

July 20, 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 9 data center buildings. Each data center building will include an administrative area, generator yard, truck dock, and parking lot. The proposed technology campus is anticipated to utilize non-evaporative, air-cooled systems, which have a relatively low potable water demand compared to evaporative cooling systems. 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.

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 are 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.

## 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 per Illinois Environmental Protection Agency (IEPA) guidance. See **Table 1** for a summary of average day demands. See **Table 2** for summary of max day demands.

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| 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                                         | 323,000          | 86         | 1,290                             | 618                                           | 1,908                          |
| Building 2                                         | 323,000          | 86         | 1,290                             | 618                                           | 1,908                          |
| Building 3                                         | 323,000          | 86         | 1,290                             | 618                                           | 1,908                          |
| Building 4                                         | 323,000          | 86         | 1,290                             | 618                                           | 1,908                          |
| Building 5                                         | 428,500          | 116        | 1,740                             | 824                                           | 2,566                          |
| Building 6                                         | 323,000          | 86         | 1,290                             | 618                                           | 1,908                          |
| Building 7                                         | 323,000          | 86         | 1,290                             | 618                                           | 1,908                          |
| Building 8                                         | 428,500          | 116        | 1,740                             | 824                                           | 2,566                          |
| Building 9                                         | 428,500          | 116        | 1,740                             | 824                                           | 2,566                          |
| <b>TOTAL</b>                                       | <b>3,223,500</b> | <b>864</b> | <b>12,960</b>                     | <b>6,180</b>                                  | <b>19,146</b>                  |

| Table 2: Max Day Demand Calculations Summary |                                            |                                           |                                         |
|----------------------------------------------|--------------------------------------------|-------------------------------------------|-----------------------------------------|
| Building                                     | Domestic Max Day Demand (GPD) <sup>1</sup> | Estimated Mechanical Max Day Demand (GPD) | Total Max Day Demand (GPD) <sup>1</sup> |
| Building 1                                   | 5,160                                      | 2,076                                     | 7,236                                   |
| Building 2                                   | 5,160                                      | 2,076                                     | 7,236                                   |
| Building 3                                   | 5,160                                      | 2,076                                     | 7,236                                   |
| Building 4                                   | 5,160                                      | 2,076                                     | 7,236                                   |
| Building 5                                   | 6,960                                      | 2,768                                     | 9,728                                   |
| Building 6                                   | 5,160                                      | 2,076                                     | 7,236                                   |
| Building 7                                   | 5,160                                      | 2,076                                     | 7,236                                   |
| Building 8                                   | 6,960                                      | 2,768                                     | 9,728                                   |
| Building 9                                   | 6,960                                      | 2,768                                     | 9,728                                   |
|                                              | <b>51,840</b>                              | <b>20,760</b>                             | <b>72,600</b>                           |

1. Assumes a peaking factor of 4 for the domestic demand

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 that are both at an elevation of 579 ft (the elevation of the hydrant based on USGS contour data). 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**.

| <b>Table 3: Water Source Information</b> |                               |                              |                                |                                     |
|------------------------------------------|-------------------------------|------------------------------|--------------------------------|-------------------------------------|
| <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 1,500 gpm at a residual pressure of 20 psi at each of the proposed hydrants on site. 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 1,500 gpm at each fire hydrant node. The required fire flow of 1,500 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 9 ranged from 52 to 54 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 2,000 gpm at the Building 9 point of connection to simulate active sprinkler demand at the largest building on the Site. Assuming a minimum onsite water main diameter of 12-inch PVC, the resulting pressures range from 25 to 36 psi across the buildings. When a 2,000 gpm sprinkler demand is applied at the Building 9 point of connection under the Maximum Day Plus Fire Flow scenario, none of the hydrants are able to maintain the minimum required fire flow of 1,500 gpm at a residual pressure of 20 psi. If this operating condition is anticipated, it is recommended that a booster pump station be installed on-site to ensure the minimum required fire flow is available throughout the site

## 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                                              | 1,290                           | 258                                         | 1,548                                 |
| Building 2                                              | 1,290                           | 258                                         | 1,548                                 |
| Building 3                                              | 1,290                           | 258                                         | 1,548                                 |
| Building 4                                              | 1,290                           | 258                                         | 1,548                                 |
| Building 5                                              | 1,740                           | 344                                         | 2,086                                 |
| Building 6                                              | 1,290                           | 258                                         | 1,548                                 |
| Building 7                                              | 1,290                           | 258                                         | 1,548                                 |
| Building 8                                              | 1,740                           | 344                                         | 2,086                                 |
| Building 9                                              | 1,740                           | 344                                         | 2,086                                 |
| <b>TOTAL</b>                                            | <b>12,960</b>                   | <b>2,580</b>                                | <b>15,546</b>                         |

| Table 5: Max Day Wastewater Demand Calculations Summary |                                            |                                           |                                         |
|---------------------------------------------------------|--------------------------------------------|-------------------------------------------|-----------------------------------------|
| Building                                                | Domestic Max Day Demand (GPD) <sup>1</sup> | Estimated Mechanical Max Day Demand (GPD) | Total Max Day Demand (GPD) <sup>1</sup> |
| Building 1                                              | 5,160                                      | 527                                       | 5,687                                   |
| Building 2                                              | 5,160                                      | 527                                       | 5,687                                   |
| Building 3                                              | 5,160                                      | 527                                       | 5,687                                   |
| Building 4                                              | 5,160                                      | 527                                       | 5,687                                   |
| Building 5                                              | 6,960                                      | 702                                       | 7,668                                   |
| Building 6                                              | 5,160                                      | 527                                       | 5,687                                   |
| Building 7                                              | 5,160                                      | 527                                       | 5,687                                   |
| Building 8                                              | 6,960                                      | 702                                       | 7,668                                   |
| Building 9                                              | 6,960                                      | 702                                       | 7,668                                   |
|                                                         | <b>51,840</b>                              | <b>5,268</b>                              | <b>57,126</b>                           |

1. Assumes a peaking factor of 4 for the domestic demand

## 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,



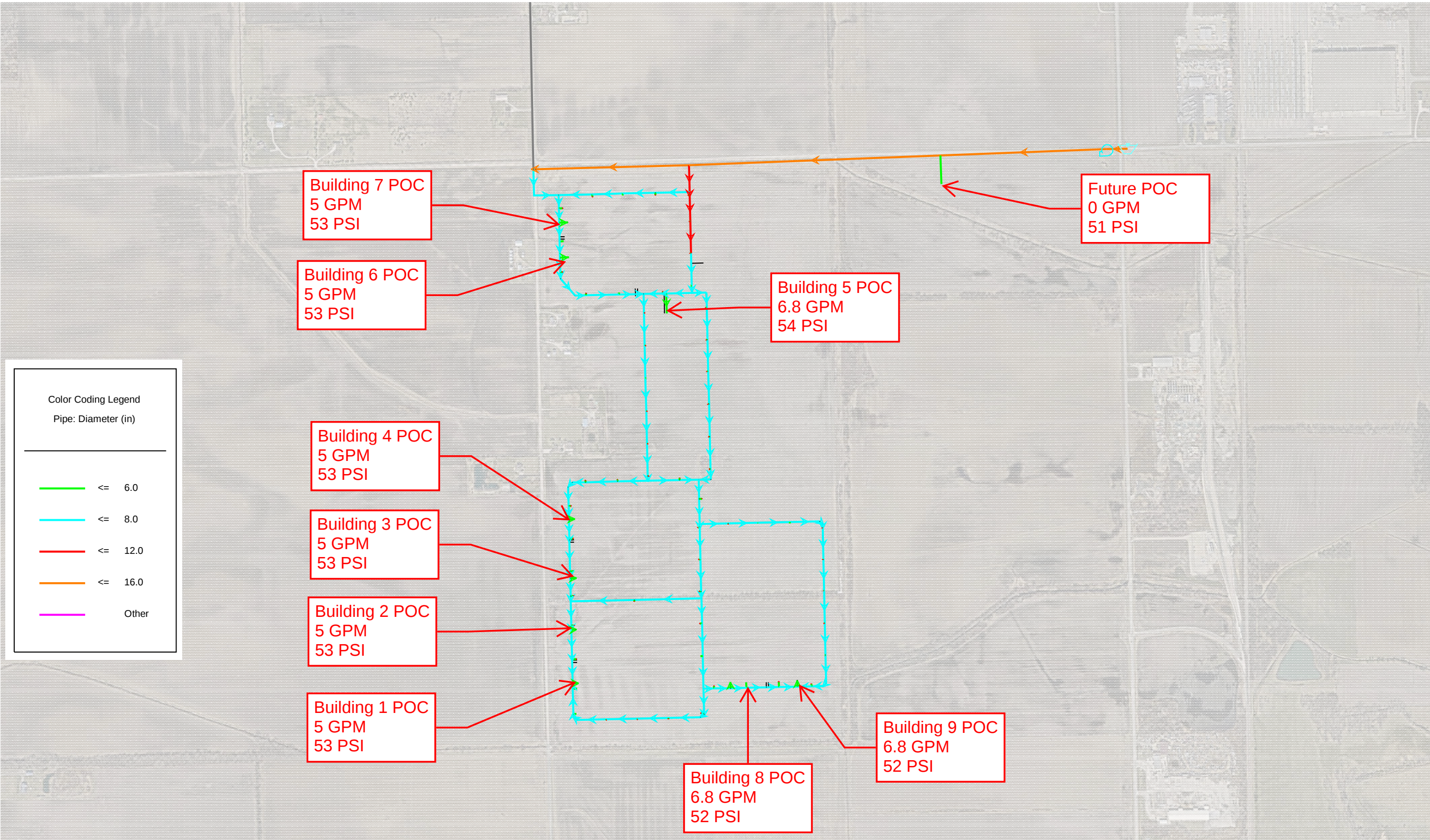
Christian Jones, P.E.

Project Manager

ATTACHMENTS

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

Scenario: Max Day + Fire Flow



Scenario: Max Day + Sprinkler Demand

