

WATERSIDE ECONOMIZATION

Capital Investment Opportunity



OVERVIEW

Waterside economizing utilizes a flat plate heat exchanger to serve the building cooling load when outdoor conditions are mild. This operation relies solely on the evaporative capabilities of the cooling tower and will bypass the chiller when operating. Typically, this is only feasible when the outside air wet bulb temperature is below a predetermined threshold. Newer or refurbished cooling towers can provide a lower approach temperature, enhancing the capabilities of waterside economizing. Approach temperature represents the delta between the wet bulb temperature and the condenser water temperature sent from the cooling towers to the building chillers.

CONSIDERATIONS

- Requires a digital building automation system (BAS) to control the changeover from economizing to mechanical cooling.
- Exchanger plates can be added to increase loading capabilities.
- Most effective in regions with lower wet bulb temperatures and a constant baseload of cooling in the building.

KEY PERFORMANCE INDICATORS (KPIs)

- **5-15 point energy use intensity (EUI) reduction potential**
- **5-10% sitewide electric savings**
- **3-7 year simple payback**