EAST WHITELAND TOWNSHIP CHESTER COUNTY, PENNSYLVANIA

ORDINANCE No. XX

AN ORDINANCE OF EAST WHITELAND TOWNSHIP, AMENDING EAST WHITELAND TOWNSHIP ZONING ORDINANCE TO PROVIDE REGULATIONS OF DATA CENTER AND RELATED USES

WHEREAS, the Board of Supervisors finds that Data Centers are high-impact industrial facilities that, when improperly sited or when unregulated, may impose significant burdens on public health, safety, and welfare, including noise, vibration, thermal, visual, utility, environmental, and infrastructure;

WHEREAS, the Township is home to multiple regionally significant water resources where the consumptive water use associated with data center cooling systems has the potential to adversely affect groundwater quantity, stream baseflow, and wetland hydrology, particularly during drought conditions, thereby threatening the water supply of the Township and downstream communities;

WHEREAS, East Whiteland Township maintains a character that supports residents' health, sleep, and quality of life; and that the Township's noise disturbance standards establish protective limits which reflect the generally low ambient noise environment of the Township; and that continuous industrial noise from large-scale mechanical equipment, cooling systems, generators, or other operations¬ particularly low-frequency noise, pure tones, and vibrations is documented in scientific and health studies to cause sleep disruption, stress, annoyance, and other adverse effects on nearby residential populations even when it remains near or only modestly exceeds established limits;

WHEREAS, Data Centers are rapidly evolving facilities, whose electrical demand - potentially reaching tens or hundreds of megawatts - poses risks to the reliability, stability, accessibility, and availability of the electrical grid serving the Township and critical public safety infrastructure, including fire infrastructure, emergency communications, and healthcare facilities, and that public safety must be afforded priority over high-density commercial energy users during periods of grid stress or emergency;

WHEREAS, Data Centers present unique public safety hazards -including high voltage electrical systems, Lithium-Ion Battery Energy Storage Systems (BESS) susceptible to thermal runaway events, large quantities of chemical fire-suppression agents, bulk diesel fuel storage, and the potential for significant toxic releases during fire or equipment failure ¬ that impose specialized emergency response burdens on emergency responders serving the Township and neighboring municipalities. These specialized impacts, costs, and risks are not fully offset by the ordinary property tax revenue and other municipal contributions received by the fire company, necessitating reasonable financial contributions from Data Center applicants to fund specialized equipment, training, and emergency preparedness measures;

WHEREAS, the scale of impervious coverage, site disturbance, and heat island effects associated with large-scale Data Center development creates significant and measurable adverse effects on the Township's character, stormwater hydrology, and historic landscape, and that the permanent preservation of open space is a reasonable and necessary condition to mitigate such effects and to further the Township's Comprehensive Plan goals;

WHEREAS, the Township recognizes that Data Centers may be appropriate within certain designated areas of the Township when properly sited, designed, and operated in compliance with objective performance standards, and that it is the intent of the Township not to prohibit Data Centers outright but to permit them only upon full

demonstration, through site-specific evidence, that they will produce no adverse effects on the Township's protected public interests;

WHEREAS, the Township further finds that it is necessary and appropriate to establish objective, performance-based standards, including dimensional requirements, setbacks, noise and vibration limits, water use restrictions, riparian buffer standards, emergency response obligations, decommissioning security, and ongoing compliance mechanisms - to ensure that any Data Center permitted in the Township is compatible with surrounding uses, protects sensitive receptors, preserves historic and environmental resources, and does not impose uncompensated costs upon Township residents or public infrastructure;

WHEREAS, the Township further finds that the financial security, escrow, and mitigation fund requirements of this Ordinance are reasonably related and roughly proportional to the site-specific and cumulative impacts of Data Center development on public safety, infrastructure, environmental quality, and community character;

WHEREAS, the Township finds that the adoption of this Ordinance is in the best interests of the public health, safety, and welfare of the residents and property owners of the Township;

NOW, THEREFORE, be it **ORDAINED** by the Board of Supervisors of East Whiteland Township, Chester County, Pennsylvania, in lawful exercise of its authority under the Pennsylvania Municipalities Planning Code and the Township's police powers, as follows:

SECTION I. The East Whiteland Township Zoning Ordinance, Chapter 200, Section 200-41, Table of Permitted Uses (Attachment 8) is hereby amended to include “Data Center subject to Section 200-43.1” as a Use permitted by Conditional Use.

SECTION II. The East Whiteland Township Zoning Ordinance, Chapter 200 is amended to include a new Section, Section 200-43.1 Data Center Uses, as follows:

Section 200-43.1 Data Center Uses

SECTION 1. Purpose and Intent.

- **A.** The purpose of this Article is to regulate Data Centers in order to protect the public health, safety, and welfare; preserve the Township's character; prevent adverse noise, vibration, visual, utility, environmental, natural resources, and infrastructure impacts; and ensure that such facilities are sited, designed, operated, and decommissioned in a manner compatible with surrounding uses.
- **B.** This Article is intended to allow Data Centers only in the Industrial Zoning District and only under strict, objective, performance-based conditions consistent with the Pennsylvania Municipalities Planning Code, while preventing undue burdens on Township residents, utilities, natural resources, and historic resources. These standards are designed to permit appropriately scaled and designed Data Centers that are compatible with the Township, and not to prohibit the use outright.
- **C.** Feasibility and Non-Exclusionary Statement.
  - **1.** The Board of Supervisors finds that Data Centers are a high-impact industrial use that can impose significant burdens on public health, safety, welfare, historic resources, watershed integrity, grid reliability and character when not appropriately regulated.
  - **2.** These standards are designed to permit Data Centers only in the Industrial Zoning District and only where the Applicant demonstrates, through objective, site-specific evidence verified by qualified professional consultants, that the facility will produce no adverse effects on the protected interests identified in this Article.

3. Nothing in this Article shall be construed to prohibit Data Centers Township-wide; approval shall be contingent upon full compliance with the objective and performance-based standards of this Ordinance, which are adopted to safeguard public health, safety, welfare, and the Township's historic and environmental resources.

D. Protection of Historic Resources. Any proposed Data Center must demonstrate through the Environmental, Community, and Economic Impact Analysis (ECEIA) that it will not result in an adverse effect upon the historic integrity of setting, including visual, auditory, or thermal intrusions (e.g., heat-shimmer, steam plumes, mechanical hum) of any Township historic resources, as set forth in Section 200-58.

E. Other Ordinance Provisions Preserved. Nothing herein shall be construed to lessen, waive or abrogate an Applicant's compliance with any other provisions of the Township Zoning Ordinance, particularly those set forth in Article X (environmental protection). To the extent of any conflict between the provisions of this Section and those elsewhere in the Zoning Ordinance, the more restrictive shall apply.

F. Technological Evolution and Best Practices.

1. Data Centers are a rapidly evolving land use characterized by continual changes in the following, but not limited to: computing hardware, power consumption, generation, and storage, cooling systems, energy efficiency measures, noise and vibration mitigation, and operational design. The standards of this Article are intended to be applied considering current, and demonstrably effective technologies and best practices available at the time of facility design, construction, and major equipment replacement, to ensure ongoing compatibility with surrounding uses and protection of the Township's public health, safety, and welfare.
2. The Board may approve equivalent or superior technologies upon demonstration through Substantial Evidence that the alternative meets or exceeds the performance standards of this Article.
3. All replacement of equipment or infrastructure shall be subject to Township review and approval to ensure that the new equipment meets or exceeds the specific performance standards including but not limited to noise, vibration, water use, and thermal emissions established at the time of the original Conditional Use approval.

SECTION 2. Definitions.

The following definitions are incorporated into this subsection:

Adverse Effect: An objective, quantifiable impact on public health, safety, welfare, historic resources, watershed integrity, environmental quality, natural resources, sensitive receptors, measured using industry-accepted methodologies. Adverse Effects are determined through empirical data, modeling, or expert analysis as specified in this Article, and include but are not limited to:

1. Noise
2. Thermal
3. Water
4. Historic
5. Vibration
6. Grid
7. Other: Any other measurable environmental, infrastructure, or community impact documented in the Environmental, Community, and Economic Impact Analysis (ECEIA).

Data Center: A facility for housing computer systems and related equipment used for the storage and processing of large amounts of data.

Data Center Campus: A data center campus includes all of the structures and real estate owned, controlled,

leased or otherwise occupied primarily for the use and purpose as Data Center(s), including: (i) Data Center(s); (ii) Data Center Accessory Uses; and (iii) all other systems, equipment, piping, conduit and other ancillary equipment, structures, and other appurtenances that are incidental to and/or needed for the construction, support, operation, repair, maintenance, and/or protection of the Data Center(s) and/or the data center campus.

Accessory Use (Data Center as an Accessory Use): A Data Center shall not be considered an Accessory Use to another principal use if it occupies more than 15% of Gross Floor Area or requires electrical infrastructure exceeding 1 MW.

Accessory Use (Accessory use to a Data Center): A use secondary and incidental to a Data Center, located on the same Tract or assemblage of parcels developed as a unified development, which may be functionally required for its operation. The inclusion of these items as "Accessory Uses" does not waive the mandatory requirement for Closed-Loop technology or the prohibitions on evaporative cooling towers as set forth in Section 8. This includes, but is not limited to:

1. Administrative & Security: Logistical, fiber optic, storage, and security Buildings or fencing.
2. Electrical Infrastructure: Switchgear, transformers, electrical substations, utility lines, battery energy storage systems (BESS), and uninterruptible power supplies (UPS).
3. Backup Power: Generators used to provide temporary power only when the main source of power is interrupted. This use shall not include any on-site, primary energy generation facility as an Accessory Use; such facilities are considered a separate industrial use.
4. Environmental & Water Controls: Air handling units (AHUs), heat exchangers, pump stations, water holding facilities for fire suppression, and on-site wastewater pre-treatment facilities.

Hyperscale Data Centers: Facilities exceeding 100,000 square feet of Gross Floor Area or 50 megawatts (MW) of power capacity. Edge Data Centers: Smaller, decentralized facilities used for low-latency processing. Environmental, Community, and Economic Impact Analysis (ECEIA): an evaluation to study the reasonably foreseeable direct, indirect, and cumulative impacts of the proposed facility on surrounding properties, public infrastructure, environmental resources, historic resources, municipal services, and community economic conditions.

Colocation Facilities: Facilities where multiple tenants lease space for their own hardware.

High-Density Digital Processing (HDDP): Facilities using specialized hardware for cryptocurrency mining, blockchain transaction processing, artificial intelligence (AI) model training, or similar intensive digital computation.

High-Intensity Data Center: Any facility with a power density exceeding 200 watts per square foot of the gross floor area, regardless of total building size. Such facilities shall be subject to all environmental and noise standards of this Article.

Gross Floor Area: For the purpose of this article, for the specific purpose of calculating impact fees, as well as electrical and water usage caps under this Article, Gross Floor Area shall include the sum of all floor levels, including mezzanines, equipment platforms, and internal utility vaults.

Imminent Threat: A condition that, if not immediately remedied, presents a substantial probability of death, serious physical harm, or significant environmental contamination, based on objective evidence.

Sensitive Receptor: Any land use which is particularly sensitive to noise, vibration, electrical, or thermal emissions, including residential dwellings or residential zoning districts; educational facilities (including pre-

kindergarten through university); licensed daycare or elder care facilities; hospitals; places of worship; and public parks.

Substantial Evidence: Objective, credible information sufficient for a reasonable person to form a conclusion, including but not limited to peer-reviewed studies, engineering analyses, expert reports, empirical data, modeling results, and third-party verification, as required by the Pennsylvania Municipalities Planning Code and applicable case law. Examples of acceptable documentation include:

1. Utility interconnection studies or "Will Serve" letters
2. Acoustic modeling reports per (American National Standards Institute) ANSI S12.9
3. Hydrologic modeling per (United States Geological Survey) USGS or (Delaware River Basin Commission) DRBC guidelines
4. Visual simulations
5. Third-party verification of compliance with performance standards

Pure Tone: A sound characterized by a single pitch where any one-third octave band sound pressure level exceeds the arithmetic average of the two contiguous bands by 3 decibels (dB), measured at the Property Line of any Sensitive Receptor located within 2,500 feet of any proposed data center. The presence of a Pure Tone shall be determined using one-third octave band analysis in accordance with ANSI S12.9 - Part 4.

SECTION 3. Authorization and Applicability.

- **A.** Data Centers shall be permitted only as a Conditional Use in the Industrial Zoning District on properties complying with the provisions of this Chapter. Inclusive of the requirements of this Article, an Applicant must demonstrate compliance with all federal, state, or county regulations associated with the use. Where a conflict arises, the more restrictive regulations shall apply.
- **B.** All Data Center Conditional Use applications must provide notice of the public hearing to all property owners with 2,500 feet of the subject property. Notices must be sent by regular first-class mail by the applicant to the address of record as is on file at the Chester County Assessor's office at least 1 week prior to the public hearing. Section 200-116.
- **C.** Facilities primarily devoted to High-Density Digital Processing (HDDP) as defined herein shall be subject to the same standards as a Data Center.
- **D.** Aggregation and Anti-Circumvention. For purposes of this Article, all Buildings, structures, equipment, and phases located on a single parcel or on contiguous parcels under common ownership or operational control shall be deemed a single Data Center. All standards shall apply to the aggregate facility regardless of the timing of development. Aggregation applies regardless of whether parcels are under common ownership at the time of application or later consolidated via transfer, lease, or operational control.
- **E.** Material Modifications. Any modification to the facility that increases the intensity of the use or alters external impacts shall require an amendment to the Conditional Use approval. A modification shall be deemed "material" and require a new public hearing if it results in any of the following:
  1. Any increase in approved noise emissions (dBAor dBC) at the Property Line.
  2. An increase in peak electrical demand exceeding 10% of the originally approved load.
  3. Any increase in daily water consumption or discharge.
  4. The addition of new outdoor mechanical equipment, rooftop appurtenances, or an increase in Building height/footprint.

  Modifications that reduce external impacts (e.g., replacing equipment with quieter models, reducing water consumption) shall require only zoning permit verification of continued compliance, not amendment of the Conditional Use.
- **F.** Routine Maintenance and Efficiency Upgrades. Routine maintenance, "in-kind" equipment replacement (defined as replacement with hardware of equal or lesser acoustic and thermal output), or internal

software/logic upgrades that do not increase external impacts (including but not limited to noise, water usage, power consumption, etc.) shall not constitute a material modification. Such activities shall require permitting to verify that the replacement equipment meets the current performance standards of this Article.

G. All Data Centers shall comply with the historic and environmental protection requirements in Section 1.D and the Historic Resource Impact Study I Environmental Impact Analysis required in the ECEIA.

H. The standards of this Article shall apply equally to new construction and the substantial improvement as determined by the Township or adaptive reuse of existing structures for Data Center purposes. Any change of use to a Data Center shall be treated as a new Conditional Use.

I. Any Conditional Use approval for a Data Center shall expire if a Preliminary Land Development submission has not been filed within 12 months of Conditional Use approval.

J. Small-Scale Data Center Provisions.

1. Applicability: This subsection applies to Data Centers not exceeding 5MW peak electrical demand on an aggregate basis (as calculated herein).

2. Reduced Administrative Burden: For qualifying small-scale Data Centers, the following simplified procedures apply:

a. Administrative Escrow: Initial deposit of $10,000;

b. Mitigation Fund: Initial deposit of $15,000/MW, with final determination not to exceed $30,000/MW;

c. Decommissioning Bond: May be calculated at 125% if the Applicant demonstrates lower environmental risk through limited battery storage and simplified electrical infrastructure; and

d. ECEIA Timeline: Township shall complete review within 60 days, with one 30-day extension.

3. Performance Standards: All performance standards in this Article (noise, water, setbacks, fire safety, etc.) apply equally to small-scale Data Centers. Reduced administrative costs do not waive substantive compliance requirements.

4. Expansion: Any expansion beyond 5MW aggregate capacity shall trigger full compliance with all administrative requirements and fees calculated on the expanded capacity.

K. Colocation Facilities.

1. Applicability: The provisions of this subsection apply to Colocation Facilities as defined in Section 2, where multiple unaffiliated tenants lease space within a single Data Center.

2. Operator Responsibility: The facility owner/operator shall be responsible for compliance with all performance standards of this Article (including but not limited to Noise, water use, thermal emissions, and electrical demand) regardless of tenant activities, lease arrangements, or equipment ownership. The presence of multiple tenants shall not relieve the Owner of liability for violations attributable to tenant operations.

3. Tenant Changes and Equipment Modifications:

a. Tenant turnover, equipment changes by existing tenants, or rack reconfigurations shall not constitute Material Modifications hereunder, provided that such changes do not result in increased external impacts (noise, water consumption, electrical demand, or thermal emissions) at or within the property line.

b. The Owner shall notify the Zoning Officer within 30 days of any tenant change that increases aggregate facility power consumption by more than 5% of approved capacity.

c. Any tenant equipment installation or modification that increases noise levels by more than 2 dBA at any Property Line, increases daily water consumption, or increases peak electrical demand beyond approved levels shall constitute a material modification requiring amendment of the Conditional Use approval for the same.

4. Monitoring and Verification:

a. The Owner shall maintain real-time monitoring systems tracking aggregate power

consumption, water use, and Noise levels to ensure tenant activities do not exceed approved performance caps.

b. Monitoring data shall be accessible to the Township Engineer via web portal or as otherwise approved during the Conditional Use process, as required hereunder.

c. The Owner shall implement lease provisions requiring tenants to comply with the facility's approved performance standards and authorize the Owner to curtail or disconnect non-compliant tenant equipment.

5. Annual Compliance Reporting:

a. The annual compliance certification required hereunder shall include tenant-by-tenant power consumption data, presented in aggregate form (individual tenant identities need not be disclosed, but data shall be sufficient to verify no single tenant exceeds approved allocations and all tenants combined remain within facility caps).

b. The Owner shall certify that all tenant equipment installations during the reporting period complied with approved noise, thermal, and water use standards.

6. Lease Disclosure: As a condition of approval, the Applicant shall provide a template tenant lease agreement demonstrating that tenants are contractually bound to comply with the performance standards of this Article and that the Owner retains authority to enforce compliance through equipment disconnection or lease termination.

SECTION 4. Dimensional Standards.

A. Minimum Lot Area.

1. Standard Requirement: The minimum Lot Area for any Data Center shall be 10 acres, except as provided in subsection (2) below.

2. Small-Scale I Edge Exception: A Data Center exceeding neither 5,000 square feet in Gross Floor Area nor 2MW in peak electrical demand may be permitted on a Lot with a minimum area of 5 acres, provided that the facility strictly complies with the Building Setbacks 1,250 ft as provided in Section 5.A) and all other performance standards of this Article.

B. Notwithstanding the exceptions generally permitted elsewhere, the maximum height for a Data Center shall be 35 feet.

1. This 35-foot limit shall be all-inclusive, encompassing the roofline, parapet walls, and all mechanical equipment, including but not limited to ventilating fans and air-conditioning equipment.

2. Lightning rods, flagpoles, and utility safety masts may extend to 40 feet, provided they cause no adverse effect on historic viewsheds as demonstrated in the ECEIA per Section 14.B.2(b).

3. The maximum height of Data Center Accessory Uses shall be no greater than the height of the principal building.

C. Maximum Building Coverage: 25%.

D. Maximum Impervious Coverage: 50%.

SECTION 5. Setbacks and Site Design.

A. Setbacks.

1. All principal Buildings, cooling equipment, electrical substations, generators, and Battery Energy Storage Systems (BESS) shall be set back a minimum of 1,250 feet from the nearest property line of any Sensitive Receptor. This 1,250-foot Setback is the default standard to ensure compliance with the performance standards of this Article (including but not limited to noise, vibration, thermal plume, and visual intrusion on historic resources). Setback requirements apply to Property Lines within the Township; however, impacts on out-of-Township Sensitive Receptors shall be assessed in the ECEIA and mitigated to avoid nuisance under Pennsylvania law.

2. If the ECEIA demonstrates that even the 1,250-foot Setback is insufficient to meet any performance standard of this Article, the Applicant shall be required to incorporate a Setback sufficient to meet the performance standards.
3. Setbacks from Publicly Owned Trails (e.g. Chester Valley Trail). Minimum Setback of 1,000 feet.
4. Setbacks from all property lines shall be determined as set forth in the Table of Development Standards for Industrial Zoning Districts, Section 200 (Attachment 9). This shall include minimum building setbacks from tract perimeter and minimum surface parking areas.
5. Water Resource Buffer. Data Centers shall comply with the enhanced Riparian Buffer standards in Section 9, with a minimum Setback of 200 feet from any stream, river, wetland, or water body, regardless of classification. For purposes of Data Centers, the Riparian Buffer width shall be the greater of:
    a. 200 feet, or
    b. the applicable buffer in Section 9.B based on stream classification.

B. Vegetative Cooling: The 200-foot Water Resource Buffer shall be maintained as a "No¬ Mow" zone with native canopy trees to provide natural thermal cooling of any potential stormwater runoff.

C. Substation Placement. Electrical substations and BESS facilities shall comply with Setback requirements in Section 5.A. Within the required setback area, such facilities shall be sited to minimize visibility from public Rights-of-Way and Sensitive Receptors by using the principal Data Center building as a visual and acoustic buffer where feasible, while maintaining compliance with all performance standards of this Article.

D. Undergrounding Requirement: All incoming utility lines, regional grid interconnections, sub-transmission lines, fiber optic networks, and internal distribution circuits supplying or connecting to a Data Center Use or its accessory infrastructure shall be installed entirely underground from the point of entry at the property boundary to the point of termination. Towering steel utility masts, overhead line arrays, or aerial distribution infrastructure are strictly prohibited

E. Off-Site Connectivity: The Applicant shall restore any Township Road disturbed by trenching, which may include full-lane or full-width milling and overlay if the Township Engineer determines the structural integrity of the pavement has been compromised. Any new electrical, fiber optic, or telecommunications lines shall be installed underground.

F. Data Center campuses containing more than one Building shall provide a variety in building size, massing, siting, and appearance by transitioning from smaller or lower buildings along Street frontages to larger and taller structures on the interior of the site. Consideration of topography shall be given to avoid placement of larger, taller, or more massive buildings in a prominent location on the property or along a public street.

G. The building footprint shall be sited to follow natural contours insofar as possible. Any "cut and fill" exceeding 10 vertical feet shall be presumed to be inconsistent with the Character of the Township, and the Applicant shall bear the burden of proving that no alternative siting or "stepped" Building design is feasible.

H. Parking: Parking for Data Centers shall be a minimum of 1 space per employee, plus an additional 20%.

I. Off Street Loading: A minimum of one loading bay is required. Loading bays shall be located on one facade of the Data Center Principal building. These bays shall be designed to cause no obstructions to adjacent street traffic whether during backing and parking or parking and unloading. Sufficient area shall be provided to allow for emergency access around loading areas. Accessory security fencing shall not impede emergency vehicle turning radius or "360-degree" access to the building as required by the Fire Marshal.

J. Visual Verification Standards. To ensure the preservation of the surrounding character, the following visual standards apply:
1. Mandatory Visual Simulation: The Applicant shall perform a physical "Balloon Test" or other Township-approved high-fidelity visual simulation to verify the visibility of the building bulk and all rooftop appurtenances, including but not limited to dry-cooler arrays, heat exchangers, and exhaust

stacks.

2. Leaf-Off Condition: All visual tests must be conducted during "leaf-off" conditions (typically November through March).
3. Points of Interest: Visibility shall be assessed from at least three prominent vantage points to be determined the Township.
4. Mitigation Required: If the test reveals that mechanical equipment is visible from the identified vantage points as determined by the Board during the Conditional Use process, the Board may require additional Setbacks, lowered Building heights, or enhanced screening as a condition of approval.

K. For the purposes of this Article, any electrical substation or Battery Energy Storage System (BESS) constructed or expanded solely to serve the Data Center shall be deemed a constituent part of (and principal structures associated with) the Data Center land development. The Applicant shall demonstrate that such infrastructure- regardless of ownership-complies with the Building Setbacks (1,250 ft baseline ft as provided in Section 5.A) and Noise performance standards of this Article to protect the health, safety, and welfare of Sensitive Receptors.

SECTION 6. Landscaping and lighting.

A. Earthen Berms. A continuous earthen Berm at least 8 feet in height with a maximum 3:1 slope shall be constructed along all Property Lines facing residential uses or public roads. Supplemental landscaping and the building setbacks shall comply with the uniform 1,250-foot Sensitive Receptor building and utility setbacks established in Section 5.A.

B. Landscaping. Berms shall be planted with a double-staggered row of native evergreen trees, a minimum of 8 feet in height at planting, spaced no more than 10 feet apart on center. This planting shall be maintained to provide a "Continuous Visual Buffer" that achieves 100% opacity within 3 years of planting.

C. Building Design.

1. Any Data Center and Data Center Accessory Use Building façade that faces a public road or existing residential use must incorporate at least two of the following design elements every 150 horizontal feet:
    - **a.** A change in building material, pattern, texture, or color;
    - **b.** A change in Building height; and
    - **c.** Building step-backs or recesses having a minimum depth of 5 feet.
2. Permitted Materials: Facades shall utilize high-quality natural materials historically consistent with the Chester Valley and Great Valley architectural vernacular, including natural stone, brick, or high-quality wood-look composites. The utilization of Exterior Insulation and Finish Systems (EIFS/synthetic stucco) or untextured, industrial metal panels is strictly prohibited on any wall surface visible from a public road or residential use

D. Lighting. All exterior lighting shall use full cut-off fixtures and shall not exceed 0.05 footcandles at any Property Line. Between the hours of 11:00 PM and 5:00 AM, all exterior perimeter lighting shall be reduced to 25% of maximum intensity or switched to motion-activation, except where required by the Building Code for safe egress. No high¬ intensity "security floods" are permitted to remain on continuously.

E. Integrated Lighting and Landscape Screening. All exterior lighting shall be designed in coordination with the landscaping plan required under Ordinance Section 200-10. To ensure the preservation of the Township's dark-sky character and the protection of Sensitive Receptors from light trespass:

1. Light-Blocking Canopy: The double-staggered row of native evergreen trees required in subsection B above shall be positioned and maintained to create a continuous, opaque visual screen that prevents "nighttime glow" and direct light¬ source visibility from any Sensitive Receptor.
2. Conflict Resolution: Where lighting requirements for safety/security conflict with the tree canopy growth, the Applicant shall use low-profile, bollard-style lighting or shielded fixtures that direct light downward and inward, ensuring that no light is emitted above the horizontal plane of the fixture.

F. Wildlife and Pollinator Protection.

1. All required landscaping, berms, buffers, riparian zones, and preserved open space (Section 5.N) shall use native, pollinator-friendly plantings consistent with the Pennsylvania BMP Manual (Appendix B) and PA Natural Heritage Program guidelines. No turf grass or invasive species shall be permitted; plantings must achieve at least 70% coverage of pollinator-host/forage species within 5 years.
2. Lighting shall comply with Section 6.D and additionally: maximum 2200K (warm amber) color temperature, full cut-off, motion-activated only after 10:00 PM (except safety¬ required), and designed to minimize disruption to nocturnal pollinators and migratory birds per International Dark-Sky Association guidelines.

SECTION 7. Noise, Vibration, and Nuisance.

The Applicant shall comply with the following provisions, and, through the Conditional Use hearing process, shall be required to submit a study and all other necessary information sufficient to establish compliance herewith.

1. Ambient noise levels to be determined by the submitted study during the Conditional Use hearing process
2. Continuous industrial Noise >3 dBA above ambient causes documented sleep disruption and health impacts.
3. Pure Tone and low-frequency noise are particularly intrusive to residential receptors.

Therefore, the standards herein are the minimum necessary to protect public health and welfare.

A. Maximum Permissible Sound Levels.

1. Baseline Ambient Standard: In no case shall the sound level emanating from a Data Center exceed the pre-construction ambient Noise level, as determined by a baseline study, by more than 3 dBA at any Property Line of any Sensitive Receptor. The 30-day study must include the quietest hour of the night (typically 3:00 AM) as the baseline. Baseline measurements shall exclude atypical or anomalous Noise events, including aircraft overflights, construction activity, emergency vehicle sirens, or meteorological conditions exceeding Beaufort Scale Level 3 wind speeds or measurable precipitation.
2. Leq with a Nighttime Penalty: Sound Levels shall be measured using the Equivalent Continuous Sound Level Leq metric. To account for increased community sensitivity during sleep hours, a +10 dB penalty shall be added to any measurement taken between 10:00 PM and 7:00 AM. The Leq methodology shall be consistent with internationally recognized community Noise assessment practices and shall be documented in the Applicant' s acoustical report.
3. Hard Caps. Notwithstanding the ambient-plus rule above, the 24-hour Leq shall never exceed the following absolute limits (these serve as the maximum permissible levels regardless of baseline ambient):
    - **a.** 45 dBA Leq at the Property Line of any Sensitive Receptor during daytime hours (7:00 AM - 10:00 PM).
    - **b.** 40 dBA Leq at the Property Line of any Sensitive Receptor during nighttime hours (10:00 PM - 7:00 AM).
    - **c.** 50 dBA Leq at any other Property Line.
4. Generator Testing Exception. Routine generator testing (limited to 1 hour per generator per month) may temporarily exceed the daytime noise cap in subsection 3(a) by up to 5 dBA, provided testing occurs only between 10:00 AM and 4:00 PM, Monday through Friday, and the Township is given 48 hours' advance notice.

B. Character of Sound.

1. Pure Tone Definition: A Pure Tone exists if any one-third octave band sound pressure level exceeds the arithmetic average of the two contiguous bands by 3 dB.

2. Penalty: If a Pure Tone, impulsiveness, or low-frequency modulation is detected, the maximum permissible sound levels established in Section A shall be reduced by an additional 5 dBA, provided that the resulting limit shall not be required to be lower than the pre-construction ambient baseline.

C. Low-Frequency Noise (dBC Weighting).

1. dBC Cap: To mitigate ground-borne "thrum" and low-frequency vibration not captured by A-weighting, the sound level shall not exceed 60 dBC at any residential Property Line.

D. Vibration.

1. No sustained or recurring vibration shall be perceptible to the human sense of feeling at or beyond the Property Line, when assessed under normal operating conditions, as determined by Township-approved testing, instrumentation, or direct observation. In no event, including during emergency operations or equipment testing, shall ground-borne vibration exceed the pre-construction baseline ambient vibration levels by more than 0.001g at the Property Line of any sensitive receptor, measured in accordance with a methodology approved by the Township Engineer.
2. Mandatory Isolation: All mechanical equipment (fans, chillers, generators, transformers, and rotating electrical equipment) shall be mounted on high-efficiency spring-isolated inertia bases with a minimum static deflection of not less than 2 inches, designed by a licensed professional engineer to achieve compliance with the vibration limits of this Section under worst-case operating conditions.

E. Sound and Vibration Compliance Testing and Auditing Protocol

1. Baseline Study: Prior to Conditional Use approval, the Applicant shall fund a 30-day baseline ambient noise study performed by a Township-approved third-party acoustical engineer. Measurements must be taken at the Property Lines of all nearby sensitive receptors, at points around the perimeter of the property at a minimum of every 200 feet, or any additional location deemed necessary by the Township Zoning Officer. The baseline study shall be completed prior to any land disturbance for construction but may be conducted during the application review period.
2. Post-Construction "As-Built" Audit:
    a. Within 30 days of the commencement of operations, and again at 6 months, a full-scale sound and vibration audit must be conducted. Because peak computational workloads are tenant-driven and ambient outdoor environmental conditions fluctuate, a naturally occurring alignment of maximum facility stress variables is not required to validate compliance. If concurrent peak historical conditions for ambient outdoor temperature, total power consumption, and computational workload do not naturally coincide during the mandated compliance audit window, the facility operator shall artificially simulate a peak operational state, as follows:
        i. Internal Component Simulation (Vibrational & High-Frequency Footprint): the internal server-driven acoustic and vibrational footprint shall be simulated using electrical load banks or synthetic load-generation software scripts driven to a sustained threshold of no less than the ninety-five percent (95th) percentile of the highest historical thirty (30) day utilization data blocks, concurrently stressing internal server chassis cooling fans, power distribution units, and electrical transformers to capture their maximum acoustic whine and low-frequency structural harmonic resonance; and
        ii. Mechanical Infrastructure Extrapolation (Low-Frequency & Cooling Footprint): the attendant mechanical cooling noise (including industrial chillers, cooling towers, and ambient condenser fans) under peak ambient thermal stress shall be determined by physically measuring the infrastructure under available ambient conditions during the active load bank test, with an independent, certified acoustical engineer then mathematically extrapolating those measured sound pressure levels to a worst-case seasonal design day ambient outdoor temperature of ninety-five degrees Fahrenheit (95°F / 35°C) using established cooling manufacturer performance curves and

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) evaluation guidelines.

b. If a violation of Noise or vibration caps is detected, the Owner shall, within 48 hours, submit a Mitigation Plan to the Zoning Officer and commence good-faith efforts to remediate. If the violation exceeds the Hard Caps by more than 3 dBA or dBC, the facility Operator shall immediately initiate the Tiered Mitigation and Curtailment Protocols of Section 21.E, with the time periods specified therein measured from the Township's or the independent auditor's verification of the exceedance under this subsection. Complete facility shutdown shall only be ordered if the noise level constitutes a public nuisance or an imminent health hazard.

3. Annual Compliance Certification: The Owner shall submit an annual report, certified by a third-party engineer, proving ongoing compliance. For facilities subject to the continuous monitoring requirements of item 4 below, real-time data shall be accessible to the Township Engineer. For all other facilities, the annual report, together with the underlying measurement data supporting it, shall be made available to the Township Engineer upon request. A summary compliance report shall be provided to the Township quarterly and which may be shared with the public via the township website.

4. Continuous Monitoring: For facilities exceeding 10 MW of installed peak electrical capacity, the Township shall require the installation of permanent, real-time noise monitoring stations at the Property Line, which may be made available accessible to the Township, via a public web portal.

F. Maintenance of Mitigation: All Noise and vibration mitigation measures, including but not limited to, silencers, baffles, and spring isolators, shall be maintained in "as-new" condition. The Township may require the immediate replacement of any mechanical component that, through wear or lack of maintenance, causes a sound or vibration increase of more than 2 dBA above the initial "As-Built" audit levels, even if the facility remains within the Hard Caps.

G. Measurement Standards. All noise and vibration measurements required by this Article shall be conducted by an independent third-party professional using industry¬ accepted methodologies, as reviewed and accepted by the Township.

H. Comprehensive Nuisance & Environmental Protection.

1. Enclosure & Containment. All infrastructure including but not limited to, data processing hardware, cooling infrastructure (excluding dry-cooler fans), and backup power systems shall be housed within a fully enclosed, sound-attenuated permanent Structure. Outdoor storage of equipment, components, or waste is strictly prohibited.

2. Visual & Atmospheric Nuisance.

a. Thermal Plumes & Fogging: The cooling system must be designed to prevent the formation of visible steam plumes, mist, or condensation clouds, pursuant to 25 PA Code Chapter 23. Any system that causes "icing" or "fogging" on public roadways or neighboring properties is a violation of this Chapter.

b. Glare: No reflective surfaces (metal roofing, unpainted tilt-up panels) shall be used that create glare for motorists or adjacent residential windows. All glass must be non-reflective.

c. Heat Islands: The facility shall not increase the ambient air temperature at the property line, or at any vertical elevation up to thirty-five (35) feet above the highest point of the tallest sensitive receptor located within three hundred (300) feet of the facility property boundary, by more than 2°F above the simultaneous control baseline ambient temperature, when averaged over any rolling fifteen (15) minute period under comparable meteorological conditions.

i. This subsection (c)(1) establishes the sustained, averaged compliance threshold; subsection (c)(2) below establishes a separate, higher short-duration threshold applicable to brief excursions, and nothing in subsection (c)(2) shall be construed to permit an exceedance of the fifteen-minute averaged threshold established in this subsection (c)(1).

ii. The facility shall not increase the ambient air temperature at the property line, or at any

vertical elevation up to thirty-five (35) feet above the highest point of the tallest sensitive receptor located within three hundred (300) feet of the facility property boundary, by more than 5°F above the simultaneous control baseline ambient reference temperature for more than three (3) cumulative minutes during any rolling sixty-minute period under comparable meteorological conditions, as calculated from the one-minute logging intervals defined herein.

iii. The maximum height of all sensitive receptors shall be established by a physical survey certified by a Pennsylvania-Licensed Professional Land Surveyor, submitted by the applicant. This survey shall serve as the initial baseline configuration for the facility's engineering design and subsequent municipal compliance monitoring, subject to re-survey upon (i) the Township's identification of material new construction or a material change in elevation of any structure within three hundred (300) feet of the facility property boundary, or (ii) the Operator's application for a material modification of facility computational or electrical capacity, whichever first establishes a taller sensitive receptor or otherwise materially alters the compliance geometry established under this subsection.

iv. Compliance shall be demonstrated prior to operation using predictive planning models accepted by the Township Engineer pursuant to a written computational fluid dynamics (CFD) model acceptance protocol adopted by the Township Engineer and made publicly available prior to any applicant's submission under this subsection, specifying minimum turbulence modeling approach, mesh resolution, and validation data requirements. Verification of compliance shall require the submission of comprehensive thermal dispersion and microclimate analysis utilizing three-dimensional Computational Fluid Dynamics (CFD) modeling. Submitted as part of the Environmental, Community, and Economic Impact Analysis (ECEIA), this study must be prepared by a qualified Professional Engineer (PE) or atmospheric scientist and must demonstrate anticipated compliance under all representative seasonal, operational, and meteorological conditions, including peak operational loads and various wind velocities, to ensure no adverse microclimate impacts on neighboring properties or sensitive ecological receptors. During operations, compliance shall be verified through continuous or periodic physical measurements, as appropriate to the approved monitoring architecture, captured by a Township-approved monitoring system independently managed, calibrated, and audited by a qualified independent engineering firm. Temperature measurements shall be based upon continuously logged readings averaged at one-minute intervals. The Township-approved monitoring system shall generate an automated alert to the Township Engineer immediately upon any reading indicating an exceedance of the thresholds established in Subsections (c)1 and (c)2, regardless of the cause of the exceedance or whether it is later determined to have self-corrected. This alert function does not require, and the Township does not undertake, continuous live human monitoring of the system, and its existence shall not be construed to create a standing duty to observe or act on data in real time. The applicant shall submit a thermal monitoring plan prepared in strict accordance with ASTM D1356 (Standard Terminology Relating to Sampling and Analysis of Atmospheres), WMO (World Meteorological Organization) Guide No. 8, and such other applicable meteorological or atmospheric monitoring standards as are proposed by the applicant and approved by the Township Engineer. The plan shall identify at a minimum:

1. Monitoring locations;
2. Sensor elevations;
3. Instrumentation specifications;
4. Calibration procedures;

5. Data logging intervals;
6. Meteorological normalization methodology;
7. Quality assurance procedures; and
8. Long-term data retention protocols.

v. Temporary operational exceedances resulting solely from extraordinary meteorological conditions or atmospheric inversion conditions that materially impair the reliability or comparability of thermal measurements shall not constitute violations unless facility operations materially contribute to the exceedance.

vi. Isolated, non-recurring exceedances of short duration that do not result in material adverse impacts on neighboring properties or sensitive ecological receptors may be considered by the Township in determining appropriate enforcement response. Any failure of facility equipment, climate control networks, ambient cooling systems, or internal operational controls that result in an exceedance of the thermal thresholds established in Subsections (c)1 and (c)2 lasting longer than fifteen (15) minutes, or that fails to self-correct through automatic failover or redundant controls, shall constitute an immediate violation of this Ordinance, with no grace period or minimum duration of non-compliance beyond the fifteen-minute window described above. Upon the automated alert generated under the preceding paragraph, the Operator shall, within twenty-four (24) hours, submit a root-cause and corrective-action report to the Township Engineer for any such violation. An equipment-driven exceedance that self-corrects through automatic failover or redundant controls within fifteen (15) minutes shall not itself constitute a violation, but the Operator shall, within twenty-four (24) hours of the automated alert generated under the preceding paragraph, submit a report documenting the self-correction to the Township Engineer, and such report shall be considered in evaluating any pattern of recurring equipment-driven exceedances under the Tiered Mitigation and Curtailment Protocols of Section 21.E.

vii. Upon a violation logged under the preceding paragraph, or upon the Township's determination that a pattern of recurring equipment-driven exceedances logged under the preceding paragraph warrants escalation, the facility Operator shall comply with the Tiered Mitigation and Curtailment Protocols Section 21.E.

3. Odor & Air Quality.
   a. Diesel/Fuel Exhaust: The release of odors from backup generator testing or operation shall not be sustained or recurring and shall not be perceptible beyond the Property Line, as determined by Township-approved observation or air quality testing.
   b. Mandatory Tier 4: All backup generators must use EPA Tier 4 Final engines with integrated Selective Catalytic Reduction (SCR) and Diesel Particulate Filters (DPF) utilizing automated electrical “load banks” during all testing procedures to eliminate soot and nitrogen oxide (NOx) smells.
4. Electromagnetic and Radio Frequency Interference (EMl/RFI).
   a. Electromagnetic & Radio Frequency Interference (EMl/RFI) and Grid Impact.The Applicant shall provide an engineering certification signed and sealed by a Professional Engineer licensed in Pennsylvania, proving that all electrical systems, switching power supplies, computing infrastructure, and cooling equipment are designed, shielded, constructed, and operated to maintain electromagnetic and grid isolation in strict accordance with the following regulatory baselines:
      i. Atmospheric Limits: FCC Part 15 A for industrial zones or 15 B for residential zones.
      ii. Testing of Atmospheric transmission shall comply strictly with the protocols prescribed by IEEE C63.4.

iii. Conducted Emissions: Surge and Transient Immunity shall comply with IEEE C62.41.2 (Recommended Practice on Characterization of Surges in Low-Voltage AC Power Circuits).

iv. Grid Impact: Total Demand Distortion and Total Harmonic Distortion shall comply with IEEE 519 (IEEE Standard for Harmonic Control in Electric Power Systems) and must be verified directly at the Point of Common Coupling (PCC) with the electric utility provider.

v. Grounding Architecture: Grounding and electronic protection systems shall comply with IEEE 1100 (IEEE Recommended Practice for Powering and Grounding Electronic Equipment).

b. Post Occupancy Remediation Mandate: If electromagnetic interference (EMI/RFI) or grid power degradation exceeding the baselines established in Subsection (a) is detected or reported post-occupancy, the facility operator shall comply with the Tiered Mitigation and Curtailment Protocols in Section 21E.

5. Lighting Trespass (Dark Sky Compliance)
   a. Footcandle Limit: Light trespass onto any adjacent property shall be designed to achieve 0.0 footcandles, measured to the extent practicable, and shall not exceed 0.05 footcandles under any operating condition.
   b. Color Temperature: To protect local wildlife and nocturnal pollinators, all exterior lighting must be 2200K or lower (warm amber) and use "Full Cut-Off" fixtures.
6. Liquid & Chemical Waste.
   a. Blowdown and Industrial Waste Prohibition: No liquid waste from cooling systems ("blowdown water"), de-ionized water discharge, or chemical cleaning agents shall be discharged into the Township's storm sewer system, onto the ground, or into any Waters of the Commonwealth.
      i. All such liquids shall be classified as Industrial Waste and must be managed in accordance with PA DEP Title 25, Chapters 91-95.
      ii. Discharge into a public sanitary sewer is only permitted if the Applicant provides a Pre-treatment Agreement approved by the receiving authority and a PA DEP Water Quality Management (WQM) Permit.
      iii. If no sanitary connection is available, the Applicant must use a "Zero Liquid Discharge" (ZLD) system or provide a binding contract with a PA DEP-licensed hazardous waste hauler for the off-site disposal of all industrial effluent.
   b. Stormwater Hotspots: All stormwater management facilities shall be designed in accordance with PA DEP's Pennsylvania Stormwater Best Management Practices Manual (Document No. 363-0300-002) as well as East Whiteland Township Chapter 170 Stormwater Management. The site shall be designated as a "Stormwater Hotspot" as defined therein, requiring the use of structural BMPs designed to treat 100% of the runoff volume for hydrocarbons and heavy metals prior to discharge.

I. Substantial Change in Technology: Any replacement of more than 25% of the facility's cooling infrastructure or power equipment within a 12-month period shall require a new noise and vibration audit to ensure continued compliance with the Baseline Ambient Standard. The Owner shall notify the Zoning Officer in writing 30 days prior to any major equipment replacement Such review shall be limited to verifying continued compliance with the performance standards of this Article and shall not be construed as reopening the Conditional Use approval except as expressly provided herein.

SECTION 8. Water Use and Utilities.

Utility Status and Interpretation. For purposes of this Chapter, a Data Center shall not be deemed a public utility or essential public service. The presence of a Data Center shall not justify the expansion of utility infrastructure at

the expense of the Township or its residents. The Board finds that:

1. Little Valley Creek watershed is a critical water resource for the region;
2. Data center cooling systems can consume millions of gallons of water monthly; and
3. Evaporative cooling can significantly impact groundwater levels and stream baseflow during drought conditions.
4. Therefore, the water use standards herein are the minimum necessary to protect watershed integrity and ensure water availability for residential and agricultural uses.

A. Cooling Systems.

1. Mandatory Technology: To preserve the Little Valley Creek watershed, all facilities must use Closed-Loop Air-Cooled Chiller technology or equivalent cooling systems that result in zero net consumption of water for cooling purposes during standard operations. Any intermittent discharge from maintenance or system flushing shall be subject to the standards in Section 8.B.4
2. Prohibitions. The use of "once-through" cooling, Evaporative Cooling, "Open-Loop" systems, and the use of private high-yield wells for any cooling or humidification purpose is strictly prohibited, except as provided in subsection (3) below.
3. Alternative Technology Exception. An alternative cooling technology that involves limited evaporative or consumptive water use may be considered only if the Applicant demonstrates, through peer-reviewed engineering analysis, site-specific hydrologic modeling, and verification by the Township's independent consultant (at Applicant's expense), all of the following:
    a. The proposed system achieves a maximum consumptive water use not exceeding 50 gallons per day per installed megawatt (MW) of peak electrical capacity, averaged over any rolling 30-day period during standard operations (excluding emergency fire suppression and routine maintenance flushing);
    b. The consumptive use results in no adverse effect on groundwater quantity, stream baseflow, wetland hydrology, or the Little Valley Creek watershed, as demonstrated by the Hydrological Impact Analysis required under Section 8.B, including stress testing for 100-year drought and 14-day extreme heat events;
    c. The alternative technology provides environmental protections (including energy efficiency, thermal discharge, chemical use, and air quality) equal to or superior to Closed-Loop Air-Cooled Chiller technology under all modeled operating conditions, as verified by a third-party engineering analysis; and
    d. The system includes permanent, real-time water consumption monitoring with data accessible to the Township via a public web portal, and automatic curtailment if the approved threshold is exceeded for more than 72 consecutive hours.

   The intent of this subsection is to permit demonstrably superior technologies while protecting watershed resources. The 50 gallons per day per MW limit in this subsection is the maximum allowable for any approved alternative technology and shall not be construed to permit higher consumptive use than otherwise capped in subsection 8.B.7.
4. Any approved alternative technology shall be subject to annual third-party verification audits funded by the Applicant.
5. Fire Suppression Exception: Potable water may be used for fire suppression testing and emergency events only.

B. Water Supply and Aquifer Protection Standards:

1. Peak-Demand and Climate Stress Testing: All Conditional Use applications for a Data Center Use require a comprehensive Hydrological Impact Analysis. This analysis must include an engineered stress test model demonstrating that the facility can continuously sustain peak operations during a modeled 100-year drought event, or a continuous fourteen (14) day geographic period exceeding ninety-five degrees Fahrenheit (95°F), without drawing more than one hundred ten percent (110%)

of its baseline daily domestic water allocation. If predictive modeling indicates a variance above the 110% threshold, the applicant shall install fully enclosed on-site water storage cisterns or structural steel tanks sufficient to independently bridge the facility's water demands for a minimum of seventy-two (72) continuous hours without drawing from the public grid or the local aquifer.

2. Public Water Preference and Utility Capacity: All Data Center structures shall be served exclusively by a public water utility provider operating within Chester County. The applicant must submit a binding 'Will-Serve' letter from the provider and a localized conveyance hydraulic study prepared by a licensed professional engineer verifying that the grid infrastructure maintains standard, uninterruptible fire-flow pressures under peak local demand conditions.
3. Non-Public Aquifer Feasibility Mandate: In the event that a public water utility connection is physically unavailable, the applicant must provide an exhaustive Water Feasibility Study prepared by a licensed hydrogeologist. No Data Center Use shall be approved unless this study demonstrates, via empirical on-site testing and geologic core sampling, that the project produces zero (0) adverse effects on the groundwater quantity, water table elevation, or chemical quality for any residential or agricultural well within a 2,500-foot radius of the tract boundary. The study must include a detailed geologic map of a one-mile radius from the site center and an objective impact determination mapping any predicted 'cone of depression' or drawdown within the applicable, underlying watershed and adjacent perennial or intermittent streams.
4. Thermal and Chemical Discharge Standards: For any facility that generates a liquid discharge or wastewater, the Applicant shall provide a Wastewater Characterization Study. This study must certify that:
    a. Thermal Pollution: At the point of discharge, any "blowdown" or discharge water will be cooled to within 5°F of the ambient receiving water temperature prior to discharge.
    b. Chemical Pre-treatment: Discharge water must be treated on-site to remove concentrated biocides, anti-scaling agents, and mineral solids to meet or exceed local municipal standards.
5. Regulatory Approval: Proof of review and approval from all applicable outside agencies is required for projects proposing water withdrawals of 100,000 gpd or more over a 30-day average, or any consumptive use of 20,000 gpd or more.
6. Cost Burden: 100% of the cost for increasing conveyance, storage, or capacity in the public water system necessary to serve the facility shall be borne solely by the Data Center Owner.
7. Water Use.
    a. For alternative technology approved per Section 8.A.3, total consumptive water use-including cooling and humidity control, (excluding domestic use and fire suppression testing)-shall not exceed 1,500 gallons per day per MW if public water supply is used and (Delaware River Basin Commission) approval is required. For facilities using mandatory closed-loop air-cooled systems per Section 8.A.1,the 1,500 gpd/MW cap applies only to non-cooling water uses (domestic, humidity, fire testing).
    b. In no event shall total consumptive use exceed 7,500 gallons per day unless expressly approved pursuant to Subsection (c) based on site-specific modeling demonstrating no adverse watershed or groundwater impacts.
    c. In the event of a utility-wide "Stage 3" drought declared by the Delaware River Basin Commission, the Board may grant a temporary waiver of water caps for fire suppression and humidity control only, subject to a Mandatory Water Reduction Plan submitted by the Applicant and approved by the Township Engineer.
    d. The one-time filling of fire suppression cisterns required under Section 11.E.3 shall be exempt from daily water consumption caps, provided that:
        i. Cistern refilling occurs no more than annually for maintenance;
        ii. The Township is notified 48 hours in advance; and
        iii. Filling does not occur during DRBC-declared drought conditions

C. Power Supply and Grid Integrity.

1. Utility Impact Certification: The Applicant shall provide written certification and an Interconnection Agreement from the electric provider (e.g., PECO) demonstrating that the proposed facility will not reduce capacity or reliability for existing Township customers.

2. Grid Impact Study: A study shall be submitted identifying peak load, required transmission upgrades, and necessary off-site improvements.

3. Infrastructure Impact: The Applicant shall provide a "Service Impact Analysis" certifying that all necessary grid upgrades, transformer replacements, or transmission reinforcements required to serve the facility are funded entirely by the Applicant, ensuring no infrastructure cost-shifting to the Township's capital accounts or existing local service network.

4. On-Site Generation: Any energy generation systems (e.g. solar, wind, gas, or fuel Cell) intended for normal operations shall be considered a separate use and must meet the individual zoning requirements for those specific power plants.

a. Backup generators shall be operated solely for:

i. bona fide emergency power loss, defined as an involuntary, unplanned disruption of utility grid power, which may occur during, and is not precluded by, a period of mandatory curtailment;

ii. routine testing and maintenance not exceeding one (1) hour per generator per calendar month, provided that such testing and maintenance shall not be conducted during any period of mandatory curtailment; or

iii. as otherwise expressly required by an applicable federal or state regulatory testing, certification, or safety mandate applicable to the generator equipment itself. Operation for peak shaving, economic dispatch, grid support services, supplemental power during load shedding or mandatory curtailment, or participation in energy markets is expressly prohibited. This prohibition is imposed as a local land-use and equipment-use restriction under the Township's police power and is not intended as an assertion of authority to regulate wholesale power markets or grid reliability standards within the jurisdiction of the Federal Energy Regulatory Commission. The Operator shall monitor generator operation for compliance with all requirements of this subsection and shall record, for each generator, all run-hours, start and stop timestamps, and operational mode. The operator shall notify the Township Engineer in writing of any exceedance of, or operation inconsistent with, this subsection within two (2) calendar days of the Operator's discovery of such exceedance or inconsistent operation. Records maintained under this subsection shall be made available to the Township Engineer upon request.

b. The Applicant shall use EPA Tier 4 Final diesel generators for all standby power. All generators must be housed within Level 3 Sound-Attenuated Enclosures (the highest industry rating for Noise dampening). Noise from backup generators shall comply with the standards and testing exception in Section 7.A. Generators shall not be permitted to be used for electrical grid load management.

c. Routine maintenance testing shall be limited to the hours of 10:00 AM to 4:00 PM, Monday through Friday, excluding federal holidays. Nothing in this section shall be construed to permit the operator to sell power back to PECO or other users, which is expressly prohibited.

5. Renewable Energy Requirement.

a. Prior to issuance of Certificate of Occupancy, the Applicant shall provide binding documentation (e.g., power purchase agreements, REC certificates, and/or on¬ site generation plans), that at least 50% of the facility's annual electrical consumption is sourced from renewable energy (solar, wind, or other qualifying sources under PA Alternative Energy

Portfolio Standards Act).

b. Within 90 days of the first anniversary of operations, the Owner shall submit verified energy consumption data and proof of renewable energy procurement. Failure to achieve the 50% threshold shall require a compliance plan approved by the Township within 180 days.

c. Failure to maintain the 50% threshold shall constitute a violation subject to Section 21 and may trigger mandatory escalation to 75% within 2 years of initial noncompliance.

D. As a requirement of Conditional Use application, the Applicant shall demonstrate that Renewable energy sources will be:

1. On-site (e.g., rooftop/ground-mounted solar screened per §-6 and §-5.M visual standards); or

2. Off-site generation within PJM region with Renewable Energy Certificates (RECs) retired on behalf of the facility; or

3. Power Purchase Agreements (PPAs) with generators within the watershed, where available. The Applicant may demonstrate compliance through annual reporting verified by a third-party energy auditor.

4. Public Safety & Infrastructure Mitigation Fund: Applicants shall contribute to a Public Safety & Infrastructure Mitigation Fund as set forth in Section 12.

SECTION 9. Riparian Buffers.

A. Applicability. The provisions of this Section shall apply enhanced standards to Data Centers, Data Center Campuses, and other high-intensity, utility-dependent, or infrastructure-intensive facilities associated therewith, including but not limited to facilities cooling arrays, substations, battery energy storage systems (BESS), emergency generator yards, or transmission corridors.

B. Enhanced Buffer Width Metrics:

1. Where an Intermittent Stream, lake, pond, or Wetland is present, a Riparian Buffer shall extend a minimum of 100 feet landward from the top of bank on each side.

2. Where a perennial stream is present, a Riparian Buffer shall extend a minimum of 150 feet landward from the top of bank on each side.

3. Where Exceptional Value (EV) or High Quality (HQ) waters are present, the minimum buffer shall be 200 feet, unless a greater width is required by state or federal regulation.

C. Measured Area. The Riparian Buffer shall be measured horizontally from the Top of Bank and shall include all lands within the buffer, regardless of floodplain designation.

D. Buffer Integrity.

1. Riparian Buffers shall be maintained in a permanently vegetated, undisturbed state.

2. Clearing, grading, filling, excavation, soil compaction, stockpiling, or disturbance shall be prohibited except as expressly permitted herein.

E. Prohibited Uses Within the Riparian Buffer. In addition to those restrictions set forth in Ordinance Section 200-56 and the Township's Stormwater Management Ordinance, the following shall be expressly prohibited within the Riparian Buffer for Data Centers:

1. Buildings, Structures, or foundations of any kind.

2. Impervious Surfaces, including pavement, concrete pads, or equipment pads.

3. Utility Structures, substations, transformers, cooling infrastructure, pipes, conduits, or vaults, except where crossing is unavoidable and no feasible alternative exists, as demonstrated by a Feasibility Alternatives Analysis reviewed by the Township Engineer and approved by the Township Engineer.

4. Grading, regrading, or alteration of natural contours.

5. Stormwater basins, infiltration systems, or outfalls, except for sheet flow dispersion systems designed to restore natural hydrology.

6. Backup generators, fuel storage, or hazardous material storage.

F. Permitted Uses (Strictly Limited). Permitted uses within the Riparian Buffer shall be limited to the following and shall require Township approval:

1. Stream crossings for utilities or access where no feasible alternative exists, minimized in width and disturbance.
2. Non-motorized recreational trails, designed to avoid sensitive features and constructed with pervious materials.
3. Stream restoration or bank stabilization projects using natural channel design techniques.

G. Vegetation and Planting Requirements
1. Native Vegetation Mandate. Riparian Buffers shall be planted and maintained with native trees, shrubs, and herbaceous vegetation consistent with Appendix B of the PA BMP Manual or the most current successor document.
2. Canopy Requirement. A minimum of 60% tree canopy coverage shall be achieved within 10 years of installation.
3. Invasive Species Control. Invasive species shall be removed and controlled through a Township-approved management plan.
4. Permanent Protection. Riparian Buffers shall be protected by conservation easement, deed restriction, or similar legal mechanism acceptable to the Township Solicitor. Such protection shall be recorded prior to or concurrent with the recording of any subdivision or land development plan.

H. Stormwater, Thermal, and Hydrologic Protections
1. Pre-Development Hydrology. All activities adjacent to Riparian Buffers shall maintain, to the maximum extent practicable, pre-development runoff volumes, rates, and temperatures.
2. Thermal Pollution. For Data Centers, stormwater discharges shall be designed to prevent thermal loading of adjacent water bodies.
3. Outfall Design. Concentrated discharges into the Riparian Buffer are prohibited except where restored to sheet flow prior to entering the buffer.

I. Floodplain and Stream Stability.
All permitted activities shall:
1. Preserve, and where practicable expand, the extent of the 100-year floodplain.
2. Enhance streambank stability.
3. Maintain or improve aquatic habitat and ecological function.

J. Septic and Wastewater. Septic systems, drainfields, wastewater infrastructure, and related facilities shall be prohibited within Riparian Buffers and shall comply with all applicable state Setback requirements.

SECTION 10. Hardware Containment and Thermal Isolation

A. Enclosure Standards. All server racks and high-density computing equipment shall be housed within a specialized, fire-rated internal containment system (e.g.,"containment pods" or "hot-aisle enclosures") designed to isolate thermal events at the source.

B. Passive Mechanical Baffles. To mitigate the risk of a "thermal runaway" event and protect emergency responders, the containment space shall be equipped with gravity¬ actuated or spring-loaded mechanical baffles (e.g., via fusible links). These baffles must:
1. Automatically seal the enclosure in the event of a fire or thermal spike.
2. Operate entirely independently of the facility's electrical, digital, or battery¬ backup control systems to ensure containment during a total power failure.

C. Internal Smoke and Gas Isolation. The containment system and internal baffles shall be designed to prevent the migration of toxic smoke, ionized gases, and particulates from the containment pod into the larger Building volume. This "box-within-a-box" approach is a mandatory performance standard to ensure fire-suppression agents (such as clean-agent gas) remain concentrated at the source of the fire.

D. Atmospheric and HVAC Protection. The facility's HVAC architecture shall be equipped with automated "Smoke Dampers" and isolation zones. In the event of an internal thermal incident, these systems must prevent the release of toxic gases or ionized particulates into the outside atmosphere or onto neighboring properties.

SECTION 11. Emergency Services and Safety.

- **A.** Specialized Fire Protection Plan: The Applicant shall submit a comprehensive Emergency Response Plan (ERP) prepared by a qualified fire protection engineer. This plan must be reviewed and approved by the local Fire Marshal and the Chief of the responding Fire Company as a condition of approval, which is subject to review and required update at the discretion of the Township.
- **B.** Scope: The ERP must include:
  - **1.** Detailed procedures for fire suppression, containment, run-off, ventilation, and evacuation specifically tailored to Lithium-Ion Battery Energy Storage Systems (BESS), or other equivalent technologies that are deployed, and high¬ voltage electrical arrays;
  - **2.** A Gap Analysis identifying any specialized equipment or training deficiencies of local emergency responders; and
  - **3.** A mitigation plan addressing any identified gaps through equipment procurement, training programs, or other measures funded by the Applicant.
- **C.** In addition to any requirements of the Township's Life Safety Program, annual testing and reporting of generators, BESS systems, and fire suppression systems shall be required.
- **D.** Emergency Evacuation and Power Isolation: The Fire Marshal shall have the authority to order an immediate evacuation and the isolation of specific electrical subsystems.
- **E.** Fire Company Training & Equipment:
  - **1.** Mandatory Training: The Applicant shall be responsible for funding specialized training for all local first responders (Fire, EMS, and Police) regarding the specific hazards of the facility. This training must occur prior to the issuance of a Certificate of Occupancy at a time designated by the Chief of Fire and Emergency Services and be refreshed annually at the Owner's expense.
  - **2.** Equipment Procurement: If the local Fire Company does not possess the specialized equipment required to combat a data center or BESS fire as documented in the Emergency Response Plan Gap Analysis, including, but not limited to high-volume thermal imaging cameras, specialized foam suppression agents, or heavy-duty ventilation fans), the Applicant shall provide a Financial Contribution sufficient for the Township to purchase such equipment for the first responders.
  - **3.** If public water pressure is insufficient for a sustained fire event, the Applicant shall establish the availability of sufficient public water pressure for a sustained fire event, and in the alternative, a dedicated on-site fire pond or cistern. It is specifically prohibited to have a well to meet the intent of this section.
  - **4.** Emergency Access: All access roads and hydrant locations must be designed to accommodate the turning radius and weight of the largest potential responding fire apparatus
- **F.** Battery Storage Safety (NFPA 855):
  - **1.** Any Data Center using BESS must demonstrate total compliance with NFPA 855 - Standard for the Installation of Stationary Energy Storage Systems. All battery enclosures must be equipped with dedicated, automated fire suppression systems designed specifically for chemical fires.
  - **2.** Specialized Suppression: All BESS units must be equipped with off-gas detection and an automated "clean agent" suppression system (e.g., Novec 1230 or FM-200). Water-only sprinkler systems shall not be deemed sufficient unless demonstrated, through a fire protection engineering analysis, to provide equal or greater protection.
  - **3.** Explosion Control: All BESS enclosures shall be equipped with explosion prevention or deflagration venting in accordance with NFPA 68 or NFPA 69 to prevent structural failure of the enclosure and protect first responders from blast overpressure during a thermal runaway event.
- **G.** Post-Incident Environmental Remediation.
  - **1.** Hazardous Debris Removal: In the event of a fire, explosion, or chemical release¬ specifically including "Thermal Runaway" events in BESS units-the Owner shall be responsible for the immediate professional "scrubbing" and removal of all particulate matter, soot, and fire-

suppression residues from the site, public rights¬ of-way, and any impacted properties.

2. Post-Fire Environmental Audit: Within 48 hours of any fire event, the Owner shall fund the collection of samples by a third-party environmental firm and environmental audit to test for air, soil, and water contamination (including, but not limited to PFAS, Hydrogen Fluoride, lithium oxide, and heavy metals) with a final report submitted to the Township immediately upon lab certification.
3. Runoff Containment: The facility must use a secondary containment system designed to capture 100% of the water used during a sustained fire suppression event to prevent toxic runoff from entering the local waterways or local groundwater.
4. Certified Disposal: A waste classification shall be performed on all fire debris, spent suppression agents, and any other waste and shall be disposed of in accordance with federal, state, and local regulations. The Owner must submit certified disposal manifests to the Township Fire Marshal within 30 days of the incident.

SECTION 12. Public Safety and Infrastructure Mitigation Fund

A. The Applicant shall contribute to a Public Safety and Infrastructure Mitigation Fund. The fund shall reimburse the Township for costs directly attributable to the facility.

B. Determination of Contribution Amount.

1. The required contribution shall be determined on a case-by-case basis by the Board, based on Substantial Evidence in the record. This evidence shall include a study prepared by a third-party fire protection engineer and civil engineer (retained at the Applicant' s expense) projecting the reasonably anticipated 20-year costs directly attributable to the facility for:
    - **a.** Specialized fire-suppression equipment and agents (e.g., F-500 foam, battery fire blankets, high-voltage safety gear);
    - **b.** Annual specialized training for local first responders (e.g. Fire/EMS);
    - **c.** Third-party compliance verification and monitoring (e.g., Noise, vibration, thermal plume); and
    - **d.** (Repair or remediation of public infrastructure (e.g., roads) demonstrably damaged by facility-related heavy traffic or operations.
2. The total contribution shall not exceed $50,000 per installed MW of peak electrical capacity unless the Board makes written findings of fact, supported by Substantial Evidence, documenting higher site-specific costs justified by the study or other record evidence.

C. Timing and Initial Deposit. Prior to issuance of the first permit, the Applicant shall provide an initial deposit of $25,000 per MW held in escrow pending final determination of the total MW. Upon approval by the Board of the final amount following submission and review of the engineering study, the Applicant shall pay the balance or receive credit/refund if over-deposited.

D. Escrow Management and Replenishment.

1. Funds shall be held in a restricted, interest-bearing escrow account managed by the Township.
2. The Owner shall maintain a minimum balance equal to 50% of the approved contribution amount or the estimated cost for one full recharge of specialized suppression agents/equipment (whichever is greater), as periodically reviewed.
3. If the balance falls below the minimum, the Owner shall replenish to the required level within 15 days of Township notification. Failure to replenish constitutes a violation and may result in suspension of the operating permit.
4. Credits and Alternatives. The Applicant may submit evidence of alternative mitigation (e.g., Applicant-provided training programs, contributions, and/or equipment donations) to reduce the required contribution, subject to Township approval.

SECTION 13. Emergency Contact Signage: Each Data Center operation shall provide permanent, weather-resistant 24-hour emergency contact signage at all primary and secondary vehicular access entrances.

A. Required Content: Signs shall include the facility's commercial name, the 911 Street address, a 24-hour monitored emergency telephone number for a site representative with the authority to grant access and the corresponding electric utility company's name and emergency contact number.

B. Technical Safety Data: Signage must also include a "Hazardous Materials Identification" (NFPA 704 Diamond) indicating the presence of lithium-ion batteries, fire suppression gases, or bulk diesel fuel on-site. The NFPA 704 Diamond must specifically indicate "W" with a strikethrough if water-reactive materials are present, and "OX" for oxidizers, ensuring responders do not use incompatible suppression agents.

C. Visibility and Aesthetic Compliance: All Signs shall be a minimum of 4 square feet using reflective lettering. The Sign shall be mounted on a stone or wood-look monument base that matches the building's vernacular, provided that such mounting does not obscure visibility for emergency responders.

SECTION 14. Environmental, Community, and Economic Impact Analysis (ECEIA)

A. Requirement of Study: An application for a Data Center shall be accompanied by a comprehensive Environmental, Community, and Economic Impact Analysis (ECEIA) prepared by a multidisciplinary team of PA-licensed professionals (including at least one acoustical engineer, one hydrogeologist, and one historic preservation consultant). The team shall also include one or more independent qualified professionals with demonstrated expertise in economics, actuarial analysis, public finance, real estate valuation, insurance risk assessment, or utility infrastructure economics, as applicable to the impact categories evaluated under this Article. The purpose of the ECEIA shall be to evaluate the reasonably foreseeable direct, indirect, and cumulative impacts of the proposed facility on surrounding properties, public infrastructure, environmental resources, historic resources, municipal services, and community economic conditions.

B. Contents of Analysis: The ECEIA shall, at a minimum, include the following:

1. Narrative of Operations:

a. Detailed description of on-site activities, including "Data Center Accessory Uses" (substations, battery arrays).

b. Precise hours of operation and a breakdown of the maximum number of Employees per shift.

c. Traffic Study: Frequencies and types of vehicle trips, with a specific focus on heavy equipment delivery during construction and liquid fuel delivery for backup generators.

2. Existing Resources Inventory:

a. A site plan identifying all floodplains, wetlands, and Waters of the Commonwealth.

b. Historic Resource Impact Study (HRIS): Identification of all cultural and historic resources on the property and within 1 mile of the boundary. This must include a "Viewshed Analysis" to determine the visual impact of the building bulk, rooftop dry-cooler arrays, heat exchangers, exhaust stacks, and any other rooftop mechanical equipment or appurtenances from historic sites. The Viewshed Analysis shall include a physical "Balloon Test" or equivalent 3D digital simulation conducted during "leaf-off" conditions to determine the maximum visibility of the building envelope and any rooftop mechanical equipment from designated historic resources.

c. Applicability of Historic Regulations. Compliance with this Article shall be in addition to, and not in lieu of, any requirements applicable to Historic Districts or historic resources under the Township Code.

3. Materials and Waste Management:

a. Hazardous Materials Disclosure: A full inventory of all materials stored on¬ site, including but not limited to, dielectric fluids, lithium-ion battery components, diesel fuel, and chemical fire suppressants.

b. Evidence of a binding contract for the legal disposal or recycling of "E¬ Waste" (servers) and

hazardous components at the end of their lifecycle.

4. Community Infrastructure Evaluation:
    a. Emergency Services: A "Gap Analysis" identifying if local fire and EMS have the specialized equipment (e.g., F-500 foam, battery fire blankets) required to respond to a site-specific emergency
    b. Sewage & Solid Waste: Proof of capacity from the receiving authority.
    c. School District Fiscal Impact: The Applicant shall provide a School District Fiscal Impact analysis for the Board's review. This study is for planning purposes only and shall not be the sole basis for the approval or denial of the Conditional Use.
5. Property Value Analysis:
    a. A Market Impact Analysis prepared by a Member of the Appraisal Institute (MAI) evaluating the potential impact of the facility's Noise, light, and visual bulk on the property values of adjacent residential parcels. The analysis shall use a "Paired Sales" or "Repeat Sales" methodology involving properties in proximity to similar industrial or data center uses elsewhere in the Mid¬ Atlantic region.
6. Cumulative Impact Evaluation.The ECEIA shall include a detailed assessment of cumulative impacts from the proposed Data Center in combination with all existing, approved, or pending Data Centers, Battery Energy Storage Systems (BESS), solar energy facilities, or similar high-impact uses within a 5-mile radius (including areas outside Township boundaries). The analysis shall model and demonstrate no net cumulative adverse effect on:
    a. Noise, vibration, and low-frequency emissions (Section 7 standards)
    b. Thermal plumes, heat islands, and microclimate effects (Section 7.H.2);
    c. Visual, auditory, or thermal intrusion on the setting and integrity of any Historic Resources;
    d. Groundwater quantity/quality and watershed hydrology (Section 8.B).
    e. Electrical grid reliability and residential priority (Section 18).

Cumulative modeling shall use peer-reviewed methodologies verified by the Township Engineer (at Applicant's expense). Any projected net cumulative adverse effect shall constitute grounds for denial.

C. The Applicant shall use best efforts to identify existing or approved Data Centers within 5 miles using publicly available information. Failure to identify a facility due to lack of disclosure by neighboring municipalities shall not be grounds for denial if the Applicant demonstrates good faith effort.

D. Tiered Review for Smaller Data Centers. For proposed Data Centers with a documented peak electrical demand of less than 5 megawatts (5 MW)-as calculated on an aggregate basis pursuant to Section 3.E and verified by a binding utility interconnection agreement or engineering certification submitted with the application¬ the Township may approve a streamlined Environmental Community and Economic Impact Analysis (ECEIA) upon demonstration to the satisfaction of the Board that the Applicant has complied with the criteria set forth in this subsection.

1. A streamlined ECEIA shall prioritize evaluation of the following impact areas, as applicable:
    a. Noise and vibration;
    b. Water use and hydrologic impacts;
    c. Visual and historic impacts.
2. Upon submission of Substantial Evidence demonstrating, to the satisfaction of the Board, that the proposed facility poses no material risk (meaning no adverse effect, as determined by objective data and peer-reviewed or industry¬ accepted methodologies) to public health, safety, welfare, grid reliability, watershed resources, historic integrity, or Sensitive Receptors, the Board of Supervisors may waive or condense studies that are not reasonably related to the scale or impacts of the proposed facility, including, but not limited to, a full grid impact analysis, property value analysis, or detailed cumulative impact modeling beyond the site-specific area.

3. For purposes of this subsection, "Substantial Evidence" shall include at least one of the following:
    a. Written confirmation from the electric utility provider (PECO) and/or PJM Interconnection that the proposed interconnection requires no transmission or distribution system upgrades and will not adversely affect service reliability for existing customers;
    b. Noise modeling or measurements demonstrating compliance with all applicable standards of Section 7 at the Property Line of any Sensitive Receptor;
    c. Visual simulations prepared in accordance with Section 5.M, including a leaf-off balloon test or equivalent methodology, demonstrating no adverse effects on historic viewsheds or visual character;
    d. Hydrologic data or modeling confirming that water consumption complies with Section 8 limitations and will produce no adverse effect on groundwater, surface waters, or the applicable watershed.
4. The Board may require additional studies or analysis beyond those identified above only upon making written findings of fact, supported by Substantial Evidence in the record, that site-specific conditions, proximity to Sensitive Receptors, existing or approved nearby data centers, or other cumulative effects may reasonably pose a material risk to the impacts identified in this Article.
5. Approval of a streamlined ECEIA shall not relieve the Applicant of compliance with all applicable performance standards, mitigation requirements, or operational conditions of this Article. Denial of a streamlined ECEIA, waiver of any study, or requirement of additional analysis pursuant to this subsection shall not, by itself, constitute grounds for denial of the Conditional Use application.

SECTION 15. Conditional Use Criteria

A. Criteria for Approval. The Applicant bears the burden of demonstrating, which burden shall include the persuasion burden concerning general standards and the detrimental effect upon the community health, safety, and welfare, by Substantial Evidence in the record, that.
1. The proposed Data Center fully complies with every objective performance standard of this Article.
2. The facility will produce no adverse effect on public health, safety, or welfare, including (but not limited to) Sensitive Receptors, historic resources, watershed integrity, grid reliability for residential and critical infrastructure users, or emergency response capabilities.
3. Adequate utility capacity (electric, water, and other relevant services) is secured via a binding written commitment from the provider(s) confirming no reduction in service reliability or capacity for existing Township customers or critical infrastructure.
4. All required mitigation measures-including financial security, land preservation, curtailment agreements, operations and maintenance plans, emergency service provisions, and any other conditions imposed-are enforceable, sufficient to offset demonstrated impacts, and will be implemented and maintained as conditioned for the life of the facility.
5. A written "Ability to Serve" letter has been obtained from local emergency service providers without the need for additional Township-funded equipment or personnel.
6. The proposed Data Center meets the criteria and standards set forth in Section 200-115.E., Public interest criteria, and Section 115.F., General standards.

B. Denial. The Board shall deny a Conditional Use application only if there is Substantial Evidence in the record that:
1. The Applicant has failed to meet one or more of the above criteria;
2. The Applicant has failed to comply with any other applicable provisions of this Article, the Township Zoning Ordinance, Subdivision and Land Development Ordinance (SALDO), or other relevant Township codes and regulations (including general Conditional Use standards under Articles XVII and XVIII); or
3. Unavoidable adverse effects on protected public interests (including but not limited to public

health, safety, welfare, historic integrity, watershed resources, grid reliability, rural character, or Sensitive Receptors) cannot be mitigated to de minimis levels through compliance with this Article and any conditions imposed by the Board.

C. Community Benefits.

1. The Board strongly encourages the Applicant to negotiate in good faith toward execution of a binding Community Benefit Agreement (CBA) with the Township (or community representatives), enforceable via recorded covenant or other mechanism acceptable to the Township. The CBA should address, at a minimum:

2. Tiered Local Hiring Preferences: A voluntary target of at least thirty percent (30%) of construction and long-term operational personnel sourced primarily from Chester County residents.

3. Contributions to the Township's Open Space/Historic Preservation Fund (or equivalent community benefit fund), in amounts commensurate with demonstrated impacts (e.g., annual or one-time payments negotiated based on facility size, MW capacity, ECEIA findings, economic benefit analysis, and any other relevant evidence in the record).

4. The Board shall make written findings of fact regarding the CBA negotiation process and its proportionality to impacts as part of any approval or denial decision.

D. No Vested Right to Nuisance. Compliance with the standards and conditions at the time of approval shall not create a vested right to operate in violation of the performance standards of this Article or any subsequently adopted regulations addressing public health, safety, or welfare.

E. Material Change Review. Any material change to the facility-including but not limited to increases in computing density, electrical load, water consumption, battery storage capacity, generator capacity, changes to cooling technology, or changes to the operating profile-shall require prior review and written approval by the Township to confirm continued compliance with this Article. The Township may require updated studies, analyses, or modeling (including but not limited to Noise, thermal, vibration, traffic, or environmental impact assessments) as reasonably necessary to verify compliance.

F. General Standards. Comprehensive Zoning Compliance: In addition to the specialized objective criteria mandated under this Article, the applicant shall demonstrate unequivocal compliance with all general Conditional Use standards, procedural burdens, and traffic safety metrics set forth by the East Whiteland Township Code.

G. Intent. It is the intent of the Township to permit Data Centers that can fully demonstrate compliance with these standards, recognizing that such facilities are high-impact industrial uses requiring heightened performance controls, mitigation, and ongoing oversight to protect community health, safety, welfare, and resources.

SECTION 16: Operational Transparency

A. Disclosure of Ownership: The Applicant shall disclose the Ultimate Parent Entity (UPE) of the Data Center Operator. Any change in the UPE or the majority ownership of the local operating entity shall be reported to the Township within 30 days.

B. Financial Security (In Lieu of Corporate Guarantee): To ensure that all environmental remediation, decommissioning, and utility obligations are met regardless of the financial status of the local Operator, the Applicant shall provide Financial Security in a form acceptable to the Township Solicitor (e.g.,an Irrevocable Letter of Credit or a Performance Bond backed by a US-based, A-rated surety).

C. Transfer of Ownership: In the event of a transfer of the facility to a new Owner or LLC, the existing Financial Security shall remain in full force and effect, and the successor entity shall provide a replacement bond or security accepted by the Township prior to the transfer of the Certificate of Occupancy. No operational rights shall vest in a successor entity until such security is in place.

SECTION 17. Decommissioning and Financial Security

A. Performance Security.

1. Prior to issuance of any Building permit, the Applicant shall post a cash escrow or irrevocable letter of credit equal to 150% of the estimated gross cost of full demolition, removal of all Structures and equipment (including modular units, concrete pads, substations, battery systems, and any other infrastructure), site restoration to pre-development greenfield condition, and comprehensive soil/groundwater remediation. The 150% figure (excluding salvage value) is intended to account for inflation, environmental remediation, and technology-specific disposal costs. The cost estimate shall:

a. Exclude any salvage value of equipment, materials, or scrap;

b. Be prepared by a qualified professional engineer or estimator approved by the Township Engineer;

c. Be updated annually for inflation, changes in labor/material costs, and technological advancements in decommissioning; and

d. Cover the full gross cost, including but not limited to removal of all foundations, underground utilities, concrete pads, and specialized electrical infrastructure.

2. Additional Requirement. Every 10 years during operation (or upon any material equipment replacement exceeding 25% of installed capacity), the Owner shall prepare and submit to the Township and DEP, if required, an Environmental Site Assessment (at the Applicant's expense) to monitor for contamination (including but not limited to battery electrolytes, dielectric fluids, cooling chemicals, heavy metals, or PFAS from fire-suppression agents). Results shall be submitted to the Township within 60 days of completion. Any detected contamination shall trigger immediate remediation at the Owner's expense and an increase in the bond amount to cover the additional estimated cleanup costs, as determined by the Township Engineer.

B. Reevaluation. The amount of financial security shall be reviewed every 5 years.

C. Abandonment: Twelve (12) consecutive months without operations consistent with use for which the Certificate of Occupancy was issued, shall constitute abandonment, regardless of ongoing maintenance, security, or minimal electrical use. Such abandonment shall authorize, but not require, the Township to use the financial security to restore the site to a pre-development condition. Removal or deactivation of more than 50% of installed computing capacity shall trigger a mandatory review of decommissioning obligations. For purposes of decommissioning, "site restoration" includes the removal of all modular housing, ISO containers, concrete pads, and specialized electrical substations, regardless of whether such items are classified as real or personal property.

SECTION 18. Grid Reliability and Residential Priority

A. Purpose: The purpose of this section is to ensure that the high-density energy consumption of data center infrastructure does not degrade the operational reliability, transient stability, or cost-effectiveness of the regional electrical grid for East Whiteland Township residents, commercial businesses, and critical public safety infrastructure.

B. Mandatory Residential and Emergency Service Priority: As a strict condition of Conditional Use approval, the applicant explicitly acknowledges and agrees that the Township's residential electrical consumers and critical public safety infrastructure—including but not limited to hospitals, volunteer fire stations, emergency communications networks, and municipal water pumping assets—shall maintain absolute, uninterrupted priority over all data center asset operations during any periods of localized or regional grid stress, peak demand, or electrical emergency.

C. Mandatory Load-Shedding Agreement.

1. The Applicant shall provide a fully executed Curtailment Agreement or Load¬ Shedding Contract with the utility provider (e.g., PECO) and/or PJM Interconnection.

2. This agreement must mandate that, upon notification of a "Grid Emergency," "Peak Demand Event," or "Voltage Reductions," the facility shall automatically reduce its electrical draw to a "Maintenance Only" level (not to exceed 10% of nameplate capacity) within 15 minutes.

3. Proof of compliance with load-shedding requests shall be provided to the Township Zoning Officer annually.

D. Emergency Override: The load-shedding and curtailment requirements established in subsection C above may be waived during a declared state or federal emergency if the facility is providing critical services (e.g., emergency communications, disaster response coordination) as certified by the Pennsylvania Emergency Management Agency.

E. Infrastructure Cost Protection.
1. The Applicant shall demonstrate that any upgrades to the transmission system or substations required specifically for the facility are funded 100% by the Applicant.
2. No Data Center-related infrastructure costs shall be subsidized by local Township ratepayers.

F. On-Site Substation Standards. Any new substation required for the facility must be:
1. Located entirely within the primary Building's required Setbacks.
2. Screened by a 100% opaque vegetative buffer and an 8-foot masonry wall to mitigate both visual impact and low-frequency "hum" (See Section 7 for Noise standards).

SECTION 19: Right of Entry and Inspection

A. Right of Entry. The Township Zoning Officer, Fire Marshal, or an appointed third-party engineer shall have the right to request to enter the Premises during reasonable hours to conduct Noise/vibration testing or safety inspections. The Township shall provide 24-hour notice of such inspections when practicable.

B. Emergency and Complaint-Based Inspection. Immediate inspection without notice may occur only where the Township determines that an Imminent Threat to public health or safety exists, or to investigate a verified, active complaint regarding Noise or vibration exceeding the performance standards of this Article.

C. Enforcement and Opportunity to Cure.
1. Notice of Violation: Except in emergency situations involving an Imminent Threat to Life or safety, the Township shall provide written notice of any violation and a reasonable opportunity to cure, which shall not exceed 15 days for noise and/or vibration violations and 48 hours for environmental or safety hazards.
2. Cease and Desist: If a violation is not remediated within the cure period, or if the Operator refuses entry for a mandated inspection, the Zoning Officer is authorized to issue a Cease-and-Desist order.
3. Suspension of Operations: Any order to cease operations shall be limited to the specific non-compliant equipment or subsystem, unless the violation is facility¬ wide or represents an unmitigated threat to the community.

SECTION 20. Administrative Escrow and Consultant Fees.

A. Administrative Escrow Account: The Applicant for a Data Center Conditional Use shall, at the time of application, establish an Administrative Escrow Account with the Township.
1. Purpose: This account shall be used to reimburse the Township for all reasonable expenses incurred for the services of professional consultants-including but not limited to acoustical engineers, hydrogeologists, fire protection engineers, historic preservationists, and legal counsel-to review the application, fact-check studies, and testify at public hearings.
2. Initial Deposit: The Applicant shall provide an initial Administrative Escrow deposit in an amount as established by the Township Fee Schedule as amended. In the absence of a specific entry in the Fee Schedule, the initial deposit shall be $25,000 for a Data Center under 5MW of peak demand, and $50,000 for a Data Center of 5MW or greater. This deposit is for the purpose of ensuring that the Township's professional review costs are not borne by the taxpayers. If the complexity of the Environmental and Community Impact Analysis (ECEIA) results in the escrow balance falling below 25% of the initial deposit, the Applicant shall replenish the account to its original balance within

15 days of notice.

3. Automatic Stay: If the escrow balance falls below 25% of the initial deposit, all reviews and hearings shall be stayed until the Applicant replenishes the account to its original balance.

B. Post-Occupancy Compliance Escrow: Upon issuance of a Certificate of Occupancy, the Administrative Escrow shall be transitioned into a Long-Term Monitoring Escrow. This account shall be maintained at a minimum balance of $25,000 for the life of the facility representing a reasonable estimate of ongoing compliance costs for:

1. Annual Noise and vibration audits.
2. Independent verification of water consumption and discharge reports.
3. Annual Fire Marshal safety inspections.

SECTION 21. Violations and Penalties.

A. Continuous Violations. Each day that a violation continues shall constitute a separate offense. For technical performance standards (noise/water), each distinct 24-hour period of non-compliance shall be documented as a separate violation to the maximum extent permitted by the Pennsylvania Municipalities Planning Code.

B. Fine Schedule. In accordance with Section 617.2 of the Pennsylvania Municipalities Planning Code (MPC), the following penalties shall apply:

1. Civil Penalties: Any person or entity found to have violated the provisions of this Article shall be liable for a civil penalty not to exceed $500 per violation.
2. Continuous Violations: Each day that a violation continues shall constitute a separate violation. For performance standards (Noise, vibration, water), each distinct occurrence or non-compliant equipment unit shall be deemed a separate violation.
3. Recovery of Costs: In addition to the civil penalty, the Owner/Operator shall be liable for all Township costs, including reasonable attorney fees, expert witness fees (acoustical/hydrogeological), and all costs of documentation and enforcement.

C. Reimbursement of Enforcement Costs. The Owner/Operator shall be liable for all costs incurred by the Township for the documentation of violations, including the fees of third-party acoustical engineers, hydrogeologists, or other professional consultants, as well as reasonable attorney fees and court costs as permitted by Section 617.2 of the MPC.

D. Tiered Mitigation and Curtailment Protocols. Upon verification of an exceedance of the operational performance standards (including but not limited to thermal, noise, vibration, EMF/EMC, harmonic distortion, or any other metric related to power consumption and facility operations), the facility Operator shall immediately initiate the following mandatory mitigation sequences:

1. Tier 1: Immediate Load and Operational Reduction. Within two (2) hours of the verified exceedance as reported by the Township-approved monitoring system, the Operator shall implement automated or manual computing load shedding, execute immediate physical or mechanical maintenance, and make such modifications to facility operations as are necessary to bring the applicable compliance metrics back into full compliance.
2. Tier 2: Automatic Facility Curtailment and Physical Remediation. If full compliance is not achieved within four (4) hours of the verified exceedance as reported by the Township-approved monitoring system, the Operator shall automatically curtail facility operations and energy consumption, and/or deploy structural, engineering, or mechanical corrections, as necessary to bring the compliance metrics back into full compliance. As an initial minimum response, if the exceedance cannot be immediately resolved through localized physical or mechanical corrections to the offending equipment, facility operational capacity (measured by computational workload or total power consumption) shall be reduced by not less than fifty percent (50%) of the levels existing immediately prior to the exceedance, or to a lower operational threshold designated by the Township Engineer,

and shall remain curtailed until compliance has been restored. Compliance with this Section shall be based upon the facility's demonstrated performance at the designated compliance boundary or point of utility interconnection and shall not be satisfied by substituting one source of electrical energy for another. The use of emergency generators, battery energy storage systems, alternate utility feeders, distributed energy resources, or other supplemental energy sources shall not be used to maintain computational load or operational capacity while avoiding the required reductions.

3. Tier 3: Cessation of Non-Compliant Systems. If the facility (a) remains non-compliant after twenty-four (24) consecutive hours, or (b) the operations has demonstrated a pattern of "Habitual Non-Compliance," defined as three or more adjudicated violations within any 24-month period, the facility demonstrates a pattern of habitual violations as from the initial verification of exceedance, the Operator shall continue to curtail or cease facility operations to the extent necessary to eliminate the verified non-compliant condition.

If the Operator cannot identify the source or sources responsible for the exceedance, the Operator shall progressively curtail additional facility operations until compliance has been restored. The Operator shall not increase facility operations above the curtailed level until an independent engineering firm certifies in writing that all necessary corrective actions have been executed, calibrated, and successfully tested under operating conditions that reasonably represent the operational capacity and power consumption levels that directly initiated the verified exceedance, as approved by the Township Engineer.

SECTION 22. Limited Purpose of Monitoring.

A. Limited Purpose Monitoring, measurement, testing, or data collection conducted under any provision of this Article is undertaken solely to evaluate compliance with the local land-use performance standards established herein, to protect municipal infrastructure and public safety systems, and to document off-site nuisance conditions affecting neighboring properties. Nothing in this Article shall be construed as an assertion of municipal authority over any matter within the exclusive or primary jurisdiction of a federal or state agency, including but not limited to: (a) public utility transmission or distribution systems, subject to the jurisdiction of the Pennsylvania Public Utility Commission; (b) wholesale power markets or grid reliability standards, subject to the jurisdiction of the Federal Energy Regulatory Commission and the applicable regional transmission organization; (c) radiofrequency device certification, spectrum allocation, or licensed spectrum interference, subject to the exclusive jurisdiction of the Federal Communications Commission; or (d) any other matter otherwise subject to the exclusive or primary jurisdiction of a federal or state agency. The monitoring, testing, and performance-standard provisions of this Article establish independent local land-use and public-safety standards and do not constitute an assertion of authority to enforce federal or state requirements outside the Township's police power.

1. No Duty Created by Monitoring. The Township's collection, review, or retention of monitoring, testing, or measurement data under this Article is a discretionary governmental function performed in furtherance of the Township's general police power. Neither the existence of any provision of this Article, nor the Township's act of monitoring, testing, reviewing, or retaining data pursuant to it, shall be construed to create: (a) a mandatory or non-discretionary duty on the part of the Township to detect, prevent, or remediate any condition; (b) a private right of action against the Township; (c) a special duty owed to any individual property owner or resident distinct from the duty owed to the public generally; or (d) a reasonable reliance interest on which any party may base a claim against the Township for action or inaction. This subsection is intended to preserve all governmental immunity available to the Township under the Pennsylvania Political Subdivision Tort Claims Act, 42 Pa. C.S. § 8541 et seq., and shall be construed to the maximum extent permitted by law to prevent the imposition of liability arising from the discretionary exercise of the monitoring, testing, and enforcement functions described anywhere in this Article, including but not limited to those set forth in Sections 4, 7, 8, 11, 14, 17, and 18.

2. Burden of Compliance and Cure Remains with Operator. Nothing in subsection 1 relieves the Owner

or Operator of its independent obligation to comply with the performance standards established under this Article. The Township's enforcement remedies for any documented violation or exceedance under this Article are limited to those set forth in the applicable subsections of this Article and in Section 21 (Violations and Penalties), including but not limited to administrative notice, mitigation and cure requirements, permit conditions, equipment deactivation, curtailment or load-shedding, escrow-funded remediation, and civil penalties as authorized under the Pennsylvania Municipalities Planning Code. The Township's decision to monitor, test, or audit, or its determination not to pursue enforcement in any particular instance, shall not be construed as a waiver of the Township's authority to enforce any provision of this Article in any subsequent instance.

3. No Duty to Independently Verify Operator Self-Monitoring. Certain provisions of this Article require the Owner or Operator to monitor its own operations, maintain records, and report exceedances or violations to the Township within a specified time. The Township's receipt, review, or non-review of any such Operator-generated report or record is a discretionary governmental function and shall not be construed to create any duty on the part of the Township to independently verify, audit, or confirm the accuracy, completeness, or timeliness of any Operator self-monitoring or self-reporting. Neither the Township's reliance on Operator self-reporting, nor its acceptance of Operator-maintained records without independent verification, shall create any liability on the part of the Township for the Owner's or Operator's failure to accurately monitor, timely report, or fully disclose any exceedance or violation, and nothing in this subsection shall diminish the Owner's or Operator's own liability for any such failure.

SECTION III. Severability.

A. Severability. It is the express intention of the Board of Supervisors that the provisions of this Article be severable. If any section, subsection, sentence, clause, phrase, or specific performance metric (including but not limited to decibel limits, Setback distances, or fee amounts) is for any reason held to be unconstitutional, illegal, or invalid by a court of competent jurisdiction, such decision shall not affect or impair the validity of any of the remaining provisions of this Article. In addition, the standards herein are adopted pursuant to the Township's police powers under the Pennsylvania Municipalities Planning Code. In particular, if any fee, escrow requirement, or mitigation amount is held to be excessive or not roughly proportional to documented impacts, the reviewing court is encouraged to reduce such requirement to a permissible level rather than invalidate the requirement entirely.

B. Savings Clause. The amendment of the East Whiteland Township Zoning Code by this Article shall not affect any act done, any right accrued, any duty imposed, any penalty incurred, or any legal proceeding commenced or pending under the Zoning Code prior to the effective date of this amendment.

C. Presumption of Validity. In the event of a "Substantive Validity Challenge" filed pursuant to the Pennsylvania Municipalities Planning Code (MPC), the burden of proof shall remain upon the challenger to demonstrate that the specific performance standards herein are not rationally related to the protection of the public health, safety, and welfare of the residents of East Whiteland Township.

D. Police Powers Reserved. Nothing in this Article shall be construed to be preempted by, or in conflict with, state or federal law where this Article imposes requirements that are more protective of public health, safety, or welfare and are within the Township's police powers under the Pennsylvania Municipalities Planning Code.

SECTION IV. REPEALER.
All ordinances, resolutions or parts of ordinances or resolutions directly inconsistent with any provision of this Ordinance are hereby repealed to the extent of such inconsistencies only.

SECTION V. EFFECTIVE DATE.

This Ordinance shall become effective immediately upon adoption.

ENACTED and **ORDAINED** by the Board of Supervisors this ___ day of September 2026.

BOARD OF SUPERVISORS
EAST WHITELAND TOWNSHIP
ATTEST: **CHESTER COUNTY, PENNSYLVANIA**

By: _____ By: _____
Steve Brown Scott Lambert
Township Manager

By: _____
Peter Fixler

By: _____
Clinton Smith