

October 09, 2026

Matt Fritz
Village Administrator
Village of Coal City
515 S. Broadway St.
Coal City, IL 60416

Dear Mr. Fritz,

Kimley-Horn, on behalf of Aligned Data Centers ("Aligned"), is submitting a Utility Use Memo for a proposed ±320-acre development site ("Site" or "Project Heartland"), located on the southeast corner of East Reed Road and South Carbon Hill Road, a portion of which is currently within the Village of Coal City, IL ("Village").

PROPOSED PROJECT:

The proposed project is a future technology campus development and is anticipated to consist of 11 data center buildings. Each data center building will include an administrative area, generator yard, truck dock, and parking lot. The proposed technology campus will utilize a non-evaporative, air-cooled closed-loop system, which has a relatively low potable water demand compared to evaporative cooling systems. The closed-loop system will use chillers located in the mechanical yards to cool the buildings. Water will continuously circulate between the buildings and chillers through a sealed piping system. The water absorbs heat from the building's air-handling equipment and returns to the chillers, where the heat is removed. Because the water is continuously recirculated, it is not routinely consumed.

Closed Loop Cooling systems do require water during the initial setup of the system. The water used is for flushing, cleaning, and filling the piping that makes up the closed loop system. A separate "General Fill and Flush Procedure" document details the utility demands for the closed loop cooling setup.

The day-to-day operating utility demands for the technology campus will be similar to an office or warehouse development. Potable water and sanitary usage is driven by employee needs and typical building upkeep equipment such as cleaning and building space humidifying. Calculations below show the typical and the peak utility demand based on IEPA required loading calculations.

As a part of the proposed project, off-site watermain will be extended to the Site to provide a means of connection for water service. A 16" watermain along E. Reed Road from S. Broadway Road is proposed as part of the development.

In addition to the water distribution infrastructure improvements, a 30" public sanitary sewer main will be extended to the Site along S. Broadway Road and E. Reed Road to serve the subject site. The proposed unmanned Commonwealth Edison utility substation (Lot 1) will not require water for normal operations, will not generate wastewater, and will not require the use of a fire hydrant.

WATER DEMAND:

The proposed technology campus will require water primarily for domestic and industrial use. The table below represents the estimated average water demand utilizing a recommended 15 gallons per day (GPD) per employee in accordance with Section 370, Appendix B, Table 2 of Title 35 of the Illinois Administrative Code, *Illinois Recommended Standards for Sewage Works*. Mechanical demands were developed using demand information from Aligned's comparable data center sites. The mechanical demands cover traditional building operation and upkeeping demands such cleaning. The ADC provided demands were used as the baseline to establish unit water demands of 8.58 gpd/MW for average day demand and 28.83 gpd/MW for maximum day demand. These unit demands were then applied to the anticipated data center capacity to develop the estimated mechanical demands. See **Table 1** for a summary of average day demands. See **Table 2** for summary of max day demands.

Table 1: Average Water Demand Calculations Summary					
Building	Floor Area (SF)	Employees	Domestic Average Day Demand (GPD)	Estimated Mechanical Average Day Demand (GPD)	Total Average Day Demand (GPD)
Building 1	344,862	72	1,080	618	1,698
Building 2	344,862	72	1,080	618	1,698
Building 3	344,862	72	1,080	618	1,698
Building 4	344,862	72	1,080	618	1,698
Building 5	344,862	72	1,080	618	1,698
Building 6	344,862	72	1,080	618	1,698
Building 7	344,862	72	1,080	618	1,698
Building 8	344,862	72	1,080	618	1,698
Building 9	344,862	72	1,080	618	1,698
Building 10	344,862	72	1,080	618	1,698
Building 11	344,862	72	1,080	618	1,698
TOTAL	3,793,482	792	11,880	6,798	18,678

TABLE 1: Average Daily Water Demand is conservatively based off 792 employees on campus daily. Total Full-Time Employees for the campus is projected to be 750 employees. Employees also work in shifts and are not all expected to be present every day.

Table 2: Max Day Demand Calculations Summary			
<i>Building</i>	<i>Domestic Max Day Demand (GPD)¹</i>	<i>Estimated Mechanical Max Day Demand (GPD)</i>	<i>Total Max Day Demand (GPD)¹</i>
Building 1	4,320	2,076	6,396
Building 2	4,320	2,076	6,396
Building 3	4,320	2,076	6,396
Building 4	4,320	2,076	6,396
Building 5	4,320	2,076	6,396
Building 6	4,320	2,076	6,396
Building 7	4,320	2,076	6,396
Building 8	4,320	2,076	6,396
Building 9	4,320	2,076	6,396
Building 10	4,320	2,076	6,396
Building 11	4,320	2,076	6,396
	47,520	22,836	70,356

TABLE 2: Assumes a peaking factor of 4 for the domestic demand in accordance with 35 Ill. Adm. Code 370, Appendix D, Figure No. 1 (Design of Sewers – Ratio of Peak Flow to Daily Average Flow).

Bentley WaterCAD was utilized for the modeling of the proposed water distribution system. It is estimated the Site will be served by the 16" PVC water main extension along E. Reed Road from S. Broadway Road. The E Reed Road and S. Broadway Road connection to the Village system is modeled as a pump and reservoir combination. A hydrant test was conducted at E. Reed Road from S. Broadway Road to confirm flow and pressure availability at the Site connection. To reflect the flows within the Village system supplying the site, the water source was modeled as a reservoir and pump system. The HGL of the reservoir is set at an elevation of 682.79 feet, which accounts for the existing ground elevation plus the static head measured during the hydrant flow test. The pump elevation is set at 566.79 feet to account for the invert elevation at the hydrant. Utilizing a reservoir and pump rather than solely a reservoir allows the model to account for decreases in system pressure during extreme demand (fire) scenarios at the Site. The pump from the hydrant test was modeled as a standard (3 Point) pump with a design and max operating flow (measured flow at the tested hydrant) of 1,061 gallons per minute (GPM) and 3,034 (Flow at 20 psi) GPM, respectively, as summarized in **Table 3**.

Table 3: Water Source Information				
<i>Hydrant Location</i>	<i>Hydrant Elevation (ft)</i>	<i>Static Pressure (psi)</i>	<i>Residual Pressure (psi)</i>	<i>Hydrant Flow at 20 psi (gpm)</i>
Reed and Broadway	579	48	44	3,034

Pipe Sizing Calculations:

- Minimum onsite water main diameter = 8", PVC
- Building service line diameter = 6", PVC
- Fire hydrant laterals = 6", Ductile Iron

The WaterCAD model was developed using a Max Day Plus Fire Flow scenario, which represents system conditions under max day demand with the addition of fire flow demand. The fire flow constraints included a minimum fire flow of 2,000 gpm at a residual pressure of 20 psi at each of the proposed hydrants on site in accordance with IEPA standards. The Site water distribution system was sized to meet the Max Day Plus Fire Flow Scenario. The modeling of the proposed water main network during the fire flow scenario shows that the Site will be able to provide 2,000 gpm at each fire hydrant node. The required fire flow of 2,000 GPM will be available at any hydrant location in the Site, and the Site will withstand these pressures for any duration of time assuming the flow within the existing lines remain constant. Resulting pressures at Buildings 1 to 11 ranged from 99 to 100 psi during the Max Day Plus Fire Flow scenario. Fire flow results and the WaterCAD pipe network model are provided in **Appendix A**.

A Max Day Plus Sprinkler Demand scenario was modeled by applying an additional 900 gpm at the Building 3 point of connection to simulate an active sprinkler demand at the highest building pad elevation on the Site. Assuming a minimum onsite water main diameter of 8-inch PVC, the resulting pressures range from 91 to 94 psi across the buildings. When a 900 gpm sprinkler demand is applied at the Building 3 point of connection under the Maximum Day Plus Fire Flow scenario, all of the hydrants are able to maintain the minimum required fire flow of 2,000 gpm at a residual pressure of 20 psi.

WASTEWATER DEMAND:

The wastewater demand factors utilized a recommended 15 GPD per IEPA guidance.

Please see **Table 4** below for the average day wastewater demand and **Table 5** below for max day wastewater demand estimates for the Site:

Table 4: Average Wastewater Demand Calculations Summary			
Building	Domestic Wastewater Usage (GPD)	Estimated Mechanical Wastewater Usage (GPD)	Average Total Wastewater Demand (GPD)
Building 1	1,080	618	1,698
Building 2	1,080	618	1,698
Building 3	1,080	618	1,698
Building 4	1,080	618	1,698
Building 5	1,080	618	1,698
Building 6	1,080	618	1,698
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Building 9	1,080	618	1,698
Building 10	1,080	618	1,698
Building 11	1,080	618	1,698
TOTAL	11,880	6,798	18,678

TABLE 4: Average Daily Wastewater Demand is conservatively based off 792 employees on campus daily. Total Full-Time Employees for the campus is projected to be 750 employees. Employees also work in shifts and are not all expected to be present every day.

Table 5: Max Day Wastewater Demand Calculations Summary			
<i>Building</i>	<i>Domestic Max Day Demand (GPD)¹</i>	<i>Estimated Mechanical Max Day Demand (GPD)</i>	<i>Total Max Day Demand (GPD)¹</i>
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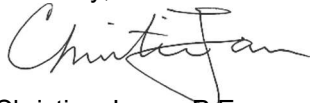
TABLE 5: Assumes a peaking factor of 4 for the domestic demand in accordance with 35 Ill. Adm. Code 370, Appendix D, Figure No. 1 (Design of Sewers – Ratio of Peak Flow to Daily Average Flow).

CONCLUDING REMARKS:

Since the proposed technology campus has been intentionally designed to utilize non-evaporative cooling systems to limit water consumption, the proposed technology campus is anticipated to have lower potable water and wastewater demands than many traditional manufacturing and industrial uses permitted within the I-1 zoning district.

If you have any questions or concerns, please contact me at (303) 228-2300.

Sincerely,



Christian Jones, P.E.
Project Manager

ATTACHMENTS

- E Reed Road 16" Water Main and Site Preliminary Hydraulic Model
 - Max Day + Flow Results
 - Max Day + Fire Flow w/ Sprinkler Demand Results