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MODEL DATA CENTER SITING ORDINANCE[1]
Version 1.4

Introduction and Background

In response to the increasing public concern regarding the pace and scale of development of data centers in Kentucky, and the lack of readily-available tools to help guide revision of local land use planning and zoning ordinances to address the unique issues associated with large data center development and operation, the Kentucky Resources Council (KRC) has developed this Model Data Center Zoning Ordinance to assist localities in adopting provisions to regulate the siting of data centers in their communities.[2] KRC's Model Data Center Ordinance is based upon a review of best practices from across the United States and is tailored to meet the unique needs of Kentucky, with the twin goals of facilitating appropriate siting and responsible operation of data centers within the built and natural environment, and of protection of the correlative rights of landowners and communities to the use and enjoyment of their lands and the quality of life of their neighborhoods and communities.

Each of Kentucky's 120 counties are unique, and planning and zoning should be tailored to meet and guide current development and future planning aspirations of the county's residents. This model ordinance offers a "menu" of options in certain areas, in order to allow local officials, informed by input from county residents throughout the ordinance development process, to select and adopt the options that best meet the needs and future land use plans and visions of those communities.

Data centers and data center development have recently become a concern across the country, as the development of new "artificial intelligence" tools has multiplied the demand for computer processing power, and correlative energy, water, and other resource needs. At its base, a data center is a warehouse filled with racks of computer servers, often running all hours of the day and night. As the size of data centers have grown, so has the need for ancillary equipment and resources both on- and off-site. On-site, a data center also

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[1] This ordinance was developed for consideration and use by communities in the Commonwealth by the Kentucky Resources Council, Inc. As KRC receives feedback from users, and as best practices are modified, the model ordinance will be revised and reissued. Feedback is welcome to hello@kyrc.org.

[2] For those communities without planning and zoning, KRC is developing a parallel ordinance relying on the home-rule authority of counties recognized under KRS 67.083.

now commonly includes large amounts of cooling equipment, such as cooling towers, fans, and chillers. In addition, they also contain significant on-site backup or "behind-the-meter" power generating equipment, such as diesel generators, gas turbines, and battery energy storage systems.

To place the energy use of a typical data center in context, a currently proposed data center in Louisville, Kentucky is planned at 525 MW. For an 85% capacity factor (proposed monthly average to qualify for a data center tariff), it would consume 3.90 TWh/year. This is only slightly less than LG&E's 2023 total residential sales of 3.92 TWh, and would be more than 25% of the LG&E total (across all classes) winter coincident peak of 2,011 MW in 2022/23, or 20% of their summer peak of 2,639. This means potentially that much backup generation capacity on-site, as well.

Common concerns of communities around data centers include:

- Noise, both from computer cooling systems and backup generation;
- Localized pollution, such as releases of contaminated cooling water to the air as vapor or to local waterways;
- Energy and water consumption, and indirect impacts of that consumption on other utility customers' bills.

The first two issues are primarily the concern of local regulation, including through planning & zoning. The last is primarily the concern of utilities and utility regulators, such as the Kentucky Public Service Commission (PSC) and local governments with municipal utilities not regulated by the PSC.

The KRC Model Ordinance requires a conditional use permit, in addition to limiting the location of data centers to industrial zones, believing that the flexibility accorded through the requirement of a conditional use permit allows the imposition of case-specific conditions as necessary to integrate the proposed use into the existing environment and to fully protect correlative rights of others.[3] Some zoning ordinances in other states have allowed Data Centers as uses of right in industrial zones, and a few in commercial zones.

[3] KRS 100.203(5) provides that a zoning ordinance may provide for a planning commission, rather than a board of adjustment, to hear an application for a conditional use permit in conjunction with a zoning map amendment. In counties with consolidated local governments, the imposition of binding requirements, provisions, restrictions, and conditions, and promises or agreements by an applicant can be accomplished through binding elements on approval of land development plans or subdivision plans. KRS 100.403(4). For other counties, because there is no explicit authority in KRS Chapter 100 for imposition of binding elements, in order to provide a clear path applicable to all counties, the model utilizes KRS 100.203(5) and the authority to, by conditional use permit, impose "restrictions on location, size, extent, and character of performance" of the use, KRS 100.111(6); KRS 100.237.

Since the siting of data centers and evaluation of the impact of large-scale conversion and dedication of land is a matter that is outside of the routine and typical experience of most planning commissions, this model ordinance recommends creation of a new variant of industrial land use, a requirement for obtaining a Conditional Use Permit (CUP), and inclusion of a requirement that the Conditional Use Permit (CUP) application include a fee sufficient to allow the Planning Commission to secure an independent review of the application.[4] Such expert review serves two important functions: assuring access to expertise to assist in review of proposals to rezone and requests for conditional permits to support siting and operation of data centers in already-zoned areas, and elevating public confidence in the sufficiency and accuracy of submitted information, analyses, and plans.

The CUP process that KRC has proposed tracks closely with the site assessment review required of merchant electric generating plants under Kentucky's Electric Generation and Transmission Siting Board. This is intentional, since:

- Data centers are often conceived and designed to co-locate with generation sources that are either not grid-tied or which are not utility-owned or operated, and which propose to generate electricity for the data center operations. While such electric generating facilities have a footprint that is virtually indistinguishable from "merchant" power plants regulated under the Electric Generation and Transmission Siting Law, such power sources may fall outside of that law currently because they are not intended to generate electricity for *sale* into the wholesale market.
- Even for those data centers that do not propose a separate or independent primary source of electricity, many propose back-up generators that have potential off-site consequences akin to some merchant electric generating units, justifying a similar review and requirement for mitigation.

KRC supports the recommendation of the AI Task Force that the 2026 General Assembly should consider legislative policies for the location of data centers in Kentucky including minimum requirements for location and collaboration among local, state, and private entities.

KRC believes that any state legislative enactment establishing minimum location requirements should respect the primary role of local governments in land use regulation, and in the exercise of home rule powers to regulate commerce for the protection of public health and welfare. The addition of large-load entities such as data centers, with or without on-site generation, can dramatically impact the existing electricity grid and existing ratepayers, and integration of new large load customers raises significant issues that must be addressed comprehensively in order to protect the technical, functional, and economic integrity of the electric generation and transmission infrastructure in Kentucky. Therefore, KRC recommends that the existing statutes governing Electric Generation and Transmission

[4] The fee amount could be set based on either a survey of typical costs or competitive request for proposals by consultants to undertake such a review.

Siting be amended to include Data Centers and all related non-utility transmission infrastructure within the purview of the siting board review process. Additionally, Data Centers with any on-site power generation that is grid-tied and capable of selling power into the grid at wholesale, be obligated to obtain a construction certificate from the Kentucky State Board on Electric Generation and Transmission Siting (whether it is currently selling such excess power or not).

What follows is the text, including footnotes, of the Model Data Center Zoning Ordinance.

AN ORDINANCE RELATING TO THE LOCATION, OPERATION, AND DECOMMISSIONING OF DATA CENTERS

Section 1. Intent

(1) The purpose of this ordinance is to facilitate appropriate location, development, construction, installation, and decommissioning of Data Centers in [city/county] in a predictable manner that promotes and protects the safety, health, and welfare of the community.

(2) This Ordinance and the standards and requirements established herein are intended to define and regulate Data Centers in order to minimize impact on adjacent and surrounding properties; to ensure compatibility with other adjacent and surrounding land uses; to protect environmental resources, and to assure that the correlative rights of landowners and lessors owning or leasing and hosting Data Centers are balanced with those of neighboring land and communities; and to assure that the location, construction, operation, and decommissioning of Data Centers are undertaken in a manner that integrates the use into the surrounding built and natural environment.

(3) The appropriate location, construction, and operation of Data Centers considers, avoids to the extent possible, minimizes, and mitigates any unavoidable adverse impacts to residential properties; neighborhoods; commercial areas; community and institutional buildings; land, air, and water resources; prime and productive agricultural lands; forests and woodlands; threatened and endangered species and critical habitat; and historic, natural, and sensitive lands. Standards and planning requirements are established to ensure that the use and enjoyment of lands located adjacent to and in the proximity of the Data Centers are fully safeguarded.

(4) The requirements of this Ordinance are intended to be supplemental to any safety, health, or environmental requirements of federal, state, or local laws, and regulations.

Section 2. Definitions

(1) *Commission means the _____ Planning Commission.*

(2) *Data* means any information, whether digital, electronic, optical or quantum, that can be collected, stored, processed, or transmitted.

(3) *Data Center* means a facility used primarily for the storage, management, processing, or transmission of data and includes, but is not limited to, buildings designed to accommodate computer servers, storage systems, or specialized computing hardware. A Data Center includes a Data Center principal use/structure, any Data Center accessory use/structure, and Data Center energy system. Examples of these facilities and uses include (but are not limited to) crypto processing, commercial cryptocurrency mining (bitcoin mining), artificial intelligence training and/or processing, and cloud-computing.

(4) *Data Center Principal Use/Structure* means any structure or building that is used primarily for the storage, management, processing, or transmission of data which includes, but not limited to, any building designed or used to accommodate and house computer servers, storage systems, or specialized computing hardware.

(5) *Data Center Accessory Use/Structure* means any structure or building that supports the operation of a Data Center, is located on the same tract or assemblage of adjacent parcels and is developed either as a unified development of or in further support of a Data Center. The category includes but is not limited to administrative, logistical, fiber optic, storage, and security buildings or structures; air handlers; process water and non-contact cooling water and wastewater management and treatment facilities; water holding facilities; pump stations; water towers; environmental controls (e.g., air conditioning or cooling towers, fire suppression, and related equipment), water cooling and storage facilities, security features, and any other associated electric, gas, water, wastewater, and stormwater infrastructure to support operations at the property.

(6) *Data Center Energy Systems* means energy generation and storage systems, including electrical generators or engines, electric substations, back-up power generators, battery energy storage systems (BESS), used or intended to be used as sources of electrical power during normal operations, or as back-up temporary power when the main source of power is interrupted; electric transmission and distribution lines; and pipelines. The category shall not include utility service facilities exempted under KRS 100.324. Information concerning such utility service facilities to be sited or extended on private property in support of a Data Center shall be provided to the Planning Administrator as part of any application.

(7) *Farmland of Statewide Importance* means a map unit identified by the Natural Resources Conservation Service identifying soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods.

(8) *Noise level* means the maximum sound pressure level measured in both A-weighted decibels (dBA) and C-weighted decibels (dBC) at the property line.[5]

(9) *Prime Farmland* means a map unit identified by the Natural Resources Conservation Service of the United States Department of Agriculture as having the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses.

(10) *Sensitive Use* means any residential dwelling, school, preschool, daycare center, in-home daycares, long term care facilities, retirement and nursing homes, community centers place of worship, public park, public or institutional buildings or facilities, hospitals or other medical care facilities, or agricultural operations.

(11) *Waste Heat* means heat generated as a byproduct of data center operations.

Section 3. Permitted Uses

A Data Center shall only be allowed in the Industrial Zoning District designed for such use and as a conditional use upon:

(1) Application for a zoning map amendment to reclassify the property on which the Data Center will be located as "Industrial – Data Center" and

(2) Issuance of a Conditional Use Permit by the Commission in conjunction with the requested map amendment.

Section 4. General Requirements Relating to Location of Data Centers

No Data Center shall be located:

(1) On lands with slopes over 20% or which are prone to flooding, soil or geologic instability.

(2) Where the disposal or release of any hazardous substance, pollutant, or contaminant from a Data Center could affect karst terrain.

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[5] The use of dBC accounts for low-frequency sound components, such as those generated by ventilation fans, cooling units, and similar equipment, which may add 10–20 decibels of additional perceptible noise beyond the A-weighted measurement.

(3) Where the structure or facility will restrict the flow of a 100-year flood, reduce the temporary storage capacity of the floodplain, or be placed in a manner likely to increase flood frequency, velocity, or heights so as to pose a risk or hazard to human health, property, wildlife, or land or water resources.

(4) In wetlands or within 50 feet of the boundary of any wetland.

(5) On prime farmland, or farmland of state importance.

(6) Where such facilities may cause or contribute to the taking of a threatened or endangered species or adversely affect critical habitat.

Section 5. General Requirements Applicable to Data Centers

These standards apply to all Data Centers.

A. Setbacks

Data Center principal, accessory, and energy systems structures or facilities, other than transmission and distribution powerlines, pipelines delivering electricity or natural gas to the property, and ingress/egress for road and rail traffic, shall be located:

(1) At least 500 feet from all outer perimeter property lines of the Data Center regardless of the zoning classification of the adjacent property. These setbacks shall not apply to property lines that are interior to a Data Center site.

(2) At least 1,500 feet from a Sensitive Use or the boundary of any Residential, Commercial, or Agricultural District.

(3) Any emission point or exhaust stack from a data center energy system whether for primary or backup power, shall be required to be at least one thousand (1,000) feet from the property boundary of any adjacent property and two thousand (2,000) feet from any Sensitive Use or the boundary of any Residential, Commercial or Agricultural District.

(4) Where necessary to comply with the noise limits provided in Subsection H of this Section at the exterior perimeter property boundary, due to site configuration, topography, and projected equipment noise, the Commission may require greater setback distance.

(5) The setback distance may be reduced up to 50% where the owner of the adjoining property to which the setback applies waives, in writing, the greater setback distance, and where buffering, fencing, or other landscaping is employed such that the noise levels are not exceeded at that property boundary.

B. Structure Height, Lot Coverage, And Impervious Surface

Maximum Building Height, Lot Coverage, and Impervious Surface shall be defined by the standards applicable to the Industrial zoning classifications or under general design standards.

C. Design Standards.

A Data Center shall be designed and constructed with these considerations.

(1) All principal and accessory structures and energy systems associated with a Data Center shall be arranged, designed, and constructed to be harmonious and compatible with the site and with the surrounding properties. In general, Data Centers that visually approximate commercial office buildings are encouraged. Data Center Accessory Use(s)/Structure(s) should be located to the side or rear of the Data Center Principal Structure.

(2) Buildings shall be sited and oriented to minimize visual impacts of the bulk of the building when examined on a line-of-sight basis from adjacent public streets and Sensitive Uses.

(3) Provide safe and convenient vehicular access to the site, including sufficient on-site queuing areas at security gates and delivery, loading/unloading, and staging areas.

(4) Accommodate adequate parking at a minimum of one (1) space per employee on the largest shift and three (3) visitor spaces.

(5) Incorporate appropriate erosion control/stormwater management practices.

(6) House the equipment used in any Data Center in a metered, electrically grounded, and pre-engineered metal-encased structure with a fire rating designed to resist an internal electrical fire for at least thirty (30) minutes. The containment space shall contain baffles that automatically close in the event of fire, independent of a possible electric system failure.

(7) All building façades that face existing and/or planned public roads or face property zoned for residential use shall include these design features:

a. A change in façade surface to include building material, pattern, texture, color, accent materials at least every 150 horizontal linear feet.

b. Windows, doors, or similar fenestration, i.e. faux windows which shall be distributed both horizontally and vertically and comprise at least 30% of the façades.

c. At least one main entrance that projects or is recessed from the main building plane and is differentiated from the remainder of the building façade by a change in building material.

d. The main entrance of the building shall incorporate plantings a minimum of 50% of the length of the façade that must include a mix of evergreens, deciduous shrubs, grasses, or ferns. These plantings are in addition to any required buffers or landscaping requirements.

e. All loading and unloading areas, including overhead doors, shall be oriented towards the side or rear property lines away from public roadways. Loading docks are not permitted in the front or street side yards and shall not be oriented towards the front property line.

f. Varied materials, colors, and textures, particularly earthtones, are encouraged to create a high-quality and non-obtrusive design.

(8) All buildings must be constructed to minimize glare or reflection on adjacent properties and roadways and should use appropriate textured glass, anti-reflective coating, and screening. Data Center equipment may be ground mounted or roof top mounted.

(9) All ground mounted equipment, including generators, fuel storage tanks, and utility substations, are prohibited from the front yard. Ground mounted equipment shall be located on a side farthest from any type of residential zone use and are not permitted adjacent to any property with a Zoning District permitting residential use, an existing residential development, or residentially used property.

D. Emergency Contact Information.

Each Data Center shall provide 24-hour emergency contact signage visible at each access entrance. Signs shall include the company name (if applicable), the owner, operator, and/or representative's name, the telephone number, and the corresponding local power company's name and telephone number.

E. Lighting

(1) For the lighting of horizontal surfaces, such as, but not limited to, parking areas, roadways, vehicular and pedestrian passage areas, loading docks, building entrances, sidewalks, bicycle paths, and site entrances, luminaires shall be aimed down, and shall meet Illuminating Engineering Society of North America (IESNA) full cut-off/fully shielded criteria.

(2) For the lighting of non-horizontal surfaces, such as, but not limited to, facades, landscaping, and signs, luminaires shall be shielded and shall be installed and aimed to not project their output into the windows of neighboring residences, adjacent uses, past the object being illuminated, skyward, or onto a public roadway.

(3) The illumination measured line-of-sight and from any point on any external perimeter property line shall at no time exceed 0.1 footcandle.

(4) Vegetation screens shall not be employed to serve as the primary means for controlling glare. Rather, glare control shall be achieved primarily using such means as cutoff luminaires, shields and baffles, and appropriate application of luminaire mounting height, wattage, aiming angle, and luminaire placement.

(5) Luminaires shall not be mounted more than 20 feet above the finished grade of the surface being illuminated. No pole-mounted lighting on the roof shall be permitted.

(6) Lighting for parking areas and vehicular traffic ways shall be automatically extinguished nightly within ½ hour of the close of the facility. When after-hours site safety/security lighting is proposed, such lighting shall not exceed 25% of the number of fixtures required or permitted for illumination during regular business hours. Where there is reduced but continued onsite activity throughout the night that requires site-wide even illumination, the use of dimming circuitry to lower illumination levels by at least 50% after 11 PM or after regular business hours, whichever is earlier, or the use of motion sensor control, shall be permitted.

F. Buffering/Screening/Landscaping

(1) The setback area required under Section 5 A. of this Ordinance shall serve as a buffer zone between the Data Center and the outer property boundary.

(2) No Data Center structures or facilities may be constructed within the setback areas, provided that within the first hundred feet of the setback area measured from the outer perimeter of the Data Center at the beginning of the setback area, parking areas may be constructed and interior surface roads may be located.

(3) Any parking or roads constructed within the setback areas shall be bermed and vegetated to shield off-site areas from glare and other visual impacts associated with the interior vehicular travel and parking. Any landscape buffer shall include an earthen berm with a minimum height of four (4) feet and a grade no steeper than 2:1.

(4) Except as provided in subsections (2) and (3), no impervious surface is permitted within any landscape buffer except for access roads and sidewalks.

(5) All Data Center accessory structures and buildings and Data Center Energy Systems shall be fully screened on all sides from all existing and planned public roads as well as adjoining properties, utilizing a mixture of screening materials, berms, and landscaping. Screening can be accomplished using any combination of existing vegetation, a newly planted vegetative screen, fence, screen wall, panel, parapet wall, or other opaque screen. Screening is not required where the principal building itself serves to effectively screen an accessory structure or building or energy system from adjacent roads and properties. A species of trees or shrubs shall be used that ensures visibility through the screening is blocked by at least eighty (80) percent throughout the entire year. The effective screening height of the trees or shrubs shall be at least four (4) feet in height at the time of planting. The landscape buffer shall be a minimum of twenty-five (25) feet in width and may be part of the minimum setback area.

(6) Plantings should be provided in the setback area, as screening, at the main entrance of any Data Center primary building, in parking lots, and along the façade of the proposed Data Center.

(7) The owner and operator of any Data Center shall have an affirmative and continuing duty to ensure that all buffering/screening standards and requirements are maintained on an ongoing basis.

G. Perimeter Security Fencing

Fencing may be considered for security purposes but is not needed for land use compatibility if appropriate and effective screening, buffering, and landscaping are provided.

(1) Fences shall not exceed ten (10) feet in height above ground.

(2) Chain-link, slatted-insert, and barbed or razor wire fencing is not allowed along public streets or external perimeter property lines.

(3) Permitted fence materials include aluminum and iron.

(4) Video and/or audio surveillance shall be restricted to within external perimeter property lines and public right-of-way adjacent to or abutting the Data Center property.

H. Noise

(1) All Data Centers shall meet the following minimum standards:

(2) Noise from operations, including primary and accessory structures and uses and energy systems, shall not exceed 40 dBA or 60 dBC[6] between 10:00 p.m. and 7:00 a.m., and shall not exceed 45 dBA or 65 dBC at any other times at any external perimeter property line.[7]

a. In addition to the decibel limits in paragraph 1, operations shall not generate vibration, oscillation, or infrasound that causes perceptible resonance within any buildings or adverse impacts on the human body, including but not limited to dizziness, headaches, nausea, sleep disturbance, or other recognized health effects. Compliance shall be determined based on standards issued by ANSI and ISO for human exposure to whole-body and low-frequency vibration (e.g., ISO 2631 and ANSI S2.71) and shall be measured and compliance determined at any external perimeter property line.

(3) The locations of the noise measuring equipment for the pre-construction noise analysis shall be shown on the submitted site plan. The points of measurement shall be at all external perimeter property lines at locations most susceptible to noise from applicable proposed equipment.

(4) The maximum sound levels identified herein do not apply to emergency alerts; emergency work to provide electricity, water, or other public utilities when public health or safety is involved; snow removal; or road repair. Maximum sound levels do apply to testing or routine operation of emergency equipment for backup or primary power generation and to other situations that do not involve public health or safety.

(5) A Noise Assessment, Monitoring, and Mitigation plan shall accompany any conditional use permit application and shall include:

a. Assessment of baseline ambient levels of noise before construction, measured in all directions at the external perimeter property lines on which the Data

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[6] The County recognizes that dBA measurements underrepresent low-frequency noise, which can travel long distances, penetrate walls and windows, and cause chronic disturbance even at low levels. Therefore, dBC measurements shall also be used in evaluating noise and site suitability, especially in cases involving mechanical equipment, industrial activity, or other sources known to emit low-frequency sound.

[7] These thresholds are intended to protect against both high-frequency and low-frequency tonal noise at the point of compliance, which is any external perimeter property line. To the extent that occupational safety or health standards impose a more stringent obligation on the Data Center property, the more stringent standard shall prevail.

Center is proposed to be located and any related activity is proposed to be conducted;

b. Assessment of all noise projected to be associated with the proposed Data Center (including all structures, facilities, and energy systems) before and after incorporation of noise minimization and abatement measures to control and minimize all exterior noise (including high, mid- and low-frequency) generated by the Data Center, including but not limited to exhaust vents, cooling equipment, chiller fans, and on-site power generation.

c. An Acoustical Study prepared by a qualified noise consultant showing:

   i. Expected daytime and nighttime sound levels, including generator noise and other equipment noise, indoors and outdoors at multiple distances and at the external perimeter property lines,

   ii. Include both A-weighted (dBA) and C-weighted (dBC) measurements, with full frequency spectra to identify low-frequency and tonal components,

   iii. Provide sound level projections and modeling for multiple distances from the facility, with measurements taken both outdoors and indoors of nearby dwellings,

   iv. Conduct testing during nighttime and early morning hours, when cooler air and atmospheric conditions may increase sound propagation, and

   v. Recommend specific mitigation measures (e.g., barriers, enclosures, mufflers, alternative cooling technologies) to ensure compliance with the noise standards of this Ordinance.

d. A vibration study shall also be submitted if any mechanical equipment or cooling infrastructure is installed within 2,000 feet of a Sensitive Use.

e. Design of Noise Monitoring, Minimization, and Mitigation Plan including real-time continuous monitoring and analysis of noise data sufficient to demonstrate compliance with the applicable standards over time and to identify patterns, trends, and potential areas of improvement; and use of frequency analysis to identify and address low-frequency tones associated with cooling fans or other equipment.

f. Incorporation of measures sufficient to avoid off-site nuisance conditions from all frequencies of noise, at all hours of the day and night, and conform to the required limits at the property lines of the Data Center. Measures may include, but not be limited to, acoustic barriers or shrouds, higher efficiency/lower speed fans, or other noise reduction devices sufficient to assure that the noise levels measured at the perimeter property boundary for the Data Center conform to the required levels and to prevent nuisance conditions.

g. All required noise analyses shall be designed and conducted by a certified/ licensed acoustical engineer. The points of measurement shall be on each external perimeter property line at locations selected as those most

susceptible to noise from applicable proposed equipment. Any noise analysis shall include the date, time, and duration of measurements taken and shall be taken at various times of the day and night.

h. The County shall require the applicant to conduct post-construction during-operation compliance testing within six months of commencement of operation, using the same methodology, to verify actual sound levels and the effectiveness of mitigation measures. Where any noise analysis post-construction and during operation identifies greater than maximum permissible sound levels at any perimeter property boundary, the applicant shall be required to develop and submit for review and approval such measures, including relocation of equipment, reorientation, and other mitigation measures, as are needed to bring the modeled noise level to below acceptable limits.

i. The County may, at any time thereafter, conduct such compliance testing, and where any noise analysis identifies greater than maximum permissible sound levels at any perimeter property boundary, may after reasonable notice and an opportunity to cure the conditions contributing to the exceedance, suspend or revoke the conditional use permit.

I. Utility And Infrastructure

An application for a conditional use permit shall contain a Utility and Infrastructure Plan, which shall include:

(1) A Site Plan showing all structures and facilities to be used or constructed to support the Data Center operations, including all water, wastewater, electric, natural gas, and other infrastructure, and public utility service facilities.

(2) Identification and description of any existing or proposed transmission lines and other facilities that would be required in order to connect the proposed facilities to the grid, and any permits or other approvals needed to support such construction.

(3) Identification of any existing or proposed pipelines or gas transmission lines and other facilities that would be required in order to deliver natural gas or other gas or liquids to the facilities for use in heating or power generation.

(4) A description of any power sources proposed to be constructed or sited and operated, including emissions profile, noise, copies of applications for any required state or federal air permits. Any energy generation system designed or used to supply power directly to a Data Center during normal operations, including solar, wind, fossil fuel, or other energy generating systems, shall not be considered part of the Data Center use. Such systems shall be considered a

separate use and shall be approved only in accordance with any zoning regulations that allow and are applicable to such use.

(5) Information concerning any proposed grid interconnection.

(6) Documentation, including written verification from the applicable service providers, demonstrating that:

a. Public utility capacity and related electrical infrastructure sufficient in size and capacity is or will be made available to ensure that the power requirements of the proposed project can safely be accommodated without adverse effect on the availability, reliability, quality, cost, or safety of the electric service to other customers;

b. Any system designed for cooling and operation of the facility (whether by electricity, water, or other means) will meet all applicable standards of this ordinance as well as state and federal law;

c. Water, stormwater, and wastewater management and treatment capacity sufficient in size and capacity is or will be made available to ensure that the requirements of the proposed project can be safely accommodated without adverse effects on the availability, reliability, quality, cost, or safety of the water, wastewater, and stormwater management and treatment services to other customers; and

d. Any enhancements or improvements required in order for such utility services to continue to be available without adverse effect or additional cost to existing customers will be in place before operation of the proposed project.

(7) A description of the processes that will be used for management of all water, wastewater including equipment cooling, humidity maintenance, process, and sanitary wastewater, and stormwater run-on and run-off, in accordance with all local state, and federal requirements.

(8) Demonstration that for any proposed battery storage or storage of any other device or group of devices capable of storing energy for supply at a later time, whether the energy is stored for use on-site or off-site, compliance with National Fire Protection Association (NFPA) Standard 855, Installation of Stationary Energy Storage Systems, or similar standards, and include fire suppression systems designed specifically for battery storage.

J. Generator and Testing Requirements

(1) Backup power generation using diesel fuel, natural gas, or Battery Energy Storage Systems are allowed for use at a Data Center. Gas or battery storage is preferred over diesel due to emissions concerns.

(2) Backup diesel generators shall be a minimum of Tier IV (or the highest Environmental Protection Association industry standard available at the time of application) which meet all applicable local, state, and federal emission and performance standards to minimize adverse effects from the generator emissions.

(3) Except for generator testing or commissioning activities, generator use shall be limited to backup and emergency use only when the primary source of electricity is interrupted or unavailable. Continuous generator use outside of power outages or interruptions is prohibited.

(4) Generators shall be tested no more than once per week per unit, and only during the hours of 12 P.M. to 5 P.M. Monday through Friday.

(5) If diesel fuel is used for a back-up generator, the application shall include information demonstrating that the fuel will be delivered during non-peak daytime hours, that storage of the fuel will conform to all applicable fire and safety standards, and that the storage vessel is equipped with secondary containment to contain any release.

K. Cooling Requirements

(1) All liquid cooled equipment must be designed to utilize a closed-loop system.

(2) Water used for liquid cooling systems must come from a public or semi-public water system and not from any type of private well system.

(3) Water discharge from liquid cooling systems shall only occur after treatment (if required) and only to in accordance with all applicable local, state, and federal water pretreatment, discharge permit requirements and in conformity with state water quality standards.

L. Water Management

An application for a conditional use permit for a Data Center shall include a Water and Wastewater Management Plan, which shall include:

(1) Projected daily and peak water demand;

(2) The source(s) of the water supply, including certification from any public or semi-public water supplier that it will supply the daily and peak water need and that the demand can be met without adverse effect on the availability, quality of service, potability of the water, or other qualitative or quantitative impacts on existing customers;

(3) Certification that the Data Center site is not located within a wellhead protection planning area;

(4) Provide documentation that the Data Center design and equipment has incorporated best available technology and best practices to minimize water waste, maximize efficiency of water use, and to reclaim and recycle water to the extent possible;

(5) Provide documentation that any improvements to the water or wastewater utility infrastructure needed to serve the proposed Data Center will be paid by the applicant;

(6) Avoid cooling system discharge into the wastewater system and, if needed, minimize discharge and provide pretreatment as required; and

(7) Documentation of efforts to incorporate cooling systems that do not discharge to the wastewater or stormwater systems, or which use non-chemical and non-water-based cooling.

M. Waste Heat

(1) No person, firm, or corporation shall cause, permit, allow, or maintain any artificial or mechanical source of heat, radiant energy, or exhaust that creates a condition of thermal discomfort, hazard, or damage to persons, animals, vegetation, or property beyond the external perimeter property lines of the Data Center.

(2) Thermal discharge, venting, or exhaust from any equipment, machinery, or operation shall not raise the ambient temperature at any external perimeter property line above naturally occurring conditions when measured at a height of 4 feet above ground level.

(3) Outdoor equipment and energy systems must be equipped with shielding, insulation, or dispersion devices to minimize radiant heat impacts.

(4) Exhaust from heating, ventilation, air conditioning, or industrial equipment shall be directed and diffused in such a manner as to prevent concentrated heat exposure to anywhere outside of Data Center, neighboring properties, or public rights-of-way.

(5) Rooftop or wall-mounted heat exhaust systems shall be equipped with baffles, louvers, or dispersal devices to prevent heat plumes from causing discomfort or damage to adjacent buildings or damage to vegetation.

N. Low Impact And Energy Efficiency Considerations

Data Centers are encouraged to implement low-impact development practices in site design and energy efficiency, such as, but not limited to, the following:

(1) Site Design. Select sites to:

a. Minimize land disturbance,

b. Maximize tree preservation,

c. Minimize impervious surfaces, and

d. Minimize potential nuisance impacts (noise, glare, vibration, etc.) on adjacent properties, public roadways, and the vicinity.

(2) Energy/Resource Efficiency.

a. Orient buildings to take advantage of passive cooling and daylight opportunities

b. Utilize alternative energy sources (solar, wind, hydro, etc.) as much as possible

c. Provide an energy storage system to monitor and regulate usage of alternative energy for usage during off-peak hours

d. Utilize reclaimed water for cooling, if available

e. Encourage systems that limit the use of finite natural resources and their disposal

f. Incorporate water-efficient landscape materials

g. Utilize LED exterior/interior lighting

h. Implement energy management best practices and carbon reduction techniques such as, but not limited to, those promoted through the U.S. Department of Energy's Better Buildings initiative and U.S. Green Building Council's LEED Certification system.

O. Avoidance Of Nuisance Conditions

Any use or activity producing emissions, fugitive dust, smoke, glare, exhaust, heat, or humidity in any form shall be designed, located, and carried on in such a manner that it is not perceptible at or beyond the external perimeter property line and does not exceed any standards established by this ordinance or local, state, or federal law or regulation.

Section 6. Conditional Use Permit Application Requirements

The application for a conditional use permit for a Data Center shall include:

(1) A proposed site development plan identifying:

a. The zoning classification for all lands within 1 mile of the external perimeter property lines of the proposed Data Center site;

b. The legal boundaries of each separate parcel comprising the proposed site;

c. Proposed access route(s) and access control to the site;

d. The location of proposed improvements including but not limited to the Data Center Principal Structure, Data Center Accessory Use(s)/Structure(s), Data Center Energy Systems, parking, lighting, screening/buffering, perimeter fencing, and all ground-mounted equipment and utility infrastructure;

e. The location and use of internal roads, and any tram or railways;

f. Existing or proposed utilities providing electric, gas, water, and wastewater service the facility;

g. Evidence of compliance with all applicable setback requirements;

h. Location of the 100-year floodplain, wetlands, public rights-of-way, and cultural and historic resources on the proposed Data Center site and within 500 feet of the external perimeter property lines.

(2) An evaluation of the compatibility of the facility with scenic surroundings;

(3) An appraisal of the potential changes in property values and land use for property owners within one (1) mile of the facility resulting from the location, construction, and operation of the proposed facility;

(4) A traffic study assessing the impact of the facility construction and operation on road and rail traffic to and within the facility;

(5) Description of potential for fire or explosion, and certification from local fire department and emergency response agencies of the capacity to address and response to any emergency situation regarding the Data Center and associated energy systems, including fuel delivery and storage;

(6) A Utility and Infrastructure Plan meeting the requirements of Section 5 I;

(7) List all other permits and authorizations needed for construction and operation of the Data Center and include copies or links to the applications;

(8) A Noise Assessment, Monitoring, and Mitigation Plan meeting the requirements of Section 5 H;

(9) Waste Management Plan which shall identify all categories of solid waste, electronic waste, hazardous materials, and other refuse generated by the facility,

including packaging, cooling system by-products, and equipment replacement materials, and shall identify the manner in which the wastes will be stored, collected, processed, recycled, and disposed;

(10) An assessment of all anticipated emissions from the construction and operation of the facility, including transportation;

(11) An assessment of all water usage and wastewater generation and characterization, and plans for management of wastewater and stormwater; and

(12) A decommissioning plan, prepared by a registered professional engineer, containing the following:

a. The estimated decommissioning timeframe and cost of removal of all structures, foundations, conduit, equipment, and interconnection facilities, and roads;

b. The salvage value of any equipment in current dollars and the calculations supporting the decommissioning estimate. The estimated salvage value of the material using current, publicly available material indices and/or firm quotes from a decommissioning or recycling company experienced in the decommissioning of data centers shall be provided.

c. The manner in which the Data Center will be decommissioned, including provision and a timetable for the removal of all structures, foundations, conduit, equipment, and interconnection facilities and for the revegetation and restoration of the property to its original condition or preparation of the site in a condition compatible with the prior zoning of the parcel(s); and

d. A performance bond, letter of credit, or other financial assurance payable to the Commission, sufficient to assure that decommissioning of the site can be achieved by a third party in the event that the applicant defaults in that obligation, which financial assurance shall be provided prior to commencement of construction.

Section 7. Process and Standards for Approval of Conditional Use Permit

(1) The Commission shall have the authority to hire a consultant to review the Conditional Use Permit Application and all Plans and to provide recommendations concerning the compliance of the proposed facility with the applicable standards and requirements associated with the siting, construction, operation, and decommissioning of the Data Center and all accessory structures and facilities. Any expenses incurred by the Commission's hiring of a consultant shall be borne by the applicant. The expenses incurred may be charged against an escrow deposit charged to the applicant at the time of filing of the application.

(2) A conditional use permit shall be issued by the Commission only where the applicant demonstrates and the Commission affirmatively finds, based on the evidence in the record taken as a whole, and after public notice and opportunity to be heard concerning the application, that all applicable requirements of this Ordinance have been or will be met regarding the location, construction, operation, and decommissioning of the Data Center and that issuance of the conditional use permit is consistent with the public health, safety, and welfare.

(3) The Commission may impose any conditions deemed necessary or appropriate in order to allow the proper integration of the proposed Data Center into the zone and location in which it is proposed, and deemed necessary or appropriate to protect public health, safety, and welfare. Such additional conditions may include but are not limited to further limitations on noise, hours of operation, additional visual screening and buffering, traffic mitigation, setbacks, and infrastructure upgrades.

(4) The Commission may, in considering an application for a Conditional Use Permit, consider the extent to which low-impact development and energy efficiency considerations have been addressed and incorporated into the proposed Data Center.