

Additional Regulations for Digital Infrastructure Uses (New Section 4.4)

4.4.1 General

4.4.1.1 Purpose and Applicability

- (1) This Section is intended to:
 - (a) Define the minimum threshold for certain uses to qualify as Digital Infrastructure Uses;
 - (b) Identify additional data required by the City for proposed Digital Infrastructure Uses;
 - (c) Set standards to evaluate projects with disproportionate infrastructure demand relative to public benefit; and
 - (d) Establish additional development standards applicable to such Digital Infrastructure Uses.
- (2) The development standards within this Section apply to Digital Infrastructure Uses, as defined below, in any location or district.
- (3) Developments with Digital Infrastructure Uses shall be designed in accordance with the following conditions and standards, which shall control in the event of conflict over the other provisions of this LDC.
- (4) In addition to the standards of this Section, the requirements of the City's adopted Engineering Manual and all applicable State and Federal regulations apply to the development of Digital Infrastructure Uses.

4.4.1.2 Digital Infrastructure Uses Defined

A use is classified as a Digital Infrastructure Use if either of the following independent qualification criteria is met:

- (1) Cooling-Based Qualification

If the development utilizes evaporative or non-evaporative cooling systems designed to support:

 - (a) Data processing and transmission;
 - (b) Cryptocurrency mining; or
 - (c) High-density computing operations.

(2) Use Definition Qualification

A use is a Digital Infrastructure Use if categorized as one of the following, as interpreted by the Director:

(a) Digital Infrastructure

A use including but not limited to a Data Center (see (b) below) whose primary purpose is to provide storage, management, processing, and transmission of digital data, including the housing of computer and/or network equipment, servers, data storage systems, and related components such as power and cooling systems, utility substations, and emergency backup systems supporting digital operations. Digital Infrastructure includes cryptocurrency mining operations and other specialized uses of high-density computing or telecommunications hardware and other uses that meet the power use, water use, or environmental impact criteria established in Section 4.4.3.3 of this LDC.

(b) Data Center

A facility whose primary use is to house a collection of computer servers and associated components, such as telecommunication, storage, and backup systems that supply information to single or multiple end users off-site. Data Centers will typically require large amounts of electricity, strict temperature control and high security and will generally have few employees on-site at any given time. Such use may also be referred to as a server farm.

(c) Energy Production and Storage Facility

A privately developed and operated facility used for operations such as the generation, collection, conversion, or storage of electrical energy, including associated equipment, structures, and infrastructure. This use includes large-scale or utility-scale installations such as fossil fuel-fired power generation facilities, nuclear energy facilities, wind energy farms, solar energy farms, battery energy storage systems, inverters, transformers, switchgear, monitoring equipment, and related accessory components. It does not include small, building-mounted, or site-integrated energy systems intended primarily for on-site consumption, nor facilities owned and operated by a public utility or governmental entity.

4.4.2 Submittal Requirements for Digital Infrastructure Uses

4.4.2.1 Generally

(1) Employment Center Plan Required

A Digital Infrastructure Use shall not be permitted in any district or location within the City's jurisdiction without receiving approval of an Employment Center Plan (see Chapter 2 and Section 3.6 of this LDC).

(2) An Employment Center Plan Application for a Digital Infrastructure Use must include the following information:

- (a) A Digital Infrastructure Use Agreement; and
- (b) A Digital Infrastructure Use Management Plan.

4.4.2.2 Annual Reporting

(1) An annual report shall be maintained by the owner or operator of Digital Infrastructure Uses. Annual reports may be audited upon request by the City.

(a) An Annual Report shall include:

- i. Water, wastewater, and energy usage data, and any measures taken during times of drought or grid emergencies,
- ii. Emissions reports for the Digital Infrastructure Use facility and any backup power sources, and
- iii. Digital Infrastructure Use Management Plan updates, if applicable.

(b) The annual reporting requirements of this Section are in addition to the monthly reporting requirements for noise and utility usage established in 4.4.2.3(4).

4.4.2.3 Digital Infrastructure Use Agreement

As part of a Digital Infrastructure Use's Employment Center Plan submittal, the developer of the Digital Infrastructure Use shall enter into an Official Agreement with the City detailing certain characteristics of the Digital Infrastructure Use. The Digital Infrastructure Use Agreement shall be executed prior to the issuance of a building permit.

The Digital Infrastructure Use Agreement shall include, at a minimum, the following:

- (1) Agreement that the Digital Infrastructure Use shall comply with all mandatory curtailment orders issued by the City or applicable utility provider during declared drought conditions or electric grid emergencies.
- (2) A limit on daily water use.
- (3) Agreement that the Digital Infrastructure Use owner or operator shall continuously monitor the Digital Infrastructure Use's utility consumption and maintain an Annual Report as detailed in Section 4.4.2.2, including any use- or equipment-specific monitoring and reporting provisions.
- (4) Agreement that the Digital Infrastructure Use owner or operator shall provide continuous monitoring of the Digital Infrastructure Use's utility usage and the noise levels at the Digital Infrastructure Use's property lines and report the results to the City Manager or designee on a monthly basis.
- (5) Agreement that the City retains all rights to a transparent process, including the ability to publicly report:
 - (a) Water, energy, and emissions data;
 - (b) The ramp schedule for the Digital Infrastructure Use coming into full operation/capacity;
 - (c) Expectations and potential impacts for water, wastewater, energy, and environmental systems; and
 - (d) Any potential cost-sharing agreements.
- (6) Agreement that site construction shall not begin prior to approval of all utility provider, State, and Federal permits, as applicable.
- (7) A requirement for financial assurance to the City in the event of decommission of the site.
- (8) Agreement on an enforcement plan [that includes a graduated compliance and enforcement structure, with escalating penalties for repeated or continuing violations and consideration of demonstrated compliance history, and progressive fee structure](#) for violations of the terms of the Digital Infrastructure Use Agreement, Management Plan, and Employment Center Plan.

4.4.2.4 Digital Infrastructure Use Management Plan

As part of a Digital Infrastructure Use's Employment Center Plan submittal, the developer of the Digital Infrastructure Use shall provide a management plan detailing, at a minimum, the following information:

(1) Water Use, Drought, and Long-Term Security

The water sources that will be used to supply the Digital Infrastructure Use facility and the specific automated water metering/monitoring equipment used in the facility.

(2) Cooling Systems and Wastewater

Proof of design conforming with the City's pretreatment program, as amended, with information on the specific metering/monitoring equipment used in the facility.

(3) An uninterruptible power supply (UPS) plan describing:

- (a) Fuel types;
- (b) Storage capacity and energy storage system type;
- (c) Refueling logistics during extended outages;
- (d) Information on the specific metering/monitoring equipment used in the facility;
- (e) A curtailment plan for grid emergencies; and
- (f) The ability to handle a critical load and activate generators in a timely manner.

(4) Decommissioning, Abandonment, and Liability Plan

- (a) The expected operational lifespan of the Digital Infrastructure Use; and
- (b) The plan for decommissioning the facility, including site cleanup and e-waste disposal, if applicable.

4.4.3 Digital Infrastructure Use Performance and Design Standards

4.4.3.1 Generally

- (1) This Section 4.4.3 applies to all Digital Infrastructure Uses.
- (2) The Performance Standards of Section 5.9.4 of this LDC apply to all Digital Infrastructure Uses, except as modified in this Section 4.4.3.

- (3) This Section 4.4.3 does not supersede the State and Federal regulations applicable to the certain types of uses or activities classified by this Section as Digital Infrastructure Uses. In case of conflict with State or Federal regulations, the more restrictive provision shall control.

4.4.3.2 Location Standards for Digital Infrastructure Uses

- (1) A new Digital Infrastructure Use shall not be built within a three (3)-mile buffer of a property with an existing Digital Infrastructure Use, whether such Digital Infrastructure use is located within the City limits, the City's ETJ, or outside the ETJ.
- (2) For the purposes of this Section 4.4.3.2, an existing Digital Infrastructure Use means:
 - (a) A property within the City limits with an active and submitted Employment Center Plan that allows a Digital Infrastructure Use,
 - (b) A property within the City limits with an approved Employment Center Plan that allows a Digital Infrastructure Use,
 - (c) A property outside the City limits where a permit for a use meeting the City's definition of a Digital Infrastructure Use has been approved by the applicable authority, and
 - (d) A property within which a decommissioned or inactive Digital Infrastructure Use is located, if the structures have not been removed.

4.4.3.3 Performance Standards for Digital Infrastructure Uses

- (1) Water Standards
 - (a) Water use within a Digital Infrastructure Use shall be continuously measured using automated metering equipment capable of recording water consumption at regular intervals and reported to the City in accordance with the Annual Report standards in Section 4.4.2.2.
 - (b) Digital Infrastructure Use Cooling:
 - i. Digital Infrastructure Uses shall utilize:
 - a. Closed-loop cooling systems; or
 - b. Air-cooled or hybrid systems achieving water use reduction equivalent or superior to closed-loop cooling systems.

- c. Evaporative cooling, if the entire water demand for evaporative cooling is satisfied by reclaimed or otherwise non-potable water sources in accordance with (c) below, and if approved by the City Council through the Employment Center Plan process.

(c) Potable Water Restriction

Potable water shall not be used for ongoing cooling operations and may only be used for initial system fill.

- i. Potable water may be used in Digital Infrastructure Uses for the usual and customary domestic uses, including, but not limited to, fire protection, landscape irrigation, maintenance, and as reasonably necessary for safe, continuous, and effective operation, provided:
 - a. After the initial system fill, no potable water shall be authorized for use in refilling the cooling system in any structure without the prior approval of the City Manager. The City Manager shall report any approval granted under this Subsection to the City Council within 30 days of the approval.
- ii. If non-potable water (including reclaimed, recycled, or other non-potable sources of water) becomes available to the site in sufficient quantity and suitable quality, the applicant shall use such non-potable water and shall not rely on the City's potable water for refilling cooling systems.

(d) Evaporative Cooling Limitations

- i. If City Council approves evaporative cooling methods as part of an Employment Center Plan, the following standards apply:
 - a. Water demand for evaporative cooling systems shall be met through:
 - Reclaimed water;
 - On-site reuse; or
 - Other non-potable sources.
 - b. The Digital Infrastructure Use Agreement shall establish a maximum allotment of City-provided reclaimed water. No

Digital Infrastructure Use may use more City-provided reclaimed water than established in the applicable agreement.

(2) Electric Power Standards

(a) Electric utility use within a Digital Infrastructure Use shall be continuously metered, reported to the City in accordance with the Annual Report standards in Section 4.4.2.2.

(b) Uptime

- i. Digital Infrastructure Uses shall provide on-site backup power generation or storage capable of supporting the site autonomously for a minimum of 24 hours.
 - a. Power generation and storage facilities shall be screened in accordance with Section 4.4.3.4(6) below.

(c) Power Generation Standards

- i. Generators shall be operated solely when necessary to maintain safe, effective, code-compliant, and continuous facility operation in cases where grid emergencies, maintenance, or outages interrupt the supply of power to the Digital Infrastructure Use facility.
 - a. Backup power generation equipment shall not be operated as a substitute for primary grid service that the operator has failed to contract for or procure, except during:
 - The construction phase prior to permanent grid interconnection, subject to a ramp-up schedule approved by the City Manager;
 - The period between the final Certificate of Occupancy and permanent grid interconnection; or
 - Periods when grid interconnection is delayed due to circumstances beyond the operator's reasonable control, as documented in writing to the City Manager within 30 days of the onset of such delay.
- ii. Generation capacity shall not be used for primary commercial power sales.

- a. The momentary paralleling or incidental export of energy that occurs as part of closed-transition transfer, synchronization, testing, or protective operations shall not be deemed operation for export, provided the generator is not configured or operated for sustained net export and complies with all interconnection requirements.
- iii. Generators shall not provide power to any structure not located on the same property.
- iv. Operation and maintenance of emergency site generators shall be subject to the following conditions:
 - a. The exhaust systems of petroleum-powered generators shall be piped upward and not directly towards any property ~~developed with and/or zoned for development of a residential use~~ zoned for residential use or currently used for residential purposes.
 - b. Generators may be tested one time during each calendar month for a period not longer than recommended by the manufacturer of the generator, such time to be between 8:00 a.m. and 5:00 p.m. Central Time and on any Monday through Friday.
 - c. Only the generator(s) that provide(s) electric power to the structure(s) located on the Digital Infrastructure Use property affected by a loss or reduction of electrical power shall be operated during the events described in 4.4.3.3(2)(c)i.a.

(3) Air Quality Standards

The operation of generators and other non-road equipment on the Digital Infrastructure Use property shall comply with U.S. Environmental Protection Agency (EPA) Tier IV emission standards for non-road engines, as adopted and published in 40 Code of Federal Regulations, Part 1039, in effect at the time submission of the application for building permit for the building for which such equipment will be supporting and enforced by the Texas Commission on Environmental Quality (TCEQ). The City may coordinate with TCEQ regarding air quality compliance, and where required by TCEQ or applicable Federal or State regulations, continuous

emissions monitoring systems shall be utilized, and applicable emission monitoring data shall be made available to the City.

4.4.3.4 Design Standards for Digital Infrastructure Uses

(1) Generally

Developments with Digital Infrastructure Uses shall be designed to minimize the impacts of Digital Infrastructure Uses on the surrounding area in accordance with Section 5.9.4 of this LDC, as modified below.

(2) Minimum Site Area

- (a) Property intended for development with a Digital Infrastructure Use shall be platted as a single lot with a minimum size of 100 acres.
- (b) No subdivision, replatting, lot split, or other division of a lot with a Digital Infrastructure Use into two (2) or more parcels shall be permitted without prior approval by the City Council or through approval of an Employment Center Plan.
- (c) Any conveyance, transfer, or encumbrance of a portion of a property with a Digital Infrastructure Use that would result in the creation of a separate parcel or tract shall be null and void unless and until such amendment has been approved by the City Council.

(3) Maximum Height

The maximum height for Digital Infrastructure Use structures is three (3) stories or 60 feet, whichever is more restrictive, notwithstanding any other maximum height permitted by the LDC.

(a) Exception

The maximum height of a Digital Infrastructure Use structure or part of a structure may be stepped up to 120 feet maximum at a ratio of one (1) foot in additional height for each ten (10) feet beyond the 500-foot setback that structure or part of a structure is set back.

(4) Setbacks

- (a) Digital Infrastructure Uses must be designed to provide appropriate setbacks and noise/visibility mitigation measures between the Digital Infrastructure Use structure(s) and ~~residential properties in~~[properties zoned for residential use or currently used for residential purposes in](#) accordance with the standards of this Section.

(b) Structures and mechanical equipment within Digital Infrastructure Uses are subject to the following setback standards:

- i. No structure shall be located closer than 500 feet to a property line.
- ii. No structure shall be located closer than 500 feet (unless determined otherwise in the Employment Center Plan process) to a Neighborhood Avenue or smaller street.
- iii. No ~~structure or~~ mechanical facility~~ies~~, including but not limited to private substations, transformers, and cooling equipment shall be located closer than 1,000 feet to any property zoned for residential use ~~or currently used for residential purposes at the time of submission of the development application for such building; whether or not such property is developed with a residential use at the time of submission of the permit application.~~
 - a. Utility provider switchyards are exempt from this requirement.
- iv. The City may waive the minimum setbacks adjacent to other industrial uses within an Employment Center. The minimum setback required under subsection iii above for properties zoned for residential use or currently used for residential purposes may not be waived.
- v. In accordance with the noise standards of Section 4.4.3.4(9) below, an acoustic study shall be submitted with any proposed Digital Infrastructure Use proposal. Results from the study showing any noise in excess of the standards of Section 4.4.3.4(9) shall require additional setback and/or noise mitigation, as determined by the City Manager and as documented in a revised Employment Center Plan.

(c) No parking shall be located closer than 50 feet to any property line.

(5) Landscaping and Buffering

- (a) Landscaping and other mitigation features shall be installed to buffer impacts to Neighborhood Avenue or smaller streets and on property lines adjacent to property zoned as and/or used for residential uses.
- (b) Landscape screening along Neighborhood Avenue and smaller streets and on property lines adjacent to property zoned as and/or

used for residential uses shall be designed to achieve 80% opacity within two years of planting. Landscape screening shall be designed to limit foliage gaps and incorporate native species in a tiered planting approach (i.e., staggered double row of trees or tiered canopy using ground cover, shrubs, and overstory trees).

- (c) Berms or walls at least ~~four (4)~~ twelve (12) feet above grade shall be constructed in conjunction with landscape planting to achieve aesthetic buffering.
 - (d) The City Manager may require additional height or placements of such berms or walls and/or additional landscape plantings to mitigate the visible and audible impacts of a Digital Infrastructure use as part of an initial or revised Employment Center Plan.
 - (e) All landscaping and/or berms or walls shall be installed with the first phase of construction of a Digital Infrastructure use.
- (6) Screening
- (a) All mechanical equipment and utility facilities must be fully screened from view at the ground level from all existing and planned public roads and adjoining parcels using opaque materials, ventilating materials such as mesh, lattice, cladding, or grillwork, or a combination of these methods or similar methods so as to ensure that the mechanical equipment is fully screened to the maximum extent that permits necessary ventilation for any equipment.
 - (b) All mechanical equipment and utility facilities located at the ground level shall be screened with a masonry wall not less than eight (8) feet in height. The masonry wall may include layered mesh, lattice, cladding, or grillwork, or a combination of these methods, or similar materials, up to 50% of the surface area of the wall so as to allow necessary ventilation for any equipment, provided that landscaping is installed along the portions of the wall containing such materials and is of sufficient height, spacing, and density to provide a continuous visual screen of such portions of the wall.
 - (c) Backup generators shall be screened from view and enclosed with sound attenuation walls which must be, at minimum, taller than the height of the generator.
- (7) Utility Location

Subject to compliance with the City's adopted Electrical Code, private electrical utilities may cross but shall not run parallel within the City right-of-way.

(8) Light and Glare

- (a) Outdoor lighting shall be designed and installed in accordance with the lighting provisions in Section 5.7 of this LDC, the performance standards in Section 5.9.4 of this LDC, the provisions of the City's Engineering Manual, and such other lighting regulations enacted by City in effect at the time of submission of an application for a building permit.
- (b) A photometric design and review shall accompany the application for a building permit for a Digital Infrastructure Use.

(9) Noise

(a) Measurement

For the purposes of this Section, the weighted-decibel measurements described in the preconstruction acoustic study and post-construction monitoring shall be measured continuously at the property line of the Digital Infrastructure Use property and reported as an average of 15-minute increments, to avoid reporting temporary peaks.

(b) Acoustic Study

Prior to the issuance of any permits for development of a Digital Infrastructure Use, an acoustic study shall be conducted along the boundaries of the Digital Infrastructure Use property to establish an existing conditions baseline for dBA (audible noise) and dBC (low-frequency noise) levels at the property lines, including one-third octave band measurements for purposes of evaluating tonal and narrow-band noise in accordance with 4.4.3.4(9)(e). A copy of such study shall be provided to the City.

(c) Maximum Noise Level

i. dBA Noise Level

Except during periods of construction on a Digital Infrastructure Use property as allowed in Section 19-4 of the Code of Ordinances, and except as otherwise provided for Employment

Center adjacency in 4.4.3.4(9)(d), noise generated by a Digital Infrastructure Use, as measured at the property line of the Digital Infrastructure Use property, shall not exceed the greater of:

- a. ~~50 dBA between the hours of 7:00 a.m. and 10:00 p.m. and 45 dBA between the hours of 10:00 p.m. and 7:00 a.m. at all times;~~
or
- b. The pre-development level that is measured in the field at such property line.

ii. dBC Noise Level

Except during periods of construction on a Digital Infrastructure Use property as allowed in Section 19-4 of the Code of Ordinances, and except as otherwise provided for Employment Center adjacency in 4.4.3.4(9)(d), noise generated by a Digital Infrastructure Use, as measured at the property line of the Digital Infrastructure Use property, shall not exceed the pre-development low-frequency noise level (measured in dBC), established at such property line by the pre-construction acoustic study.

(d) Maximum Noise Level – Employment Center Adjacency

Except during periods of construction on a Digital Infrastructure Use property as allowed in Section 19-4 of the Code of Ordinances, and except when adjacent to a property zoned for residential use or currently used for residential purposes, which is subject to noise limits in 4.4.3.4(9)(c)i above, noise generated by a Digital Infrastructure Use, as measured along the portion of the Digital Infrastructure Use property line adjacent to a property within an approved Employment Center Plan shall not exceed the greater of:

- i. 65 dBA; or
- ii. The pre-development level that is measured in the field at such property line.

(e) Tonal and Narrow-Band Noise

- i. Noise generated by a Digital Infrastructure Use shall be evaluated for tonal or narrow-band noise at all property lines of the Digital Infrastructure Use property, except at a property line adjacent to a property within an Employment Center Plan.

- ii. Tonal or narrow-band noise shall be deemed to exist when the sound pressure level within a one-third octave band exceeds the sound pressure levels within each of the two adjacent one-third octave bands by ten (10) dB or more.
- iii. Where tonal or narrow-band noise is identified in accordance with 4.4.3.4(9)(e)ii, five (5) dB shall be added to the measured dBA sound level for purposes of determining compliance with the applicable maximum noise level established by this Section.

(f) Intermittent Sound Level

No Digital Infrastructure Use shall create a sound level exceeding the thresholds established by this Section for more than 10 percent of any measurement period, which shall not be less than 10 minutes. The maximum intermittent sound level shall not exceed the thresholds established by this Section by more than 10 dB.

(g) Vibration

- i. No use shall produce ground-transmitted vibration exceeding a maximum peak particle velocity (PPV) of 1.0 inches per second, steady-state, as measured at the boundary of the property on which the Digital Infrastructure use is located. Impact vibrations (discrete impulses not exceeding 60 per minute) are limited to 2.0 inches per second PPV. This threshold applies as a minimum baseline.
- ii. The maximum particle velocity shall be the product of two (2) times the frequency in cycles per second times the sum of three (3) mutually perpendicular displacement components recorded simultaneously. Steady-state vibrations are those which are continuous, or in discrete impulses more frequent than 60 per minute; discrete impulses not exceeding 60 per minute shall be considered impact vibrations. Where more than one vibration standard could apply, the more stringent standard shall govern.
- iii. These standards shall not apply to vibration resulting from the operation of on-road vehicles, temporary construction activity and equipment, or roadway maintenance and repair equipment.

(10) Building Design

(a) Applicability

These requirements apply to all building facades that face adjacent existing or planned public roads, or that face an adjacent property zoned for residential use [or currently used for residential purposes](#).

(b) Requirements

i. Consistent Design

When a building has more than one façade facing an existing or planned public road or adjacent property zoned for residential use [or currently used for residential purposes](#), such façades must be consistent in terms of design, materials, details, and treatment.

ii. Differentiated Surfaces

Façades of a Digital Infrastructure Use structure must incorporate the following standards at horizontal linear intervals that may vary in frequency but must be no less frequent than every 150 horizontal linear feet or no less frequent than 3 times the average height of the building:

- a. Fenestration; and
- b. Inclusion of at least two of the following features that vary the appearance of the façade:
 - A change of pattern, color, texture, building material, or accent material.

iii. Fenestration

Each façade of a structure must include fenestration (windows) or other openings as follows:

- a. Fenestration must comprise at least 20% of the total surface area of the façade.
- b. Fenestration must be located in separated, individual placements or clustered bays.
- c. The placement pattern of individual or clustered bays of fenestration must be distributed horizontally and vertically across the façade.
- d. Fenestration must be compatible with the other design, materials, details, and treatment used on the same façade.