NORTH LEBANON TOWNSHIP
LEBANON COUNTY, PENNSYLVANIA

ORDINANCE NO. 3 – 2026

AN ORDINANCE OF NORTH LEBANON TOWNSHIP, LEBANON COUNTY, PENNSYLVANIA, TO AMEND THE CODE OF ORDINANCES OF THE TOWNSHIP OF NORTH LEBANON TO DEFINE AND ADD SPECIFIC REQUIREMENTS FOR DATA CENTERS AND DATA CENTER ACCESSORY USES AND TO AMEND CERTAIN PROVISIONS OF THE INDUSTRIAL ZONING DISTRICT TO SPECIFY CONDITIONAL USES.

WHEREAS, Article VI of the Pennsylvania Municipalities Planning Code, 53 P.S. § 10601, *et seq.*, authorizes the Township of North Lebanon to enact, amend and repeal Zoning Ordinances within the Township; and

WHEREAS, the Board of Supervisors of North Lebanon Township deems it to be in the best interest and general welfare of the residents of the Township to update and amend provisions of the North Lebanon Township Zoning Ordinance to provide for and regulate Data Centers and Data Center Accessory Uses; and

WHEREAS, the Board of Supervisors of North Lebanon Township desires to add provisions to the Zoning Ordinance relating to Data Centers and Data Center Accessory Uses;

NOW, THEREFORE, BE IT ORDAINED AND ENACTED, by the Board of Supervisors of North Lebanon Township as follows:

SECTION 1. Chapter 27, Part 1 of the Code of Ordinances of the Township of North Lebanon, entitled Definitions, is amended to add the following definitions to § 27-102. Specific Definitions:

> **Data Center:** A building or buildings which are occupied primarily by computers and/or telecommunications and related equipment where digital information is processed, transferred and/or stored, primarily to and from offsite locations. This use shall also include cryptocurrency mining, blockchain transaction processing, server farms, global financial system cloud services, machine learning, artificial intelligence, quantum computing, or similar uses. This use does not include computers or telecommunications related

equipment that is secondary and customarily incidental to an otherwise permitted use on the property, such as servers associated with an office building. A Data Center may include Data Center Accessory Uses.

Data Center Accessory Use: Ancillary uses or structures secondary and incidental to a Data Center use, including but not limited to: administrative, logistical, fiber optic, storage, and security buildings or structures; sources of electrical power such as generators used to provide temporary power when the main source of power is interrupted; electrical substations; utility lines; domestic and non-contact cooling water and wastewater treatment facilities; water holding facilities; pump stations; water towers; environmental controls (air conditioning or cooling towers, fire suppression, and related equipment); security features, provided such data center accessory uses/structures are located on the same tract or assemblage of adjacent parcels developed as a unified development with a Data Center. The use shall not include energy generation systems used or intended to be used to supply power to the Data Center during normal operations; such energy generation systems shall be considered a principal use.

Data center operator: The person or entity responsible for the post-construction operation of a data center.

Sensitive receptor: Any residential use, school, preschool, child or adult day-care center, hospital, assisted-living facility, long term care facility, nursing home, personal care home, retirement community, treatment center, community center, place of worship, park (excluding trails), campground, or dormitory.

Sustainable yield: The amount of ground water that can be safely withdrawn from an aquifer annually without producing an undesirable result. Undesirable results include, but are not limited to, depletion of groundwater storage, the intrusion of water of undesirable quality, the contravention of existing water rights, excessive depletion of surface waters by induced infiltration, and land subsidence.

SECTION 2. Chapter 27, Part 10 of the Code of Ordinances of the Township of North Lebanon, entitled I-1 Industrial Districts, is amended to add the following Section:

§ 27-1003. Conditional Uses.

1. Upon approval by the Board of Supervisors of North Lebanon Township, solar farms and other solar energy systems or wind energy conversion systems installed for the commercial production, distribution, or sale of energy or other off-site distribution shall be a permitted as a conditional use, provided that the applicable requirements and conditions set forth in Chapter 27, Part 13, Environmental Improvements and Energy Conservation Requirements, § 27-1306, are met, along with any other reasonable conditions and safeguards that may be imposed by the Board of Supervisors as deemed necessary to implement the purposes of this chapter.

2. Upon approval by the Board of Supervisors of North Lebanon Township, data centers and data center accessory uses shall be a permitted as a conditional use, provided that the applicable requirements and conditions set forth in Chapter 27, Part 13, Environmental Improvements and Energy Conservation Requirements, and Chapter 27, Part 12, Supplementary District Regulations, § 27-1233, are met, along with any other reasonable conditions and safeguards that may be imposed by the Board of Supervisors as deemed necessary to implement the purposes of this chapter.

SECTION 3. Sections 27-1003 through 27-1007 shall be renumbered as Sections 27-1004 through 27-1008, to accommodate the inclusion of new Section 27-1003 as set forth in Section 2 of this Ordinance.

SECTION 4. Chapter 27, Part 12 (Supplementary District Regulations) is amended to add Section 27-1233, Data Centers and Data Center Accessory Uses, as follows:

§ 27-1233. Data Centers and Data Center Accessory Uses.

A. Data Centers shall be permitted by Conditional Use in the I-1 Industrial Zoning District when approved in compliance with the procedures, standards, and criteria contained in this section.

B. **Aesthetic Requirements.** Data Centers shall meet the following requirements to reduce visual impacts:

    1. Principal building facades shall require a horizontal offset of at least ten feet at intervals of no more than 150 linear feet (measured horizontally) of principal building facade.

2. No more than 80 percent of a principal building facade may consist of one building material.
3. No more than 80 percent of a principal building facade may consist of one color, texture, or pattern.
4. Principal building facades shall require fenestration, step-back(s), cantilever(s), projection(s), or architectural elements extending horizontally across at least 60 percent of the facade.
5. Each principal building shall include an articulated main entrance. This entrance shall be differentiated from the rest of the building with a change in building material, pattern, texture, color, or architectural accent. It shall also either project or be recessed from the adjoining building plane.
6. Elevations/renderings of all principal building facades visible from off-site shall be submitted with the conditional use application.

C. **Dimensional Standards.** The dimensional standards of Data Centers and Data Center Accessory Uses shall be in accordance with the standards set forth for the I-1 Industrial Zoning District, with the following exceptions:

1. The minimum lot area shall be twenty (20) acres for Data Centers consisting of 100,000 square feet or less and limited to two (2) stories, not to exceed (thirty-five) 35 feet in height, plus up to ten (10) additional feet for roof-mounted equipment. The minimum lot area for all other Data Centers shall be forty (40) acres, with a maximum lot acreage of seventy-five (75) acres.
2. The maximum building height for a Data Center shall be forty-five (45) feet, plus up to fifteen (15) additional feet for roof-mounted equipment such as cooling and ventilation systems, HVAC units, and cooling towers.
3. The maximum height of Data Center Accessory Uses shall be no greater than the height of the principal building, exclusive of roof-mounted equipment.
4. Data Centers and Data Center Accessory Uses shall be set back a minimum of three hundred fifty (350) feet from the boundary of all adjoining property lines and road rights-of-way, except as specified in Paragraph C.5. of this Section.
5. Data Centers and Data Center Accessory Uses shall be set back a minimum of one thousand (1,000) feet from any property within the R-1, R-2, or R-R Zoning District, or the lot line of any property developed with a Sensitive Receptor.

D. **Landscape Buffer; Fencing.** A landscape buffer is required between Data Centers and Data Center Accessory uses and any adjoining residential zoning district, Sensitive Receptor, or public roadway. The landscape buffer

shall comply with the following requirements:

1. The landscape buffer shall be at least one hundred (100) feet in width and may be part of the minimum setback distance.
2. The landscape buffer shall be free of structures, dumpsters, storage or display areas, signs, materials, loading or unloading areas, and vehicle parking.
3. The landscape buffer shall include plantings to achieve a dense, opaque, four-season screen and shall consist of native species planted as follows:
    a. One (1) large evergreen tree per 25 linear feet of buffer. The size of large evergreen trees shall be a minimum of eight (8) feet in height at the time of planting.
    b. One (1) deciduous canopy (shade) tree per 75 linear feet of buffer. Size of canopy (shade) trees shall be a minimum of 2½ inch caliper at the time of planting.
    c. One ornamental/flowering tree per 50 linear feet of buffer. The size of ornamental/flowering trees shall be a minimum of eight (8) feet in height for multi-stemmed varieties, or 2½ inch caliper at the time of planting for single-stemmed varieties.
    d. Five (5) shrubs per 25 linear feet of buffer. Size of shrubs shall be fully branched and minimum of three feet in height at the time of planting. Shrubs shall be a combination of evergreen and deciduous species, with a minimum of 50% being evergreen.
4. All plantings shall conform to the standards of North Lebanon Township's list of acceptable plant species, or shall be approved by the Board of Supervisors upon recommendation by the Township Engineer, and/or Pennsylvania-registered landscape architect, or certified arborist.
5. A variety of species shall be used in order to prevent monocultural plantings. American arborvitae and similar weak-stem plants shall not be used to meet the buffer yard requirements. If more than 20 evergreen plants are proposed, no more than 50% shall be of one species.
6. A monotonous straight row of the same species shall not be permitted. A more naturalistic form of planting with a mix of species shall be provided.
7. In the event that existing topography and/or vegetation is adequate to meet the intent of the required buffer yard, such existing topography and/or vegetation may constitute all or part of the required buffer yard.
8. All buffer yard plantings shall be perpetually maintained by the property owner. Any plant material that dies, is removed, is diseased, or is severely damaged shall be replaced by the current property owner, on a one-to-one basis, as soon as is practical considering growing seasons,

within a maximum of 150 days.

9. All buffer yard screening shall be assured by a performance guarantee posted with North Lebanon Township in an amount equal to the estimated cost of all such trees, shrubs, plantings, and installation. Such guarantee shall be released only after passage of the second growing season following planting.
10. Fencing of the property is permitted, provided that fencing along public and private roadways is not chain-link, with or without slatted inserts, and does not include barbed wire or other similarly visibly intrusive deterrence device. An applicant shall not be required to comply with this requirement if fencing is fully screened from view by one or more of the means identified in subparagraph 1 above.

E. **Equipment Screening.**

1. To provide visual screening and reduce noise levels, ground-mounted and roof-mounted equipment used for cooling, ventilating, or otherwise operating the facility, including backup power generation equipment, must be fully enclosed, except where not mechanically feasible based on the manufacturer's specifications. If it is not mechanically feasible to fully enclose the equipment, it must be fully screened from view using one or more of the following means:
    a. The landscape buffer required by subsection (C) above.
    b. By existing vegetation that will remain on the property.
    c. By the principal Data Center building or an accessory building
    d. A berm averaging a minimum of five (5) feet in height above the adjacent average ground level with a maximum side slope of 3:1, provided that the berm shall be covered by a well-maintained all season natural ground cover and any required screening plantings shall be arranged on the outside and top of the berm.
    e. A visually solid fence, screen wall or panel, parapet wall, or other visually solid screen that shall be constructed of materials compatible with those used in the exterior construction of the principal building.

F. Noise and Vibration.

1. No Data Center or Data Center Accessory Use, or any combination of Data Center and Data Center Accessory Uses developed as part of a unified development, shall cause or contribute to sound levels in violation of the standards established by this section. Where there is a conflict between this section and any other section of this chapter, the provisions of this section shall apply.

2. **Definitions.** The following definitions shall apply to this section:

   a. **A-weighted fast response maximum sound level (L_{MAX}).** The maximum sound pressure level in decibels (dB) measured over a given period of time, with A-frequency weighting and fast response time-weighting applied.

   b. **Compliance metric:** L_{EQ}, L_{MAX}, L_{PK}, or L_{PTL}.

   c. **Daytime Hours:** the hours between 7:00 am and 6:00 pm on weekdays and between 9:00 am and 6:00 pm on weekends and holidays

   d. **Equivalent continuous sound level (L_{EQ}).** The steady sound pressure level in decibels (dB) which, over a given period of time, has the same total energy as the fluctuating noise measured over the same period of time.

   e. **Evening Hours:** the hours between 6:00 pm and 10:00 pm

   f. **Log Average Level (LAL_{xx}):** The logarithmic average of the interval measurements of a compliance metric computed as follows:

$$LAL_{xx} = 10 \log_{10} \left[\frac{1}{nP_o^2} \sum_{k=1}^{n} P_o^2 \, 10^{L_{xk}/10} \right]$$

$$= 10 \log_{10} \left[\left\{ 10^{\frac{L_{x1}}{10}} + 10^{\frac{L_{x2}}{10}} \ldots 10^{\frac{L_{xn}}{10}} \right\} / n \right]$$

   Where:

   LAL_{xx} = log average level in dBA or dB where L_{xx} represents either L_{EQ}, L_{MAX}, L_{PK}, or L_{PTL}.
   L_{x1} = level of the first interval measurement in dBA or dB L_{x2} = level of the second interval measurement in dBA or dB L_{xn} = level of the n^{th} interval measurement in dBA or dB
   n = the number of measurement intervals
   P_0 = standard reference pressure of 20 micro pascals

   A minimum of 20 intervals of one minute each measured over a single period of 24 hours shall be used, however, intervals need not be contiguous. Intervals with louder, and preferably the loudest noise, should be used.

   g. **Natural Environmental Sounds:** Environmental sounds that are inherent to the area and due to naturally occurring sounds such as insects, rustling leaves, wind, wild birds, wild animals, frogs, rain, lightning, or weather, but not including the noise of domesticated animals.

   h. **Normal Community Sound:** Sound that is inherent to and consistent with the norms of the community and which the average

resident would reasonably expect to occur in their community. Normal Community Sound may include, but is not limited to, children playing, occasional dog barks, domestic power tools, residential HVAC equipment, and reasonable transportation sounds that meet state, federal, and local noise requirements and limits.

i. **Nighttime Hours:** the hours between 10:00 pm and 7:00 am on weekdays and between 10:00 pm and 9:00 am on weekends and holidays.

j. **Pure tone:** A sound occurring at a discrete frequency as determined by a Fast Fourier Transform measurement (narrow band analysis) of a sound using a dynamic analyzer with at least 1 Hz and preferable 1/8 Hz resolution, a Hanning window, and sufficient averaging to determine the magnitude of the pure tone level that is exceeded 5% of the time (i.e. an exceedance rate of L_5).

k. **Pure Tone Level (L_{PTL}).** The magnitude in decibels (dB) of a pure tone, with no weighting applied.

l. **Receiving Property:** Real property impacted by noise generated by a Data Center and/or Data Center Accessory Uses. A Receiving Property need not be directly adjacent to the parcel or collection of parcels on which the Data Center or Data Center Accessory Use(s) are located but shall not include any real property incorporated as part of a unified design with the Data Center whose compliance is being evaluated.

m. **Un-weighted peak sound pressure level (L_{PK}).** The maximum instantaneous sound pressure level in decibels (dB) that occurs during a stated time interval, with no weighting applied.

3. **Sound level limits.**

a. For purposes of compliance with this subsection, sound shall be measured at the point, at any elevation, on the Receiving Property where the Log Average Level of the relevant Compliance Metric is highest.

b. LAL_{EQ} shall not exceed the following values:

Table 1: Equivalent Continuous Sound Level (L_{EQ}) Limits			
Zoning District	**Daytime hours**	**Evening hours**	**Nighttime hours**
Agricultural, Intensive Agricultural, Rural Residential, Low-Density Residential Districts, Properties containing Sensitive Receptors	50 dB	45 dB	40 dB
High-Density Residential District and Municipal Recreation District	55 dB	50 dB	45 dB
Commercial and Industrial Districts	60 dB	55 dB	50 dB

c. LAL_{MAX} shall not exceed the decibel value of the Equivalent Continuous Sound Level (L_{EQ}) for the zoning district and time of day, as provided in Table 1, by more than 10 dB.

d. LAL_{PK} shall not exceed the decibel value of the Equivalent Continuous Sound Level (L_{EQ}) for the zoning district and time of day, as provided in Table 1, by more than 20 dB.

e. All LAL_{PTLs} shall be at least 10 dB below the nominal PTLxx curve at the corresponding frequency, as set forth in Table 2 below, where the value represented by "xx" is the L_{EQ} limit (in dB) set forth in Table 1 for the appropriate zoning district and time of day. Where the applicable L_{EQ} limit is not a multiple of 5, the PTL curve corresponding to the next highest 5 dB increment shall be used; interpolation between PTL curves is not permitted.

   Each identified pure tone shall be evaluated independently, and where more than one pure tone is present, compliance shall be determined separately for each tone. Logarithmic averaging of tonal levels across frequencies shall not be used.

Table 2: Maximum allowable LAL_{PTL} in dB by Tone Frequency and L_{EQ} limit										
	Octave Band Frequency (Hz) of Pure Tone									
PTLxx curve	**16**	**32**	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**
PTL70	101	96	91	86	81	76	72	68	64	60
PTL65	96	91	86	81	76	71	67	63	59	55
PTL60	91	86	81	76	71	66	62	58	54	50
PTL55	86	81	76	71	66	61	57	53	49	45
PTL50	81	76	71	66	61	56	53	48	44	40
PTL45	79	74	68	62	56	51	47	43	39	35
PTL40	78	71	64	58	51	46	42	38	34	30
PTL35	76	69	61	54	46	41	37	33	29	25
PTL30	74	66	58	49	41	36	32	28	24	20
PTL25	73	64	54	45	36	31	27	23	19	15
PTL20	71	61	51	41	31	26	22	18	14	10
PTL15	69	59	48	37	26	21	17	13	9	5
PTL10	68	56	44	33	21	16	12	8	4	0

4. **Exceptions.** The above sound level limits do not apply to sound originating from:
   a. Motor vehicles operated legally and in compliance with the noise regulations of the Pennsylvania Department of Transportation
   b. Safety and protective devices where noise suppression would defeat the safety intent of the device when being used for its intended purpose
   c. Any device intended to provide public warning of potentially hazardous, emergency, or illegal activities such as commercial, residential, or vehicle burglar alarms; back-up signals on regulated and licensed motor vehicles; fire alarms; law enforcement and fire vehicles, and similar devices
   d. Emergency equipment and emergency work necessary in the interest of public health, safety, or welfare or law enforcement
   e. Emergency standby generators during emergency use. Routine testing of generators shall comply with the sound level limits unless such testing occurs between 7:00 am and 6:00 pm on weekdays and between 9:00 am and 6:00 pm on weekends and holidays, during

which time generators may exceed the sound level limits by no more than 20 dBA (20 dB for L_{PK}) for up to one (1) cumulative hour per seven (7) calendar day period.

f. Construction noise, including site preparation, assembly, erection, demolition, substantial repair, maintenance, alteration or similar action for structures or other site improvements, provided that such construction occurs during Daytime Hours and that reasonable noise controls such as proper muffling of all engines, motors, or turbine-driven equipment, and pneumatic devices; noise enclosed air compressors and generators; sound barriers; and lagging are employed.

5. **Measurement**

   a. Terminology and measurement practices shall follow applicable ANSI S1 & S12 standards. Compliance measurements shall be made using a calibrated ANSI Type 1 or Type 2 integrating sound level meter with a dynamic range of at least 60 dB. For each measurement, the signal-to-noise ratio shall be at least10 dB.

   b. The contribution of wind noise to each compliance measurement shall not exceed 5 dBA (or dB). Measurements shall be made with properly installed windscreens, and any measurement influenced by wind noise exceeding this limit shall be discarded or repeated under acceptable conditions.

   c. Measurements shall exclude significant effects of Natural Environmental Sounds and Normal Community Sounds. The signal-to-noise ratio of the combined effect of Natural Environmental Sounds and Normal Community Sounds shall be at least 5 dBA (or dB) and preferably at least 10 dBA (or dB).

   d. Impact or impulse-type sounds shall be measured with the un-weighted Peak Sound Pressure Level (L_{PK}) using a meter specifically designed for peak measurements and conforming to the applicable ANSI S1 standards. RMS (root mean square) measurements using the "fast" response setting or any legacy "impulse" function shall not be used.

6. **Vibration.** No source of mechanical vibration or acoustically induced vibration shall cause or induce vibration on any property or in any structure (ground-borne or structural vibration) that exceeds the ISO 2631-2 Residential Day criteria. Vibration shall be measured as particle velocity in any one-third octave band and shall not exceed 200 μm/s RMS in any band.

7. **Sound and vibration study.** The applicant shall demonstrate through a sound study conducted by a professional acoustical expert that the sound and vibration generated by a Data Center and/or Data Center

Accessory Uses comply with the requirements of this section. The sound study shall be conducted using generally accepted methodology in the following phases:

a. A pre-construction sound modeling study shall be conducted to demonstrate that the proposed use will comply with applicable noise requirements of this section. The sound modeling shall be performed according to ISO 9613-2 series methods or other generally accepted engineering methods for outdoor sound propagation. All significant noise sources associated with the proposed Data Center and Data Center Accessory Uses(s) shall be included. The sound modeling study shall be submitted with the conditional use application.

b. The pre-construction study shall establish baseline ambient noise and vibration levels and shall include different times of day. The noise study shall include a narrative describing anticipated operational impacts to sound levels and it shall include an octave band analysis. The noise study shall account for any proposed electrical substations, onsite power generation facilities, and other data center accessory uses that may generate noise.

c. A post-construction as-built sound study shall be conducted six (6) months after issuance of the certificate of occupancy and prior to the final escrow release for any land development phase. An as-built sound study may also be required thereafter by the Township. If it is determined by the as-built sound study that there is a violation of the aforesaid noise limits, it shall be considered a violation of this Ordinance. If the as-built sound study indicates noise levels exceeding the limits set forth in this Section, remediation measures must be implemented within thirty (30) days to bring the noise levels within compliance limits. If there is a violation, an additional as-built sound study must be conducted following the implementation of remediation measures and again six (6) months later, and at any additional periods deemed necessary by the Township in its sole discretion.

d. If the pre-construction Noise Study establishes a baseline ambient noise level in excess of the maximum sound level permitted under this Chapter, the Post-Construction Study shall demonstrate that operations of the proposed use do not materially increase the baseline ambient noise level as measured at the property line.

e. Noise mitigation measures may be required by the zoning officer when noise studies show that the use is generating noise approaching established limits.

G. **Water Supply – Water Feasibility Study.** No Data Center shall be approved unless the applicant demonstrates that there is an adequate supply of water for the proposed use and that proposed water withdrawals

and discharges will not endanger or adversely affect the quantity or quality of groundwater supplies or surface waters in the vicinity.

1. **Must use public water supply if available.** No principal use on a data center site shall use private groundwater wells or direct withdrawals from surface watercourses as its primary source of water for cooling purposes if a public water source is available.
2. **Closed-loop system required.** Data centers shall be designed to include a closed-loop water circulation system to cool data center processing equipment. An applicant may propose an alternative cooling system that can be demonstrated to use less water and energy than closed-loop systems to the satisfaction of the municipal engineer.
3. **Public water supply.** If the use will be served by a public water supply, the applicant shall submit documentation from the public authority certifying that the public authority will supply the water needed.
4. **River basin commission approval**. If the use is to rely upon nonpublic sources of water and satisfies either of the below conditions, the applicant shall provide proof of review and approval from the Delaware or Susquehanna River Basin Commission, as applicable, and shall not be required to provide an additional water feasibility study.
    a. Water withdrawals of 100,000 gallons per day (gpd) or more over a 30-day average from any source or combination of sources within the Delaware or Susquehanna River Basin, as applicable; or
    b. Any consumptive water use of 20,000 gpd or more over a 30-day average from any water source.
5. **Water Feasibility Study.** If the use is to rely upon a nonpublic groundwater source, or is to rely on surface water withdrawal, the applicant shall provide a water feasibility study prepared by a qualified professional. The purpose of the water feasibility study is to determine if there is an adequate supply of water for the proposed use and to estimate the impact of the use on existing wells, groundwater, and surface waters in the vicinity.
6. **Contents of water feasibility study.** The water feasibility study shall include the following information at a minimum:
    a. The projected water demands of the Data Center, including both average and peak daily consumption;
    b. The source of water to be used;
    c. A description of how water will be used, including the amount

or proportion of water to be used for each purpose (e.g. cooling, humidity control, fire suppression, and domestic usage);

d. A description of the amount or portion of water withdrawn that will be recycled or discharged and by what means and at what temperature;

e. A topographic and geologic map of the area with a radius of at least one (1) mile from the site including;

   i. The location of all existing and proposed wells within 3,000 feet of the property boundary, or, in the case of an assemblage of parcels, 3,000 feet of the exterior lines of the assemblage of parcels, including test wells and monitoring wells, with a notation of the capacity of all high-yield wells. This distance shall be increased to encompass the diversion and recharge areas of the proposed groundwater source if the hydrological setting analysis required by subsection (5)(a) below indicates either area will extend beyond 3,000 feet from the property boundary;

   ii. The location of all existing and proposed on-lot sewage disposal systems as well as all sewage treatment system surface water discharges;

   iii. The location of all surface waters, including perennial and intermittent streams, rivers, lakes, reservoirs, ponds, wetlands, springs, natural seeps, and estuaries and the use classification thereof (Cold Water Fishes, High Quality, Exceptional Value, etc.), if applicable, as set forth in Chapters 93 and 105 of Title 25 of the Pennsylvania Code, and all known point sources of pollution;

   iv. A determination of the long-term safe yield of the water source;

   v. A determination that the proposed water supply system poses no adverse impacts on the quantity and quality of water in nearby wells, streams, and the groundwater table;

   vi. Identification of how water will be recycled, treated, or released into surrounding water bodies;

   vii. Any known or potential habitats for threatened or endangered species; and;

   viii. The information applicable to groundwater withdrawals or surface water withdrawals, as appropriate, as required by subsections (7) and (8), below.

   ix. A statement of the qualifications and the signature(s) of

the person(s) preparing the study.

7. **Groundwater withdrawals.** For groundwater sources, the water feasibility study shall include a hydrogeologic report prepared by a registered professional geologist licensed by the Commonwealth of Pennsylvania analyzing the long-term sustainable yield of the water source. The hydrogeologic report shall include:

    a. A hydrological setting analysis which includes a hydrogeologic cross section, delineation of the portion of the aquifer through which water is diverted to the well (area of diversion), delineation of the area providing groundwater recharge to the diversion area (recharge area), and identification of water resources located within the diversion and recharge areas.

    b. The results of an aquifer test conducted in accordance with Pennsylvania Department of Environmental Protection, Bureau of Safe Drinking Water, Document No. 394-2125-001, *Aquifer Testing Guidance for Public Water Systems*, or other generally accepted methodology. Data shall include, at a minimum, precipitation data, static water levels immediately prior to yield testing, linear hydrographs of water levels and test responses of all monitoring points through background, testing, and recovery monitoring periods, residual drawdown graphs and logarithmic hydrographs of the production well and any monitoring points that had observable drawdown as a result of operating the production well. Field notes showing original observations, water levels and flow readings and the time readings were taken shall be included.

    c. Analysis and interpretation of the aquifer test data, including a determination of the aquifer's hydraulic conductivity and specific capacity; aquifer transmissivity and storage coefficient; estimation of the horizontal extent of the cone of depression; and determination of a safe yield for the well, including analysis of the effects of 180 days of pumping with no recharge; and a groundwater availability analysis providing potential availability in a one-in-ten year drought.

    d. Test results from any wells tested in accordance with Section H, below.

    e. A determination of the effects of the proposed withdrawal on the quantity and quality of water in wells, surface waters, and the groundwater table within the horizontal extent of the cone of depression and how those impacts will be mitigated or remediated.

8. **Surface water withdrawals.** See Zoning Ordinance Appendix B - Surface Water Withdrawal Standards

9. **Drought response plan.** The applicant shall provide a drought response plan to demonstrate compliance with state, water supplier, and local drought declaration requirements.

10. **Wastewater disposal analysis.** The applicant shall provide a wastewater disposal analysis as follows:

    a. The applicant shall submit an analysis of wastewater disposal needs to either a public sewer system or private system, indicating the quantity of wastewater generation expected. Wastewater shall include sewage and water discharged as part of the data center's HVAC system.

    b. Any untreated wastewater generated is prohibited to be discharged to stormwater systems or surface waters.

    c. If wastewater will be conveyed and/or treated by a public system, the applicant shall submit documentation certified by the public authority that the public authority can support the conveyance and treatment needed.

    d. If the data center is to rely upon a private system of wastewater disposal, a wastewater feasibility study shall be required. The purpose of the study is to determine if there is an adequate capacity to dispose of wastewater and that the disposal technique does not pose adverse impacts on surrounding water bodies. A wastewater feasibility study shall include the following information at a minimum:

        i. Calculations of the projected wastewater generation including the sources of wastewater.

        ii. A geologic map of the area with a radius of at least one mile from the site property boundary.

        iii. The location of all existing and proposed wells within 1,000 feet of the property boundary, with reference to the capacity of all high-yield wells.

        iv. The location of all surface waters within 1,000 feet of the property boundary and all known point sources of pollution.

        v. Identification of the process by which water will be recycled or released into surrounding water bodies.

        vi. A determination that the proposed wastewater disposal system has no adverse impact on the quantity and quality of water in nearby wells, surface waters, and the groundwater table.

        vii. A statement of the qualifications and the signature(s) of the person(s) preparing the study.

H. **Water Supply – Pre-construction well testing.**

1. If the use is to rely upon a nonpublic groundwater source and will withdraw and/or discharge an average of 10,000 gallons per day (gpd) or more over any consecutive 30-day period, the applicant shall notify each property owner within 3,000 feet of the property boundary or within the horizontal extent of the any production well's cone of depression, as determined by the hydrogeologic study, whichever is greater, of the proposed project and shall offer to test the owner's well for baseline water quality, total depth of the well, static water level and operating pumping water level.
2. If the property owner grants permission to allow for water quality and well testing, the applicant shall hire and pay the full cost of a certified lab and professional geologist with a focus on hydrogeology to collect the laboratory samples and well information. Alternatively, the property owner may elect to hire a certified lab and professional geologist of his own choosing to collect the laboratory samples and well information, in which case the applicant shall pay the full cost of such services.
3. Notifications shall be sent via certified mail, shall include the name and contact information of the person to whom to respond, and shall allow sufficient time for property owners to respond and for testing to be conducted prior to commencement of the constant-rate aquifer test.
4. The applicant shall include all test results obtained pursuant to this section in the water feasibility study.

I. **Water Supply – Post-construction monitoring and reporting.**

1. For purposes of this section, area of influence (AOI) shall mean the greater of the horizontal extent of the production well(s)' cone of depression, as determined by the hydrogeologic report, or the area within 3,000 feet of the property boundary of the proposed project, or, in the case of an assemblage of parcels, within 3,000 feet of the exterior lines of the assemblage of parcels.
2. **Groundwater monitoring plan.** The applicant shall submit a Groundwater Monitoring Plan prepared by a professional licensed hydrogeologist with expertise in groundwater resource planning and management or another qualified professional or professionals approved by North Lebanon Township. The Groundwater Monitoring Plan shall include:
    a. An inventory of existing wells, springs, and other groundwater resources within the AOI, including information on the location, ownership, depth to water, and usage for all wells;
    b. Description of a groundwater monitoring system that ensures accurate characterization of groundwater flow, groundwater quantity and quality, and flow systems within the AOI. The system shall consist of the following at a minimum:

i. At least one monitoring well at a point hydraulically upgradient from the point(s) of withdrawal in the direction of increasing static head that is capable of providing representative data of groundwater not affected by the facility, except when the facility occupies the most upgradient position in the flow system. In that case, sufficient downgradient monitoring wells shall be placed to determine the extent of adverse effects on groundwater from the facility; and

ii. At least three monitoring wells at points hydraulically downgradient in the direction of decreasing static head from the point(s) of withdrawal.

c. Benchmark data collected prior to commencement of water withdrawal against which the impact of the water withdrawal may be compared in the future. Benchmark data shall include groundwater levels in all monitoring wells recorded as a distance from the elevation at the well head referenced to mean sea level based on United States Geological Survey datum.

d. Any additional information North Lebanon Township deems necessary to effectively assess the impact of the proposed development on groundwater supplies.

3. **Inspection of wells.** The Data Center Operator shall inspect monitoring wells, including water level loggers, at least monthly to ensure that they are not damaged and are functioning properly. If a damaged or malfunctioning well is identified, the Township shall be contacted immediately in writing, and the well shall be restored to its design specifications within two weeks, unless weather conditions do not permit and/or this period is extended in writing by the Township. In the event that the water table falls below the bottom of a monitoring well and the water level logger in that well becomes inoperable, the well shall be inspected at a minimum of once every two weeks and the data logger shall be re-installed once the water table is again observed in the well.

4. **Reporting.** The Data Center Operator shall submit to the Township quarterly reports on forms and in a manner prescribed by the Township. Reports shall include the following:

a. The quantity of all withdrawals, measured by means of a continuous-recording device, flow meter, or other method accurate to within 5% of actual flow, on a daily basis or such other frequency as may be approved by the Township;

b. Groundwater levels at all monitoring wells; measured on a daily

basis or such other frequency as may be approved by the Township;

c. Precipitation data, measured on a daily basis or such other frequency as may be approved by the Township;

d. Certification of the accuracy of all measuring devices and methods to within 5% of actual flow;

e. Any loss of measuring or recording capabilities that occurred during the reporting period;

f. A running comparison of monitoring data comparing the data for the recording period to the data for the same period in each of the previous five years;

g. Any additional information North Lebanon Township deems necessary to determine whether the data center's water withdrawal adversely impacts water supply.

J. **Adverse Groundwater Impacts; Presumptions; Hearing.**

1. **Adverse Impacts.** The Data Center shall not cause an adverse impact to the water rights or water supply of others, including, but not limited to, by reducing the existing rate of flow of wells, causing contamination of wells, or depleting surface water resources of surrounding properties.

2. **Process for Complaints.**

a. Any owner of a well or other person who believes a Data Center in the Township has caused an adverse impact to such person's water rights or water supply may file a complaint in writing with the Township on a form prescribed by the Township.

b. Upon receiving a complaint pursuant to paragraph (a), the Township shall notify the Data Center Operator in writing within five (5) business days.

c. Within 60 days from the date of receipt of the complaint, the Township shall decide whether the Data Center has caused the alleged adverse impact unless the complainant has agreed in writing to an extension of time or a hearing has been requested pursuant to paragraph (e), in which case the timelines set forth in paragraph (4) shall govern.

3. **Presumptions; burdens.** The following presumptions shall apply to the Township's decision:

a. A Data Center Operator shall be presumed to be responsible for any adverse impacts to any water supply well within the AIO that occurs within 60 months following the date any production well is put into full production and shall have the burden of proving

otherwise.

b. The Data Center Operator shall not be presumed to be responsible for any adverse impact to any well that is located outside the AIO or which takes place more than 60 months from the date the well or wells are put into full production. In such cases, any person claiming adverse impacts shall have the burden of proving said adverse impacts and that they are caused by the data center's withdrawal.

4. **Hearing.**

   a. A Data Center Operator who asserts that an alleged adverse impact is not caused by the Data Center's well(s), any owner of a well outside the AIO who alleges an adverse water supply impact, and any owner of a well within the AIO who alleges an adverse impact more than 60 months from the date the data center's well or wells are put into full production, may request a hearing to be held before the North Lebanon Township Board of Supervisors pursuant to the Pennsylvania Local Agency Law, 2 Pa. C.S.A. § 551, et seq., to overcome the presumption(s) set forth in Paragraph 3 by offering such evidence as they believe rebuts the presumption(s).

   b. If the complainant requests a hearing, such request shall be made at the time of the filing of the complaint. If the Data Center Operator alleged to have caused the adverse impact requests a hearing, the request shall be made within 30 days of the mailing of the notice required by paragraph 2(b). The hearing request shall include proof of service thereof on either the Data Center Operator or upon the complainant, as the case may be.

   c. The Board of Supervisors shall schedule and conduct a hearing and make a decision in accordance with, and pursuant to the timeline set forth in, Section 908 of the Pennsylvania Municipalities Planning Code, 53 P.S. § 10908, except references therein to the zoning hearing board shall be construed as references to the Board of Supervisors.

5. **Decision.**

   a. The Board of Supervisors shall decide, based on presumptions set forth in Paragraph 3, and the testimony and evidence presented at any hearing conducted pursuant to Paragraph 4, whether the Data Center has caused the alleged adverse impact.

   b. Each decision shall be accompanied by written findings of fact and conclusions based thereon, together with the reasons therefor. Conclusions based on any provisions of any ordinance, rule or regulation shall contain a reference to the provision relied on and

the reasons why the conclusion is deemed appropriate in the light of the facts found.

6. **Remediation.** In the event that the Board of Supervisors determines pursuant to the provisions of this Section that a Data Center is responsible for an adverse impact to the water supply of others, the Data Center Operator shall alleviate the adverse impact, at no expense to the affected property owner(s), so as to furnish reasonable quantity and quality of water. Remediation may include deepening the impacted well, drilling a new well, connecting the affected property to a public water supply, or any other measures as the Township may approve as just and equitable under the individual circumstances.

K. **Enforcement.**

1. In the event that that the Data Center Operator does not commence to remedy the adversely impacted water supply within 5 days of when the Board of Supervisors finally determines that the Data Center Operator is responsible for an adverse impact, the Township may draw down the financial security posted pursuant to this Section and apply such security as the Township deems necessary to cure the problem. In the event that the financial security is not sufficient to cure the problem, the Data Center Operator shall be responsible for any additional expense, including legal, engineering and administrative costs, which are incurred in curing the problem.
2. The Township may at its option, in addition to any other remedies available to it, institute an action in equity to enjoin, or any other appropriate action or proceedings, to restrain or prevent any violation of the provisions of this Section.

L. **Financial Security.**

1. The Applicant shall deposit with the Township at the time of land development approval financial security in an amount determined by multiplying $8,000.00 by the number of all other groundwater wells within the Hydrologic Environment. The security shall be in the form of a term bond or the deposit of funds in escrow or a federal- or commonwealth-chartered lending institution irrevocable letter of credit and restrictive or escrow accounts.
2. Sixty (60) months after the date that the Data Center Operator's well(s) reaches full production, the Township shall return to the Applicant all financial security posted pursuant to this Section upon written request, except such security as may be necessary to remedy any pending claims of adversely impacted wells which have not been finally determined.

M. **Energy Sources and Power Supply.**

1. Any energy generation system designed or used to supply power

directly to a Data Center during normal operations, including solar, wind, fossil fuel, fuel cells, or nuclear energy generating systems, shall not be considered part of the Data Center use. Such systems shall be considered a separate principal use and shall be approved according to the zoning regulations applicable to such use.

2. Projects shall be designed and constructed to meet the current USGBC LEED BD+C: Data Centers rating system, or equivalent design standard, as approved by the municipal engineer.
3. The applicant for a data center shall provide an Energy Usage Plan with the Conditional Use application. The Energy Usage Plan shall provide or identify, at a minimum :
    a. a. Annual electricity demand
    b. Energy supply sources that will be utilized
    c. Energy storage capacity (if applicable)
    d. Proposed sources of back-up power
    e. Documentation of efforts to maximize use of renewable and/or clean energy for all electrical and cooling needs, including those to: Reduce the need for new electric generation by incorporating the best available energy efficiency into the design of data center servers, cooling units, and the building structure.
        i. Cover 50-80% of all unused roof space with solar arrays to offset a portion of the demand on the electric grid and reduce onsite emissions.
        ii. Explore battery storage as a backup energy source for 50-100% of total onsite back-up energy needs to reduce or eliminate the pollution associated with diesel backup generators.
        iii. Support off-site renewable energy generation through a power purchase agreement or other arrangement that will result in new renewable energy generation within the PJM region.
        iv. Monitor and report energy efficiency and emissions data to the municipality on a regular basis.
    f. If interconnecting to the energy grid, documentation of the energy utility interconnection approval process with answers to the following:
        i. Documentation that an application for the project has been filed with the electric utility provider, and the required fee has been paid.
        ii. Documentation that a transmission security agreement

has been received by the applicant.

iii. Documentation that the transmission security agreement has been signed by all necessary parties.

iv. The date that the electric utility provider provided for the proposed energization of the data center.

g. The Energy Usage Plan will be prepared and certified by a professional engineer. The plan shall be subject to review and comment by the municipality. The municipality shall have the right to require supplemental or amended plans based upon comments by the municipality prior to any zoning approval.

4. A proposed Data Center whose Energy Usage Plan shows power demand of over 50 megawatts (MW) and that proposes to connect to the power grid shall be required to procure a minimum of 10% of its power from renewable generation sources generated withing the PJM region, which include solar, wind, hydroelectric power, geothermal, and waste heat from data center cooling processes. Electricity supply shall be procured through a power purchase agreement or similar mechanism as opposed to purchasing renewable energy credits (RECs) only.

5. The applicant shall select, design, and locate the energy generation systems to limit noise, emissions, and visual impacts to adjacent and nearby uses as much as possible. Data center principal buildings shall be located between energy generation systems and residential districts or any other sensitive receptors.

6. Electric Utility Substations on the same property as the Data Center they serve shall be located on the side or rear of a Data Center principal building so they are screened from public view and shall not be located in a required front yard. On-site substations do not require a buffer or screening between the Data Center Principal Building and the substation.

7. Data Center electric utility substations visible from an arterial roadway shall include a combination of year-round opaque landscaping and screening walls to minimize visual impact.

8. Burying power lines serving the property is strongly encouraged. On-site power lines of 34.5 kV and below shall be buried.

9. Proposed substations on a parcel that abuts a zoning district boundary other than industrial, and/or a boundary with a property with a sensitive receptor shall be set back a minimum of 800 feet from the property line. If abutting both another industrial-zoned parcel and use, substations shall meet the requirements for accessory uses in the underlying zoning district.

10. Backup Power.

a. Diesel generators shall meet Tier 4 emission standards of the U.S. Environmental Protection Agency.

b. Diesel generators shall undergo annual testing, and reports shall be provided to the municipality to ensure that data center equipment is performing as designed and that emissions from the data center do not exceed permitted limits.

c. Emergency energy generation that uses diesel, gasoline, or another fossil fuel shall be used only at the following times:

i. When the primary source of energy is not available due to an emergency outage.

ii. During routine maintenance, or readiness testing for a short duration of time and capped at 100 hours per year.

iii. Routine maintenance testing of back-up fossil fuel-powered generators is restricted to the hours of 9 am through 3 pm Monday through Friday.

d. Use for peak shaving or supplying power to the grid is prohibited. The applicant shall design and locate emergency energy generation systems to limit noise and visual impacts as much as possible.

N. **Emergency Management.**

1. The applicant shall submit an Emergency Response Plan (ERP) prepared by a qualified professional. The ERP shall:

a. Evaluate the impacts, both positive and negative, of the proposed data center upon emergency services and fire protection.

b. Be reviewed and accepted by the local fire department and local and/or county-level emergency management services as part of the conditional use and land development process;

c. Include detailed procedures for fire suppression, containment, ventilation, and evacuation;

d. Include an evaluation of the access roads and hydrant locations within the site to ensure suitable access for emergency equipment within the site;

e. Ensure that all first responders receive adequate training specific to the installed system;

f. Include provisions for annual fire safety inspections demonstrating compliance with fire safety standards to be performed by a qualified professional on behalf of the Data

Center.

2. Each Data Center shall provide 24-hour emergency contact signage that is visible at the main entrance. Such signage shall include the company name (if applicable), the owner/representative's name, the telephone number, and the corresponding local power company's name and telephone number.
3. The applicant shall coordinate with the municipal emergency management coordinator to ensure there is adequate radio coverage for emergency responders within all on-site buildings and facilities, based upon existing coverage levels of the municipal public safety radio communications system exterior to on-site buildings. The applicant shall install enhancement systems, as needed, to achieve compliance.
4. Any Data Center use proposing battery storage or any other device or group of devices capable of storing energy in order to supply electrical energy at a later time, whether the energy is stored for use on-site or off-site, shall demonstrate compliance with National Fire Protection Association (NFPA) Standard 855, Installation of Stationary Energy Storage Systems, or similar standards and must include fire suppression systems designed specifically for battery storage.
5. No Data Center shall be approved unless the applicant demonstrates that procedures for fire suppression, containment, ventilation, evacuation, and disposal of hazardous waste are sufficiently protective of public health, safety and welfare.

O. **Thermal Impacts.** A Thermal Impact Mitigation Plan shall be submitted with the conditional use application, including, at a minimum:
   1. Identification of primary sources of waste heat (air- and water-based).
   2. Evaluation of potential off-site thermal impacts (including plume/ heat discharge and localized heat islands) under representative seasonal conditions.
   3. Description of design measures to minimize heat impacts (e.g., equipment siting, shielding, landscaping, cool roofs/paving where applicable).
   4. Evaluation of feasible opportunities for waste heat reuse. Where reuse is not feasible, the reason(s) why should be given, in which case alternative mitigation shall be identified (e.g., vegetative or green roof and/or site design modifications).
   5. Inclusion of a monitoring/verification approach if required by conditions of approval based on proximity to sensitive receptors or site constraints.
   6. The Plan shall be prepared and certified by a professional engineer.
   7. The Thermal Impact Mitigation Plan shall be subject to review and comment by the municipality. The municipality shall have the right to require

supplemental or amended plans based upon comments by the municipality prior to any zoning approval.

P. **Electronic Waste.** An Electronic Waste Plan shall be submitted with the zoning application outlining procedures for safe removal and recycling and/ or disposal of server infrastructure, hazardous materials, batteries, electronic waste, and related products that meet all state and federal requirements, which will apply in cases when the equipment within the data center is updated or decommissioned. The Report shall be subject to review and comment by the municipality. The municipality shall have the right to require supplemental or amended reports based upon comments by the municipality prior to any zoning approval.

Q. **Decommissioning.**

1. A Decommissioning Plan prepared by a qualified professional shall be submitted. The plan shall outline the procedures for safe shutdown, removal of equipment, disposal or recycling of materials, and site restoration.
2. The owner shall submit a notification of closure if operations are permanently ceased.
3. Decommissioning shall begin within 1 year of cessation of data center operations, or upon notice of abandonment by the operator, whichever occurs first. An extension of 1 year may be granted by the municipality if the property owner can demonstrate that they are actively marketing the site for a compatible replacement use. Decommissioning shall be completed within 18 months thereafter, unless extended by the municipality for good cause.
4. Standards for Decommissioning:
    a. All above-ground structures, equipment, and accessory facilities shall be removed.
    b. Hazardous materials, including batteries, fuel, or refrigerants, shall be disposed of in compliance with state and federal law.
    c. Disturbed soils shall be stabilized and re-vegetated.
    d. Any utility connections shall be safely disconnected and capped.
    e. The site shall be restored to a condition compatible with surrounding land uses or consistent with the most restrictive adjacent zoning district.
5. The applicant shall post a bond or other form of financial security acceptable to the Township in an amount equal to the estimated cost of fully decommissioning the data center. The cost estimate must be approved by the Township Engineer or consulting engineer. The bond/financial security amount must be updated annually to reflect current decommissioning costs.

R. **Public Engagement.**

1. The applicant shall hold a public meeting prior to the first planning commission meeting when the proposed land development or conditional use proposal is discussed. The purpose of the meeting shall be to inform the public about the nature of the proposed development, including the

location, scale, and general characteristics. A representative(s) of the applicant with knowledge of the project and the ability to answer general questions from the public about the project's general location, scale, and parameters shall participate in the meeting. The public meeting shall be advertised consistent with Data Center Ordinance Guide 25 "public notice" as defined by the Pennsylvania Municipalities Planning Code (PA Act 247).

2. The applicant shall create and maintain a project website for viewing by the general public. The site shall explain the project parameters, including maps and elevations/renderings, beginning at least two weeks prior to the meeting discussed above, and until the time of final land development approval. The site shall provide a description of the proposed use, construction timelines and phasing plans, dates of public meetings with municipal bodies, and status of permits.

S. **Parking.**

1. Data Centers are to be provided with at least one parking space for every one (1) employee, based upon the maximum number of employees on site during the largest shift, whichever is lesser, plus five (5) visitor parking spaces.

SECTION 5. Severability. If any sentence, clause, section, or part of this Ordinance or of the Zoning Ordinance is for any reason found to be unconstitutional, illegal or invalid, such unconstitutionality, illegality or invalidity shall not affect or impair any of the remaining provisions, sentences, clauses, sections, or parts hereof. It is hereby declared as the intent of the Board of Supervisors of North Lebanon Township that this Ordinance and the Zoning Ordinance would have been adopted had such unconstitutional, illegal or invalid sentence, clause, section or part thereof not been included herein.

SECTION 6. Repealer. All Ordinances or parts of Ordinances conflicting with any provision of this Ordinance are hereby repealed insofar as the same affects this Ordinance.

SECTION 7. Effective Date. This Ordinance shall take effect upon adoption.

ENACTED AND ORDAINED this 16th day of November, 2026.

(SEAL)

ATTEST:

Lori A. Books, Secretary

NORTH LEBANON TOWNSHIP
BOARD OF SUPERVISORS

By: _____
Gary R. Heisey, Chairman

By: _____
Edward A. Brensinger, Vice Chairman

By: _____
Arden A. Snook, Sr., Treasurer

APPENDIX B – SURFACE WATER WITHDRAWAL STANDARDS SUSQUEHANNA RIVER BASIN

For surface water sources, the water feasibility study shall demonstrate that withdrawals will comply with the standards set forth in Table 1:

Table 1		
Parameter	**Drainage area of stream at point of withdrawal**	
	< 50 sq. mi	**>50 sq. mi.**
Floods	Maintain magnitude and frequency of 20-year, 5-year, and 2-year floods	
Monthly high flow	No greater than 10% change to magnitude of monthly high flow in any month	
Monthly median flow	Shall remain between 45th and 55th percentile for each month	
Upper monthly flow range	No more than 20% change for any calendar month	
Lower monthly flow range	No change for any calendar month	No more than 10% change for any calendar month
Monthly low flow	No change for any calendar month	

1. Terms used in Table 1 shall have the following meanings:
   i. **20-year flood**: Peak streamflow level having a 5% chance of occurrence in any given year
   ii. **5-year flood:** Peak streamflow level having a 20% chance of occurrence in any given year
   iii. **2-year flood:** Peak streamflow level having a 50% chance of occurrence in any given year
   iv. **Percent exceedance value.** The probability that a given flow will be equaled or exceeded in the stream at the point of withdrawal within a given month, expressed as Px. For example, the probability that the P75 flow for a given month will be exceeded at some point during the month is 75%.
   v. **Monthly flow duration curve**: a cumulative curve showing percent exceedance values for flows over a calendar month
   vi. **Monthly high flow:** flow having a percent exceedance value of P10
   vii. **Monthly median flow:** flow having a percent exceedance value of P50
   viii. **Monthly low flow:** For streams with drainage areas less than 50 miles, flow having a percent exceedance value of P75, for all other streams, flow having a percent exceedance value of P95

ix. **Upper monthly flow range:** The area under the stream's monthly flow duration curve between P10 and P75

x. **Lower monthly flow range:** The area under the stream's monthly flow duration curve between P75 and P99

2. **Baseline streamflow calculation.**[24] Baseline streamflow statistics and flow duration curves shall be calculated using generally accepted methodology based on a minimum of ten (10) recent years of record, with representative wet, normal, and dry periods sufficiently represented.

3. **Use of reference stream gage.** Where data does not exist for the location from which withdrawal is proposed, data from an appropriate USGS reference stream gage shall be used to calculate baseline flow statistics. The reference stream shall be unregulated and of a similar drainage area size, physiographic province and geology, and mean annual precipitation and evapotranspiration, and ideally located on the same stream or on a nearby stream. Best professional judgment shall be used in selecting a reference stream that best represents the project site. Flow statistics from the reference gage shall be transferred to the project site using the drainage area ratio method.

4. **De minimis withdrawals**. An applicant is exempt from the requirement to demonstrate compliance with Table 1 if the feasibility study demonstrates that withdrawals will be *de minimis*. A withdrawal is *de minimis* if it does not exceed 5% of P95 for any calendar month for streams having a drainage between 10 and 1,000 square miles at the point of withdrawal or 10% of P95 for any calendar month for streams having a drainage area greater than or equal to 1,000 square miles at the point of withdrawal. No withdrawal shall be considered *de minimis* for streams having a drainage area less than 10 square miles at the point of withdrawal.

5. **Minimum passby flows.** Minimum passby flows must be maintained at all times, in accordance with Table 2. A passby flow is the prescribed quantity of water that must be allowed to pass the point of withdrawal at all times during which withdrawal is occurring.

Passby flow requirement	
Drainage area of stream at point of withdrawal	**Required monthly passby flow**
≤10 mi.	P70
10–49.9 mi.	P75
50–199.9 mi.	P80
200–999.9 mi.	P85
1,000–4,999.9 mi.	P90
≥ 5,000 mi.	P95

[24] Susquehanna River Basin Commission, TECHNICAL GUIDANCE FOR LOW FLOW PROTECTION RELATED TO WITHDRAWAL APPROVALS UNDER POLICY NO. 2012-11 at 6–7 (2012).

DELAWARE RIVER BASIN

For surface water sources, the water feasibility study shall demonstrate that withdrawals will comply with the standards set forth in Table 1:

Table 1			
Parameter	**Drainage area of stream at point of withdrawal**		
	<10 sq. mi.	**10–200 sq. mi**	**> 200 sq. mile**
Floods	Maintain magnitude and frequency of 20-year, 5-year, and 2-year floods		
Monthly high flow	No greater than 10% change in magnitude in any month		
Monthly median flow	No change	No greater than 10% change in magnitude in any month	
Monthly low flow	No change	No greater than 10% change in magnitude in any month	
Upper monthly flow range	No greater than 20% change in magnitude in any month		
Middle monthly flow range	No change	No greater than 10% change in magnitude in any month	No greater than 15% change in magnitude in any month
Lower monthly flow range	No change	No greater than 10% change in magnitude in any month	

1. Terms used in Table 1 shall have the following meanings:
    i. **20-year flood**: Peak streamflow level having a 5% chance of occurrence in any given year
    ii. **5-year flood:** Peak streamflow level having a 20% chance of occurrence in any given year
    iii. **2-year flood:** Peak streamflow level having a 50% chance of occurrence in any given year
    iv. **Percent exceedance value.** The probability that a given flow will be equaled or exceeded in the stream at the point of withdrawal within a given month, expressed as Px. For example, the probability that the P75 flow for a given month will be exceeded at some point during the month is 75%.
    v. **Monthly flow duration curve**: a cumulative curve showing percent exceedance values for flows over a calendar month
    vi. **Monthly high flow:** flow having a percent exceedance value of P10
    vii. **Monthly median flow:** flow having a percent exceedance value of P50

viii. **Monthly low flow:** For streams with drainage areas less than 10 miles, flow having a percent exceedance value of P75, for all other streams, flow having a percent exceedance value of P90

ix. **Upper monthly flow range:** The area under the stream's monthly flow duration curve between P10 and P50

x. **Middle monthly flow range:** The area under the stream's monthly flow duration curve between P50 and P75

xi. **Lower monthly flow range:** The area under the stream's monthly flow duration curve between P75 and P99

2. **Baseline streamflow calculation.**[25] Baseline streamflow statistics and flow duration curves shall be calculated using generally accepted methodology based on a minimum of ten (10) recent years of record, with representative wet, normal, and dry periods sufficiently represented.

3. **Use of reference stream gage.** Where data does not exist for the location from which withdrawal is proposed, data from an appropriate USGS reference stream gage shall be used to calculate baseline flow statistics. The reference stream shall be unregulated and of a similar drainage area size, physiographic province and geology, and mean annual precipitation and evapotranspiration, and ideally located on the same stream or on a nearby stream. Best professional judgment shall be used in selecting a reference stream that best represents the project site. Flow statistics from the reference gage shall be transferred to the project site using the drainage area ratio method.

4. **De minimis withdrawals**. An applicant is exempt from the requirement to demonstrate compliance with Table 1 if the feasibility study demonstrates that withdrawals will be *de minimis*. A withdrawal is *de minimis* if it does not exceed 5% of P95 for any calendar month for streams having a drainage between 10 and 1,000 square miles at the point of withdrawal or 10% of P95 for any calendar month for streams having a drainage area greater than or equal to 1,000 square miles at the point of withdrawal. No withdrawal shall be considered *de minimis* for streams having a drainage area less than 10 square miles at the point of withdrawal.

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[25] Susquehanna River Basin Commission, TECHNICAL GUIDANCE FOR LOW FLOW PROTECTION RELATED TO WITHDRAWAL APPROVALS UNDER POLICY NO. 2012-11 at 6–7 (2012).

OTHER RIVER BASINS

e. For surface water sources classified by PADEP as Exceptional Value (EV), High Quality (HQ) or Cold Water Fishes (CWF), the water feasibility study shall demonstrate using the Pennsylvania-Maryland Instream Flow Study (PA-MD IFS) model that withdrawals will not cause habitat loss in excess of the following:

1. For Exceptional Value and High Quality streams, withdrawal shall not cause annual instream habitat loss greater than 5%
2. For streams classified as Cold Water Fishes and as Class B wild trout streams by the PA Fish and Boat Commission, withdrawal shall not cause annual instream habitat loss greater than 10%
3. For streams classified as Cold Water Fishes and as Class C or D wild trout streams by the PA Fish and Boat Commission, , withdrawal shall not cause instream annual habitat loss greater than 15%
4. In no case shall passby flow in any stream be less than the lowest seven-day average flow that occurs on average once every ten years ($Q_{7\text{-}10}$) at the point of withdrawal
5. For surface water sources classified by PADEP as Warm Water Fishes (WWF), the water feasibility study shall demonstrate that passby flow shall meet or exceed 20% of annual average daily flow (ADF) for the surface water or the lowest seven-day average flow that occurs on average once every ten years (Q7-10) at the point of withdrawal, whichever is higher.

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[28] This provision is appropriate for streams with drainage areas of less than 100 miles that are designated as Cold Water Fisheries, Hiqh Quality, or Exceptional Value and are located in the river basins not covered by the provisions above.