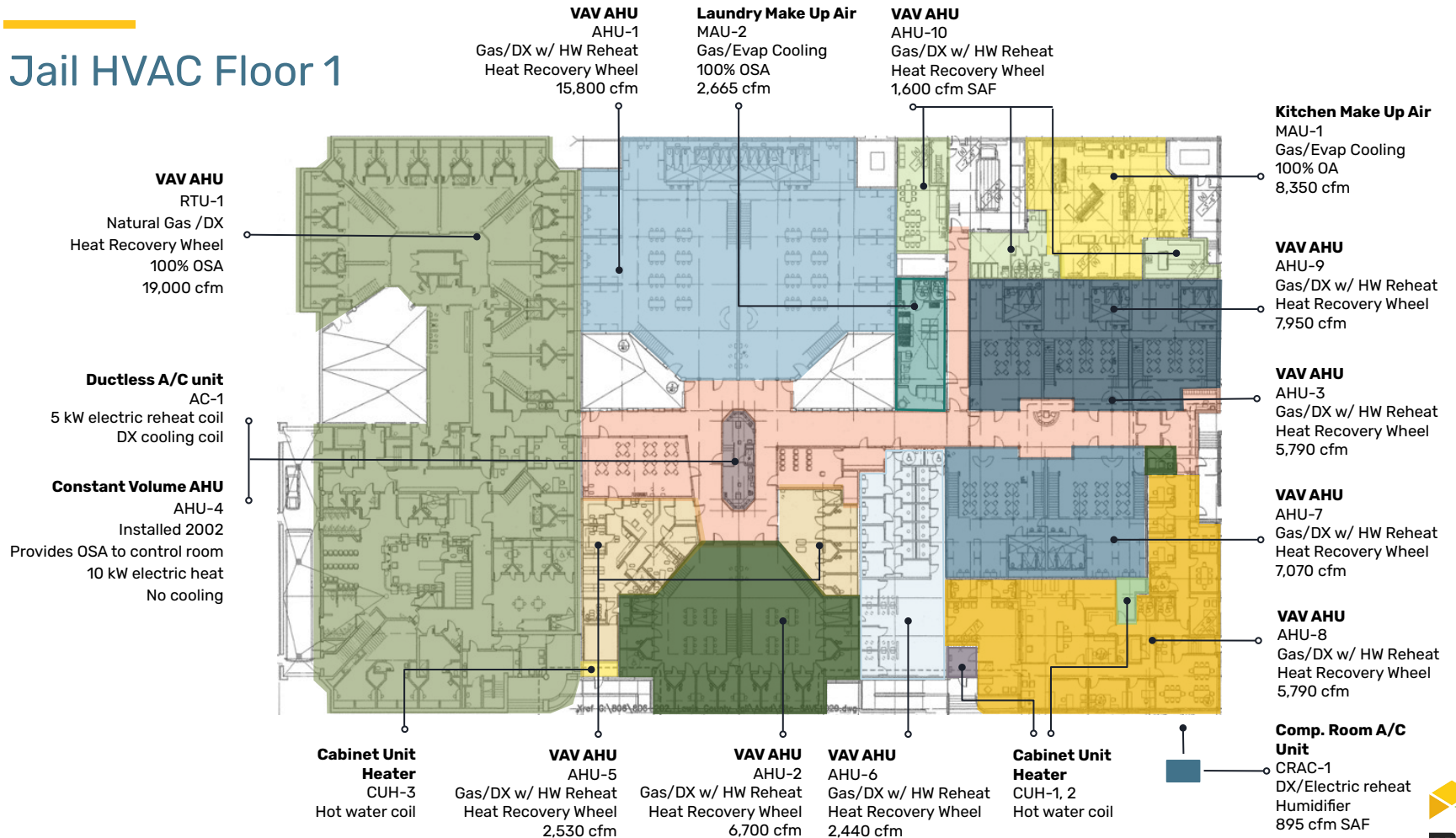
# Facility Overview - Jail

**Original 1985 Jail**

**2005 Jail Expansion**



# Jail HVAC Floor 1



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## Jail Building - Major Deficiencies

### Air Side HVAC

Air handlers are at end of life and experiencing frequent failures. 100% OSA system serving 1985 section needs upgrades.

### Building Automation Controls

Controls system is obsolete and unsupported. It is too old to find replacement parts. It is difficult to use and its capabilities are very limited. Some obsolete controls operate smoke purge system in the event of a fire.

### Roof

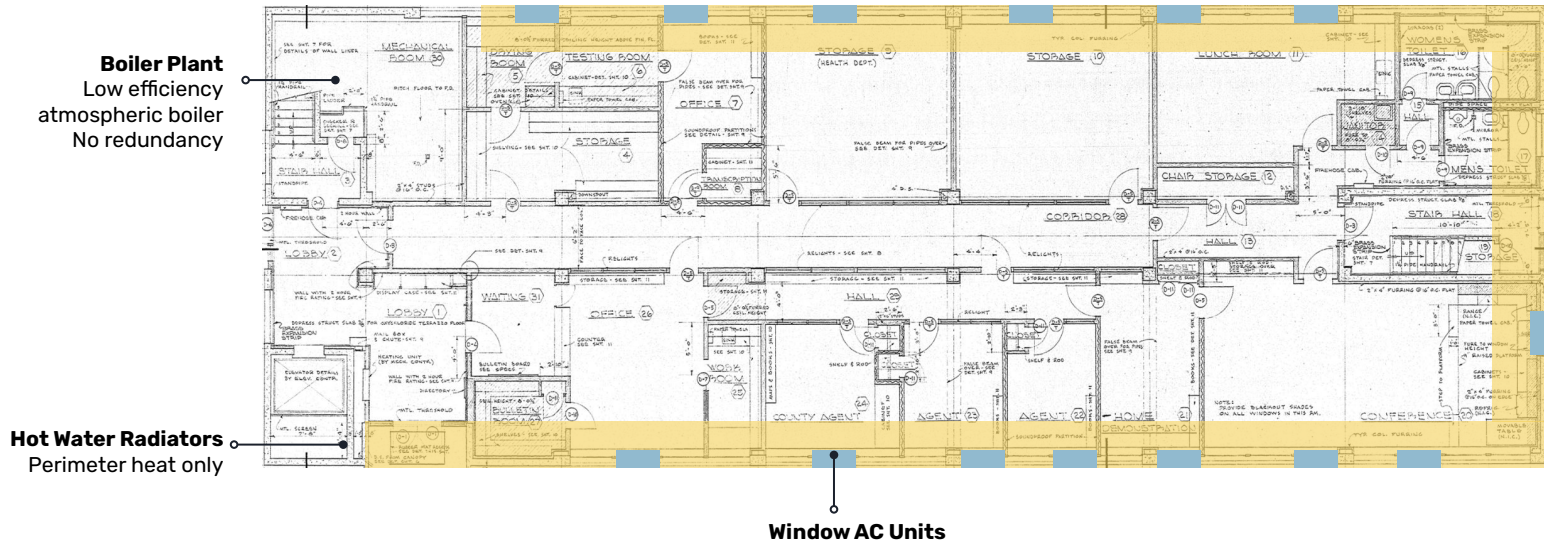
Chronic roof leaks require significant County staff time and resources. Core samples showed moisture damage under the membrane on the 1985 section.

### Domestic Water Piping & Inefficient Lighting

Chronic domestic water leaks, especially in 1985 section.  
Lighting is inefficient T8s with ballasts. High energy use and maintenance costs.

**Facilities department estimates it spends \$200,000+ annually on break/fix maintenance projects at the Jail.**

# Facility Overview - Health Building



## Major Deficiencies

**No ventilation. No central cooling. No controls.  
Does not meet code. Comfort issues. Excessive energy use. Asbestos.**

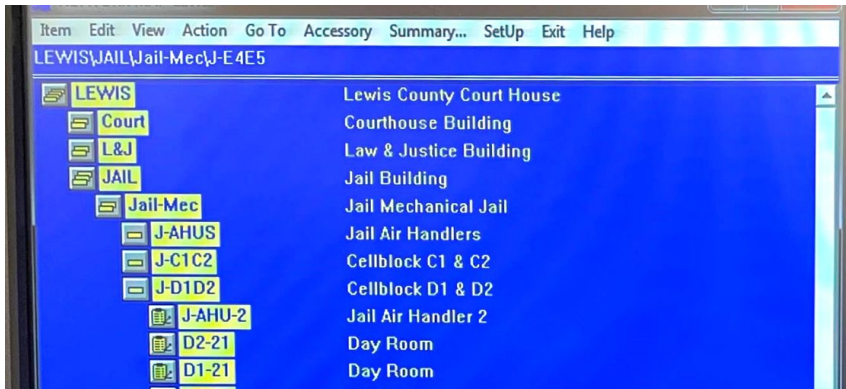
# Jail Bldg Scope of Work



# Jail Building HVAC & Controls Scope

## 1985 Old Jail

- Redesign and replace existing HVAC system with highly efficient new variable refrigerant flow (VRF).
- Rebuild RTU 1 with new heat recovery wheel and lower airflow; utilize rebuilt unit for ventilation air for VRF fan coils. Reuse existing ductwork.
- Take boiler offline.
- New controls system throughout.



# Jail Building HVAC & Controls Scope

## 2005 New Jail

- Redesign and replace 10 Aaon rooftop units with new high efficiency units. Optimize outside air levels and airflows to downsize units. Reuse existing terminal units and ductwork.
- New controls system throughout.
- Install two new high makeup air units for the Kitchen and Laundry to meet cooling loads. Utilize demand controlled ventilation in Kitchen MAU.



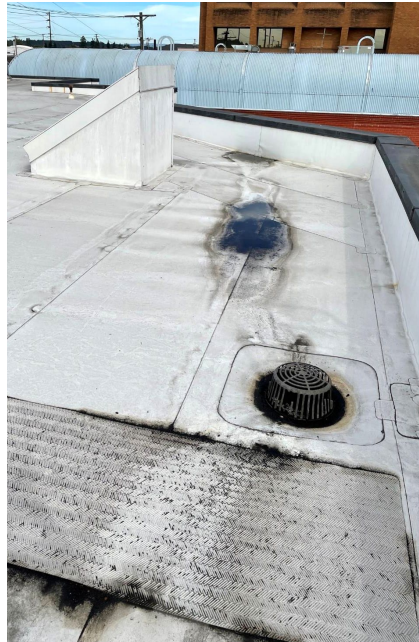
# Jail Building Roof Scope

## Entire Roof Area

- Repair or replacement of TPO membrane.
- Install flashing and waterproofing around new RTUs and other rooftop equipment.
- Avoid costly upgrade from R-34 to R-38 by asking code officials for variance.

## 1985 Old Jail

- Replace water damaged cover board. Lightweight concrete to remain.



# Jail Building Boiler, DHW, & Lighting Scope

## 1985 Old Jail Domestic Hot Water Piping

- Replace domestic hot water mains in 1985 section to prevent frequent and persistent leaks.

## 2005 New Jail Heating Water Boiler

- Replace one standard efficiency boiler with full condensing for energy efficiency.

## Entire Jail

- Upgrade high maintenance and inefficient lighting with LED throughout.



# Health Building Scope of Work



# Health Building Scope of Work

## HVAC Scope

- Redesign and replace existing HVAC system with highly efficient new variable refrigerant flow (VRF).
- Install energy recovery ventilators and all new ductwork to supply ventilation air to all VRF fan coils.
- Take boiler offline.
- New controls system throughout.

## Windows Scope

- Replace leaking windows with new double pane, thermally broken windows installed with proper sill flashing and end dams.
- Remove window AC units and panels, and upgrade to single section windows for a cleaner building appearance.



# South Elevation - Before and After



**Before**



**After**

## North Elevation - Before and After



**Before**



**After**

# Project Financials



# Project Financials

Priority Level	EEM DESCRIPTION	Target Pricing	Current Cost Estimate	On-Bill Utility Cost Reduction	EUI Reduction
High	EEM 1: Jail - Comprehensive HVAC, VRF, Controls Upgrades	\$4,100,000	\$4,603,323	\$48,078	42.4
High	EEM 2: Jail - New Roof	\$1,900,000	TBD	\$199	0.2
	EEM 3: Jail - DHW Piping Replacement	\$440,000	\$635,218	\$517	0.5
	EEM 4: Jail - New Condensing Boiler on 2005 New Jail	\$200,000	\$217,177	\$3,196	3.2
	EEM 5: Jail - LED Lighting Retrofits	\$500,000	TBD	\$15,674	5.6
High	EEM 1: Health - Comprehensive VRF, ERV, Elect Upgrades	\$1,400,000	\$1,506,372	\$6,292	
High	EEM 2: Health - New Windows	\$750,000	\$755,754	\$1,335	
	Total High Priority EEMs	\$8,150,000	\$8,765,450	\$55,904	42.5
	Incentives and Early Adopter	\$390,190	\$390,190		
	Taxes (8.2%) and DES Fees (1.15%)	\$762,025	\$819,570		
	LOCAL Loan Amount	\$6,000,000	\$6,000,000		
	Owner's Cash Contribution	\$2,521,835	\$3,194,829		
	TransAlta & Commerce Dept Grants	TBD	TBD		

# LOCAL Loan Financing Scenario

Assumptions		Year	Loan Payment	Utility & Maintenance Savings	Utility & Early Adopter Incentives	Net Annual Cash Flow
Millig Contract Value	\$8,457,725	2022	-	-	-	-
Lewis Co Total Project Value	\$9,248,522	2023	-\$210,000	\$216,928	-	<b>\$6,928</b>
Annual Interest Rate	3.50%	2024	-\$549,424	\$240,140	\$290,890	-\$18,394
Lease Term (Yrs)	15	2025	-\$549,424	\$249,746	\$24,825	-\$274,854
Utility Savings	\$55,904	2026	-\$549,424	\$259,735	\$24,825	-\$264,864
Utility Cost Escalation	4.0%	2027	-\$549,424	\$270,125	\$24,825	-\$254,475
Maintenance Savings	\$175,000	2028	-\$549,424	\$280,930	\$24,825	-\$243,670
Maintenance Escalation	4.0%	2029	-\$549,424	\$292,167	-	-\$257,257
Early Adopter Incentive	\$79,751	2030	-\$549,424	\$303,854	-	-\$245,571
Utility Incentives Year 2	\$211,139	2031	-\$549,424	\$316,008	-	-\$233,417
Utility Incentives Year 3-6	\$24,825	2032	-\$549,424	\$328,648	-	-\$220,776
Total Utility Incentive	\$310,439	2033	-\$549,424	\$341,794	-	-\$207,630
Total Grants	TBD	2034	-\$549,424	\$355,466	-	-\$193,958
Annual Avoided CBA Penalty	\$98,825	2035	-\$549,424	\$369,685	-	-\$179,740
		2036	-\$549,424	\$384,472	-	-\$164,952
		2037	-\$549,424	\$399,851	-	-\$149,574

## Questions?

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