



East Aurora Administration Center
310 Seminary Ave
Aurora, IL 60505

Date: June 1st 2026

To: Dr. Robert Halverson, Superintendent of Schools
East Aurora School District 131 Board of Education

From: Andrew Allen, Assistant Superintendent of Operations

Subject: This is an informational memo to the Board of Education regarding ComEd's MBCx program report.

Background:

ComEd in cooperation with Trane Technologies has a program the district has started to help identify inefficiencies and potential areas of improvements to save money and resources in the HVAC systems around the school district.

- **Data Integration:** Trane and ComEd analyze real-time data from our existing building automation systems.
- **Gap Analysis:** The program identifies specific areas where energy is being wasted—such as "short-cycling" equipment or heating/cooling unoccupied spaces.
- **Actionable Insights:** Based on this data, the district receives tailored recommendations for system adjustments and infrastructure improvements.

Key Objectives:

- **Fiscal Responsibility:** Identifying and fixing inefficiencies to significantly reduce monthly utility expenditures.
- **Resource Conservation:** Lowering the district's overall carbon footprint and energy consumption.
- **Preventative Maintenance:** Using system data to address minor mechanical issues before they become costly emergency repairs.
- **Optimized Learning Environments:** Ensuring consistent temperature and air quality to support student and staff comfort.

With the consent of the committee, we would like to move forward and implement the suggested changes at 6 buildings to start and monitor success. If all goes well, over a period of months we will begin to implement the changes to additional buildings.



2026

East Aurora School District 131
MBCx Consultation Report



Trane Technologies

5/7/2026

MBCx Consultation Report May 2026

Executive Summary

September 2025 marked the formal launch of the Monitoring-Based Commissioning (MBCx) project across 19 sites within School District 131. The project began with a data integration phase, enabling the collection of real-time HVAC system data from equipment controllers and facilitating continuous analysis through Trane's analytics platform. This phase was successfully completed in February 2026, with the monitoring and analytics phase commencing in March 2026.

Through the use of large datasets capturing HVAC system performance, this project aims to improve visibility into building operations and identify opportunities to optimize system performance. The goal is to implement operational improvements that result in sustained energy savings without significant capital investment.

ComEd has categorized the 19 project sites into three groups for implementation and tracking, as shown in the energy savings targets table below.

ComEd MBCx Projects	Project Target	
	Electricity (kWh)	Natural Gas (therms)
SD-131 Group A	400,000	25,000
SD-131 Group B	300,000	20,000
SD-131 Group C	300,000	10,000
Total	1,000,000	55,000

The overall energy savings targets for the project are 1,000,000 kWh of electricity and 55,000 therms of natural gas, representing approximately 10% of the combined annual energy consumption across the district. This report highlights identified opportunities for Oak Park and Dieterich Elementary Schools, as summarized in the energy savings tables below. The cumulative impact of the proposed energy conservation measures (ECMs) across these two Elementary Schools is expected to result in an estimated 102,694 kWh and 7,204 therms which represent 10% and 13% of electricity and natural gas reduction target respectively.



Oak Park Elementary School

Energy Savings Opportunities	ECM No.	Peak Demand Savings (kW)	Electrical Energy Savings (kWh/yr) ¹	Gas Energy Savings (therms/yr) ¹	Utility Cost Savings (\$/year) ¹	Estimated Project Cost (\$) ²	Simple Payback (yrs)	Potential ComEd Customer Incentive (\$)	Simple Payback with Incentive (yrs)	Project Stage
Automated Optimum Start/Stop	1	0	16,628	3,923	\$5,335	\$1,960	0.37	\$665	0.24	Identified
Optimize EF Operation	2	0	7,076	0	\$1,018	\$980	0.96	\$283	0.68	Identified
Optimize Chillers & CHWP SOO	3	0	22,166	0	\$3,190	\$3,920	1.23	\$887	0.95	Identified
Lockout Heating/Schedule Boiler Operation	4	0	1,757	639	\$732	\$980	1.34	\$70	1.24	Identified
Totals		0	47,627	4,562	\$10,275	\$7,840	0.76	\$1,905	0.58	

¹Energy and cost savings projections are based upon nationally-recognized Typical Meteorological Year (TMY) weather data, a collation of selected weather data for a specific location, to provide annual temperature averages that are consistent with the long-term averages for the location in question. The energy savings presented are not metered results. Actual energy and cost savings for a specific measure will vary based upon actual conditions incurred in a given month.

²Estimated Implementation is based on labor hours required for programming changes, adjustments and troubleshooting and does not include any cost of material or hardware, actual cost may vary based on final scope.

Dieterich Elementary School

Energy Savings Opportunities	ECM No.	Peak Demand Savings (kW)	Electrical Energy Savings (kWh/yr) ¹	Gas Energy Savings (therms/yr) ¹	Utility Cost Savings (\$/year) ¹	Estimated Project Cost (\$) ²	Simple Payback (yrs)	Potential ComEd Customer Incentive (\$)	Simple Payback with Incentive (yrs)	Project Stage
Automated Optimum Start/Stop	1	0	41,701	2,168	\$7,376	\$1,960	0.27	\$1,668	0.04	Identified
Implement Fixed Enthalpy Economizing	2	0	4,905	0	\$674	\$1,470	2.18	\$196	1.89	Identified
Optimize Chillers & CHWP SOO	3	0	5,187	0	\$710	\$3,920	5.52	\$207	5.23	Identified
Reset DAT & DSP SP Based on T&R	4	0	3,294	474	\$813	\$1,470	1.81	\$132	1.65	Identified
Totals		0	55,067	2,642	\$9,572	\$8,820	0.92	\$2,203	0.69	

¹Energy and cost savings projections are based upon nationally-recognized Typical Meteorological Year (TMY) weather data, a collation of selected weather data for a specific location, to provide annual temperature averages that are consistent with the long-term averages for the location in question. The energy savings presented are not metered results. Actual energy and cost savings for a specific measure will vary based upon actual conditions incurred in a given month.

²Estimated Implementation is based on labor hours required for programming changes, adjustments and troubleshooting and does not include any cost of material or hardware, actual cost may vary based on final scope.



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Oak Park Elementary School

ECM 1 – Automated Optimum Start/Stop

Equipment Affected: RTU-3, RTU-5, RTU-N, RTU-S

Baseline Operation

RTU schedules are currently set to operate 24/7/365. These schedules are not reflective of the buildings occupancy and contributes to a significant amount of energy consumption.

Benefits

1. Energy Savings

- **Reduced Runtime:** Equipment runs only during occupied hours or when demand exists, thus lowering unnecessary energy consumption.
- **Lower Utility Bills:** Less energy used directly translates to cost savings on electricity, gas, or other utilities.

2. Equipment Longevity

- **Decreased Wear & Tear:** Reduced operating hours means less mechanical stress, extending the lifespan of equipment and lowering maintenance costs.

Suggested Strategy

Modify schedules to align with occupancy as follows:

- Monday – Friday
 - 5:00 am to 7:00 pm
- Saturday
 - 6:00 am to 3:00 pm

Implement optimal start and optimal stop controls sequence to ensure that the buildings reach comfortable temperatures prior to occupancy.

Supporting Documentation

		RTU-3						
Hours		Day of the Week						
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
12:00 AM	0	100%	100%	100%	100%	100%	92%	100%
1:00 AM	1	100%	100%	100%	100%	100%	100%	100%
2:00 AM	2	100%	100%	100%	100%	100%	100%	100%
3:00 AM	3	100%	100%	100%	100%	100%	100%	92%
4:00 AM	4	100%	100%	100%	100%	100%	100%	100%
5:00 AM	5	100%	100%	100%	100%	100%	100%	100%
6:00 AM	6	100%	100%	100%	100%	100%	100%	100%
7:00 AM	7	100%	100%	100%	100%	100%	100%	100%
8:00 AM	8	100%	100%	100%	100%	100%	100%	100%
9:00 AM	9	100%	100%	100%	100%	100%	100%	100%
10:00 AM	10	100%	100%	100%	100%	100%	100%	100%
11:00 AM	11	100%	100%	100%	100%	100%	100%	100%
12:00 PM	12	100%	100%	100%	100%	100%	100%	100%
1:00 PM	13	100%	100%	100%	100%	100%	100%	100%
2:00 PM	14	91%	100%	100%	100%	100%	100%	100%
3:00 PM	15	100%	100%	100%	100%	100%	100%	100%
4:00 PM	16	100%	100%	100%	100%	100%	100%	100%
5:00 PM	17	100%	100%	100%	100%	100%	100%	100%
6:00 PM	18	100%	100%	100%	100%	100%	100%	100%
7:00 PM	19	100%	100%	100%	100%	100%	100%	100%
8:00 PM	20	100%	100%	100%	100%	100%	100%	100%
9:00 PM	21	100%	100%	100%	100%	100%	100%	100%
10:00 PM	22	100%	100%	100%	100%	100%	100%	100%
11:00 PM	23	100%	100%	100%	100%	100%	100%	100%
Hours/Day		24	24	24	24	24	24	24

		RTU-S						
Hours		Day of the Week						
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
12:00 AM	0	58%	48%	52%	48%	44%	44%	47%
1:00 AM	1	58%	52%	55%	52%	44%	50%	53%
2:00 AM	2	58%	52%	55%	52%	47%	53%	55%
3:00 AM	3	58%	52%	61%	48%	50%	56%	50%
4:00 AM	4	58%	58%	58%	48%	50%	56%	56%
5:00 AM	5	67%	67%	70%	73%	74%	65%	68%
6:00 AM	6	85%	88%	91%	94%	94%	85%	88%
7:00 AM	7	100%	100%	100%	100%	100%	100%	100%
8:00 AM	8	100%	100%	100%	100%	100%	100%	100%
9:00 AM	9	100%	100%	100%	100%	100%	100%	100%
10:00 AM	10	100%	100%	100%	100%	100%	100%	100%
11:00 AM	11	100%	100%	100%	100%	100%	100%	100%
12:00 PM	12	100%	100%	100%	100%	100%	100%	100%
1:00 PM	13	100%	100%	100%	100%	100%	100%	100%
2:00 PM	14	97%	100%	100%	100%	100%	88%	97%
3:00 PM	15	100%	100%	100%	100%	100%	35%	36%
4:00 PM	16	100%	100%	100%	100%	100%	38%	39%
5:00 PM	17	100%	100%	100%	100%	100%	38%	39%
6:00 PM	18	94%	100%	97%	94%	91%	38%	45%
7:00 PM	19	36%	36%	36%	36%	35%	38%	45%
8:00 PM	20	36%	36%	36%	36%	35%	44%	45%
9:00 PM	21	39%	39%	39%	36%	35%	44%	45%
10:00 PM	22	48%	52%	48%	48%	47%	50%	58%
11:00 PM	23	48%	52%	48%	48%	47%	53%	58%
Hours/Day		18	18	18	18	18	16	16

ECM 2 – Optimize EF Operation

Equipment Affected: EF-1 (Boiler Room), EF-2, EF-3, EF-4, EF-5, EF-27, EF-31, EF-34, EF-206B, EF-300A, EF-303A

Baseline Operation

Exhaust Fans schedules are currently set to operate 24/7/365. These schedules are not reflective of the buildings occupancy and contributes to a significant amount of energy consumption.

Benefits

1. Energy Savings

- **Reduced Runtime:** Equipment runs only during occupied hours or when demand exists, thus lowering unnecessary energy consumption.
- **Lower Utility Bills:** Less energy used directly translates to cost savings on electricity, gas, or other utilities.

2. Equipment Longevity

- **Decreased Wear & Tear:** Reduced operating hours means less mechanical stress, extending the lifespan of equipment and lowering maintenance costs.

Suggested Strategy

Modify schedules to align with occupancy as follows:

- Monday – Friday
 - 5:00 am to 7:00 pm
- Saturday
 - 6:00 am to 3:00 pm

ECM 3 – Optimize Chillers & CHWP SOO

Equipment Affected: Chiller-1, Chiller-1B

Baseline Operation

The chiller plant is currently operating inefficiently due to control and scheduling deficiencies. Chillers are observed to run outside of scheduled occupancy hours, resulting in unnecessary energy consumption. In addition, the associated chilled water pumps continue to operate during these extended periods, further increasing energy usage. The chilled water supply temperature is maintained at a constant setpoint and is not being reset based on load conditions or outdoor air temperature. This lack of temperature reset prevents the system from operating at optimal efficiency during part-load conditions and contributes to avoidable energy waste.

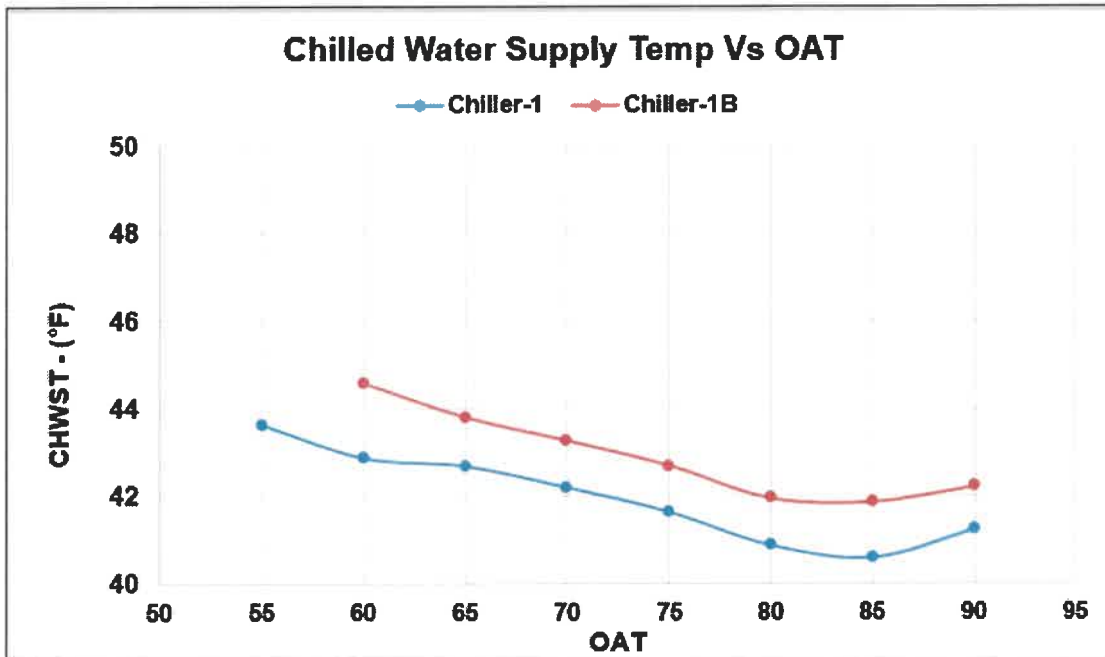
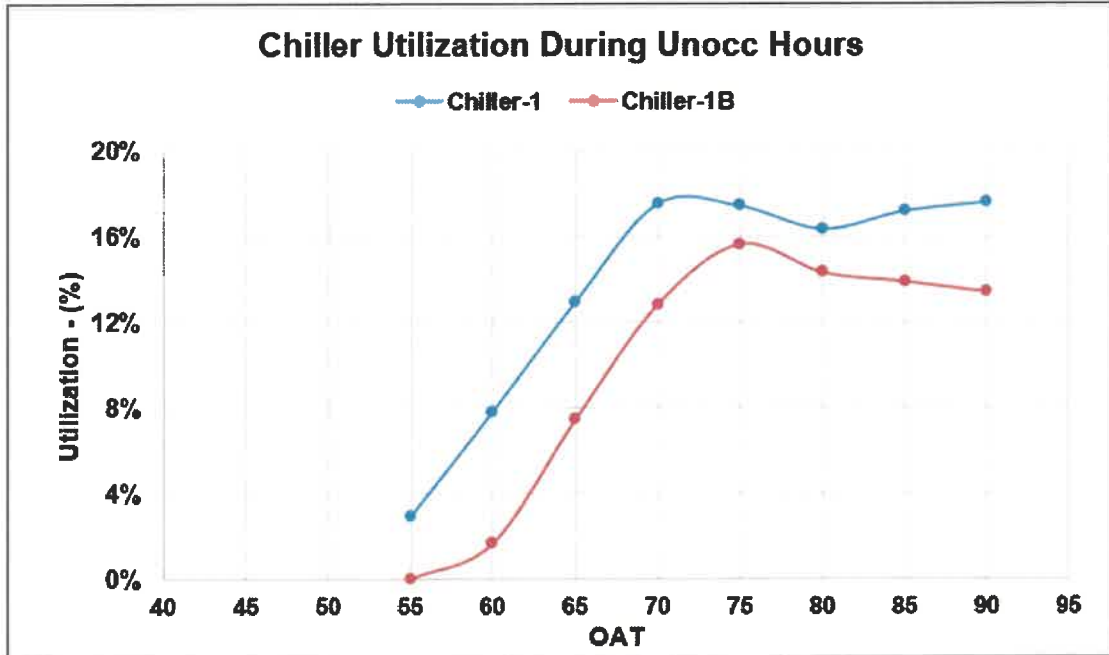
Suggested Strategy

It is recommended to implement optimized control strategies for the chiller plant. Chiller and chilled water pump operation should be aligned with the building occupancy schedule by enforcing proper start/stop scheduling and eliminating unnecessary operation during unoccupied hours.

In addition, a chilled water supply temperature reset strategy should be implemented based on load conditions, such as return water temperature, valve position, or outdoor air temperature. This will allow the system to operate more efficiently during part-load conditions by increasing the chilled water temperature when full cooling capacity is not required.

Further optimization can include sequencing chillers based on load, implementing minimum run times to avoid short cycling, and ensuring proper interlocks between chillers and pumps so that pumps do not operate when chillers are offline. These measures will collectively reduce unnecessary energy consumption, improve system efficiency, and extend equipment life.

Supporting Documentation



ECM 4 – Lockout Heating/Schedule Boiler Operation

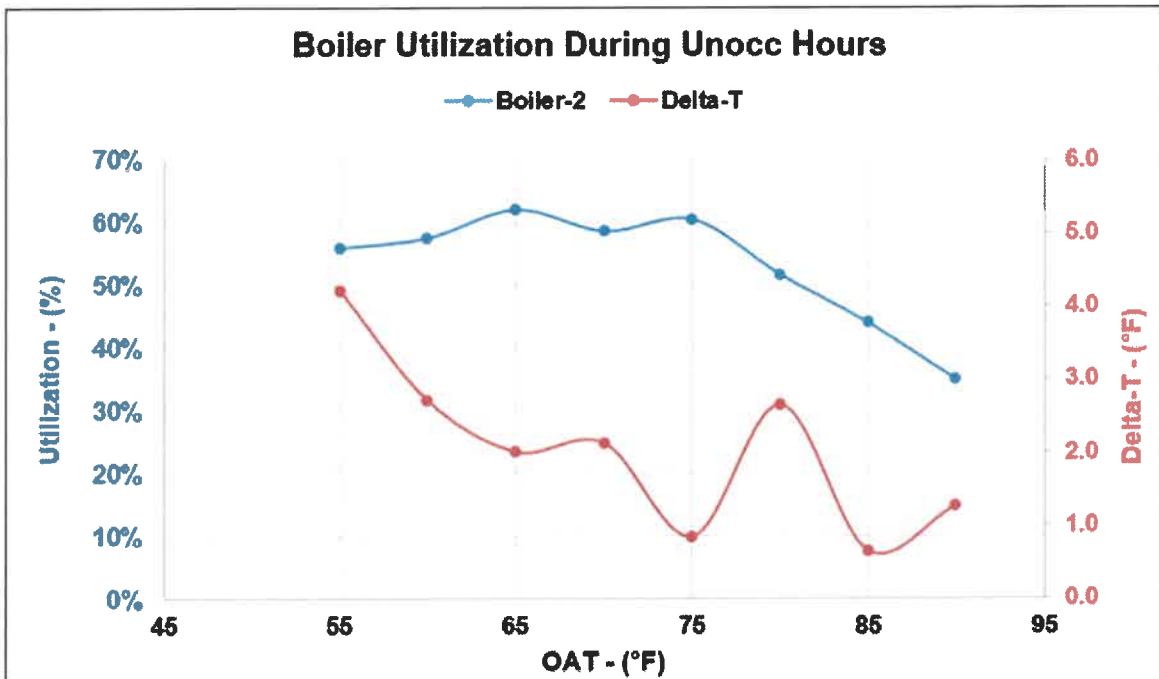
Equipment Affected: Boiler-1, Boiler-2

Baseline Operation

The heating plants in the building operate continuously, even when the building is in unoccupied mode. Also, the heating plants operate without any lockout setpoints for the summer operation. Data shows that the delta-t across the hot water loop is minimal during summer unoccupied hours

Suggested Strategy

During building unoccupied periods, the boiler plants can be locked out until the outdoor air temperature drops below 50°F (adj.). The control sequences should be revised so the boiler plants do not operate above the outdoor air temperature setpoint of 70°F (adj.) during occupier hours. These lockouts will be overridden if any AHU/RTU/VAV boxes call for heating.





Dieterich Elementary School

ECM 1 – Automated Optimum Start/Stop

Equipment Affected: RTU-1, RTU-2, RTU-3, RTU-4, RTU-5, RTU-6, RTU-7

Baseline Operation

RTU schedules are currently set to operate 24/7/365. These schedules are not reflective of the buildings occupancy and contributes to a significant amount of energy consumption.

Benefits

1. Energy Savings

- **Reduced Runtime:** Equipment runs only during occupied hours or when demand exists, thus lowering unnecessary energy consumption.
- **Lower Utility Bills:** Less energy used directly translates to cost savings on electricity, gas, or other utilities.

2. Equipment Longevity

- **Decreased Wear & Tear:** Reduced operating hours means less mechanical stress, extending the lifespan of equipment and lowering maintenance costs.

Suggested Strategy

Modify schedules to align with occupancy as follows:

- Monday – Friday
 - 5:00 am to 7:00 pm
- Saturday
 - 6:00 am to 3:00 pm

Implement optimal start and optimal stop controls sequence to ensure that the buildings reach comfortable temperatures prior to occupancy.

Supporting Documentation

RTU-1								
Hours	Day of the Week							
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	
12:00 AM	0	76%	76%	76%	78%	76%	76%	82%
1:00 AM	1	76%	76%	76%	78%	76%	76%	82%
2:00 AM	2	76%	76%	76%	78%	76%	76%	75%
3:00 AM	3	76%	76%	76%	78%	76%	76%	76%
4:00 AM	4	82%	82%	76%	78%	82%	76%	82%
5:00 AM	5	100%	100%	100%	94%	94%	88%	82%
6:00 AM	6	100%	100%	100%	100%	100%	100%	100%
7:00 AM	7	100%	100%	100%	100%	100%	100%	100%
8:00 AM	8	100%	100%	100%	100%	100%	100%	100%
9:00 AM	9	94%	100%	100%	100%	100%	100%	100%
10:00 AM	10	100%	100%	100%	100%	100%	100%	100%
11:00 AM	11	100%	100%	100%	100%	100%	100%	100%
12:00 PM	12	100%	100%	100%	100%	100%	100%	100%
1:00 PM	13	100%	100%	100%	100%	100%	100%	100%
2:00 PM	14	100%	100%	100%	100%	100%	100%	100%
3:00 PM	15	100%	100%	100%	100%	100%	76%	76%
4:00 PM	16	100%	100%	100%	100%	100%	76%	76%
5:00 PM	17	100%	100%	100%	100%	100%	76%	76%
6:00 PM	18	100%	100%	100%	100%	100%	76%	76%
7:00 PM	19	76%	76%	76%	72%	76%	76%	76%
8:00 PM	20	76%	76%	76%	72%	76%	76%	76%
9:00 PM	21	76%	76%	76%	72%	76%	76%	76%
10:00 PM	22	76%	76%	76%	72%	76%	76%	76%
11:00 PM	23	76%	76%	76%	72%	76%	76%	76%
Hours/Day		22	22	22	21	22	21	21

RTU-5								
Hours	Day of the Week							
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	
12:00 AM	0	71%	76%	71%	78%	71%	71%	76%
1:00 AM	1	76%	76%	76%	78%	76%	76%	76%
2:00 AM	2	76%	76%	76%	78%	76%	76%	81%
3:00 AM	3	76%	76%	76%	78%	76%	76%	71%
4:00 AM	4	76%	76%	76%	78%	76%	76%	76%
5:00 AM	5	94%	94%	100%	94%	88%	76%	76%
6:00 AM	6	100%	100%	100%	100%	100%	100%	100%
7:00 AM	7	100%	100%	100%	100%	100%	100%	100%
8:00 AM	8	100%	100%	100%	100%	100%	100%	100%
9:00 AM	9	94%	94%	100%	100%	100%	100%	100%
10:00 AM	10	100%	100%	100%	100%	100%	100%	100%
11:00 AM	11	100%	100%	100%	100%	88%	100%	100%
12:00 PM	12	100%	100%	100%	100%	100%	100%	100%
1:00 PM	13	100%	100%	100%	100%	100%	100%	100%
2:00 PM	14	100%	100%	100%	100%	94%	88%	88%
3:00 PM	15	100%	100%	100%	100%	94%	76%	76%
4:00 PM	16	100%	100%	100%	100%	100%	76%	76%
5:00 PM	17	100%	100%	100%	100%	100%	76%	76%
6:00 PM	18	94%	88%	82%	83%	88%	76%	76%
7:00 PM	19	76%	76%	76%	72%	76%	76%	76%
8:00 PM	20	76%	76%	76%	72%	76%	76%	76%
9:00 PM	21	76%	76%	76%	67%	76%	76%	76%
10:00 PM	22	76%	76%	76%	72%	76%	76%	76%
11:00 PM	23	76%	76%	76%	72%	76%	76%	76%
Hours/Day		21	21	21	21	21	20	20

ECM 2 – Fixed Enthalpy Economizing

Equipment Affected: RTU-1

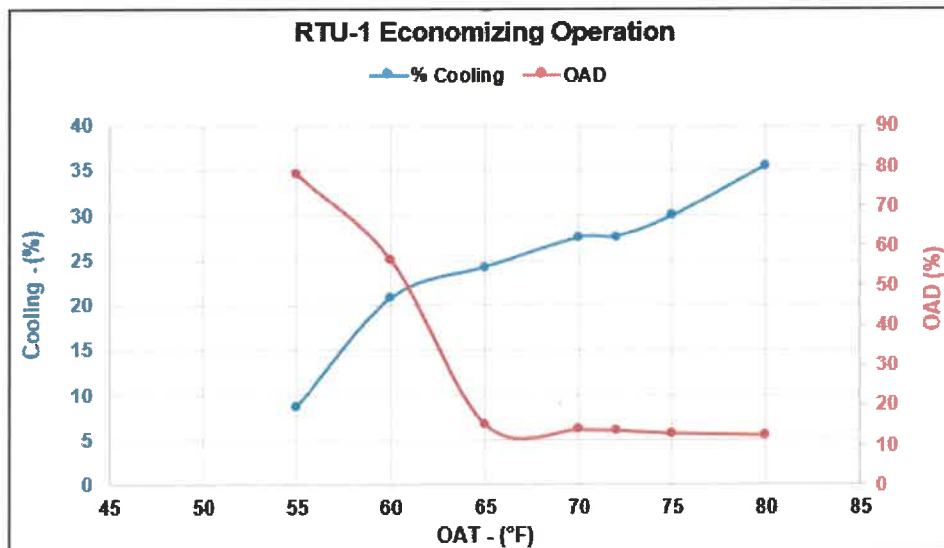
Baseline Operation

Data analysis indicates that RTU-1 is utilizing mechanical cooling during periods of favorable outdoor air conditions when free cooling could otherwise satisfy the cooling demand. This suggests that the economizer sequence is not operating optimally, resulting in unnecessary mechanical cooling energy consumption.

Suggested Strategy

Fixed-enthalpy economizing is a control strategy that uses outdoor air for cooling when the outdoor air enthalpy is lower than the fixed enthalpy setpoint. Implement fixed enthalpy economizer control utilizing calibrated and properly located outdoor air temperature and humidity sensors. Outside air (OA) enthalpy shall be compared with a fixed enthalpy control setpoint of 28 BTU/LB (adj.). The economizer shall enable when OA enthalpy is 2.0 BTU/LB less than enthalpy control setpoint. The economizer shall disable when OA enthalpy is greater than enthalpy control setpoint.

For proper operation, accurate and calibrated temperature and relative humidity sensors are required. These sensors should be strategically located to prevent exposure to direct solar radiation or other environmental influences that could negatively impact sensor accuracy and economizer performance.



ECM 3 – Optimize Chillers & CHWP SOO

Equipment Affected: Chiller-1

Baseline Operation

The chiller plant is currently operating inefficiently due to control and scheduling deficiencies. Chillers are observed to run outside of scheduled occupancy hours, resulting in unnecessary energy consumption. In addition, the associated chilled water pumps continue to operate during these extended periods, further increasing energy usage. The chilled water supply temperature is maintained at a constant setpoint and is not being reset based on load conditions or outdoor air temperature. This lack of temperature reset prevents the system from operating at optimal efficiency during part-load conditions and contributes to avoidable energy waste.

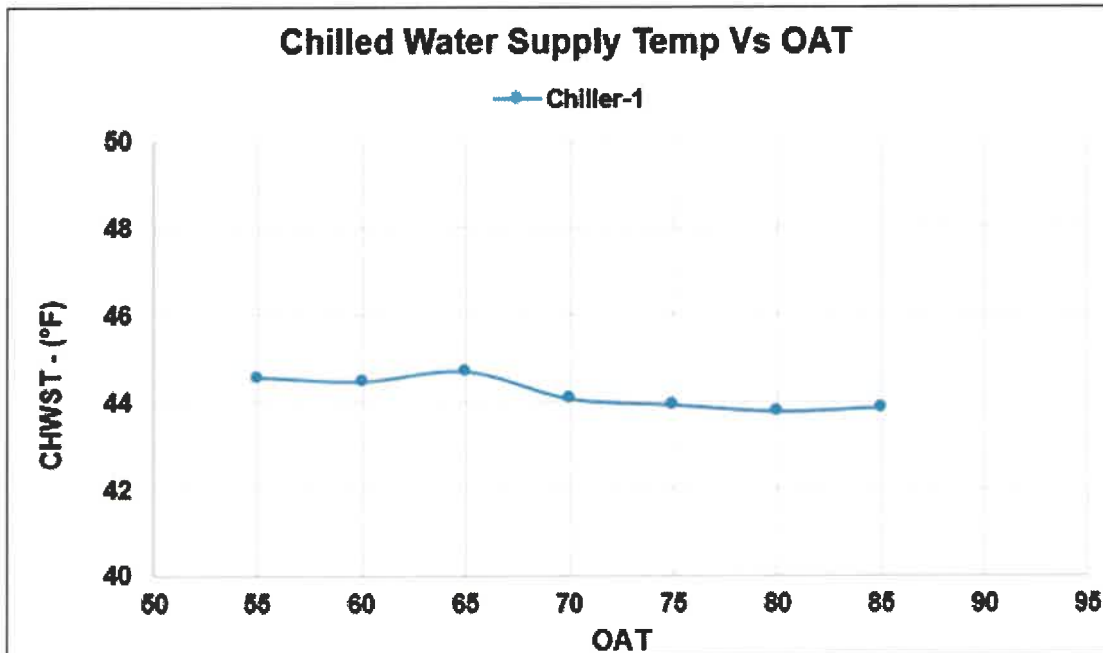
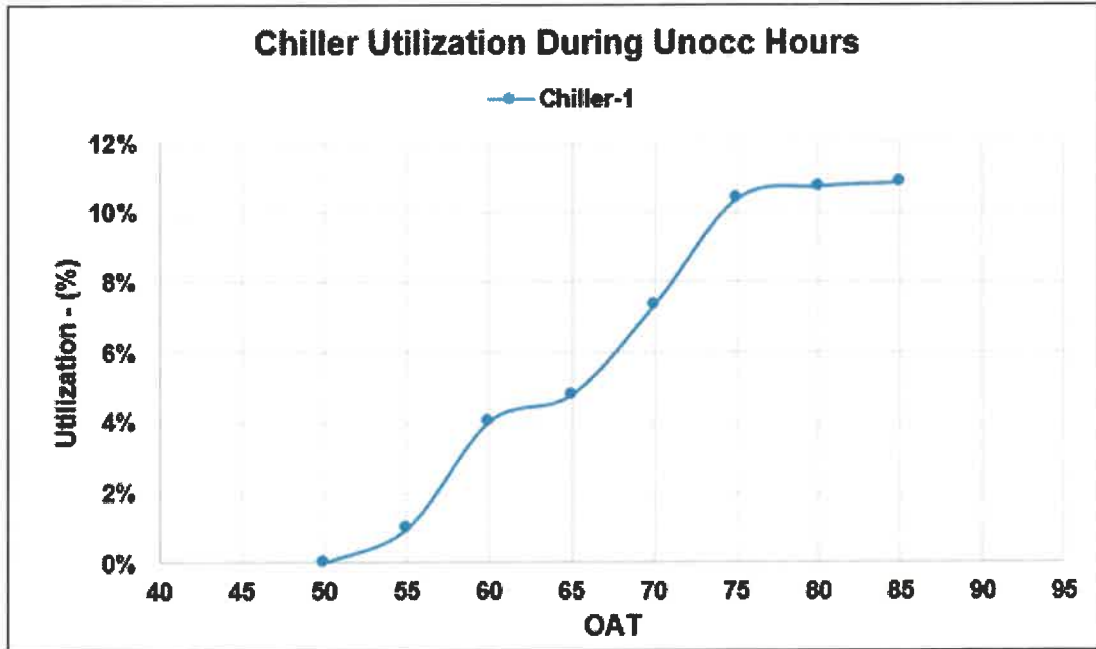
Suggested Strategy

It is recommended to implement optimized control strategies for the chiller plant. Chiller and chilled water pump operation should be aligned with the building occupancy schedule by enforcing proper start/stop scheduling and eliminating unnecessary operation during unoccupied hours.

In addition, a chilled water supply temperature reset strategy should be implemented based on load conditions, such as return water temperature, valve position, or outdoor air temperature. This will allow the system to operate more efficiently during part-load conditions by increasing the chilled water temperature when full cooling capacity is not required.

Further optimization can include sequencing chillers based on load, implementing minimum run times to avoid short cycling, and ensuring proper interlocks between chillers and pumps so that pumps do not operate when chillers are offline. These measures will collectively reduce unnecessary energy consumption, improve system efficiency, and extend equipment life.

Supporting Documentation



ECM 4 – Reset DAT and DSP SP Based on T&R

Equipment Affected: RTU-1

Baseline Operation

Data analysis indicates that RTU-1 is only modestly modulating its supply fan static pressure in response to varying indoor and outdoor conditions. This suggests that the static pressure reset strategy is not fully optimized, potentially resulting in excess fan energy consumption during periods of reduced airflow demand.

Data analysis also indicates that the supply air temperature (SAT) is being maintained at a constant 55°F throughout the year without any reset strategy. Maintaining a fixed SAT regardless of outdoor conditions or zone demand can result in unnecessary mechanical cooling and simultaneous reheating, particularly during part-load conditions. Implementing a dynamic SAT reset strategy based on outdoor air temperature, zone demand, or cooling valve position can improve overall system efficiency and reduce energy consumption.

Suggested Strategy

Implement a Trim & Respond control strategy to dynamically reset the duct static pressure (DSP) based on real-time feedback from terminal VAV box damper positions. This strategy will allow the supply fan to operate at the minimum static pressure required to satisfy zone airflow demands, thereby reducing fan energy consumption during part-load conditions.

In addition, implement a Trim & Respond supply air temperature (SAT) reset strategy to dynamically adjust the SAT setpoint from 55°F up to 65°F as outdoor air temperatures decrease from 80°F to 45°F. Resetting the SAT during cooler outdoor conditions reduces unnecessary mechanical cooling and terminal reheating while improving overall system efficiency and occupant comfort.

