

City of Highland
Special Regular Council Meeting
Date July 31, 2023

- 1) Determination of Quorum
- 2) Roll Call
- 3) New Business
 - (a) Ordinance 2023-01
- 4) Adjournment

**ORDINANCE 2023-01
CITY OF HIGHLAND, ARKANSAS**

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BE IT ENACTED BY THE CITY OF HIGHLAND, ARKANSAS,

AN ORDINANCE TO BE ENTITLED:

**AN EMERGENCY ORDINANCE ADOPTING CERTAIN RULES AND REGULATIONS
CONCERNING EXTERNAL NOISE ATTENUATION OF DATA CENTERS AND TO
PREVENT NOISE DISTURBANCE IN THE CITY OF HIGHLAND; TO DECLARE AN
EMERGENCY; AND FOR OTHER PURPOSES**

WHEREAS, the equipment associated with the cooling systems and generators required to operate data centers generate broadband noise and low-frequency hums that result in noise disturbance. Noise disturbance is the cause of degradation and may produce negative impacts on public health, property, and the environment.

WHEREAS, noise attenuation should be an integral part of the design and construction of data centers in order to prevent noise pollution and noise disturbance.

WHEREAS, the CITY finds that the public interest is served by the prevention of unreasonable noise emanating externally from the Data Centers and the provisions of this Ordinance are enacted for the purpose of preserving and protecting the public health, safety, welfare and property of the citizens of Highland, Arkansas.

**THEREFORE, BE IT ORDAINED BY THE CITY OF HIGHLAND, ARKANSAS, AS
FOLLOWS:**

ARTICLE 1. Purpose and Applicability

All Data Centers constructed within this jurisdiction shall be designed and built to incorporate external noise attenuation measures in order to minimize the impact of noise disturbance on the residents of Highland, Arkansas.

This ordinance shall apply to limit the noise disturbance originating within the municipal limits of Highland, Arkansas.

ARTICLE 2: Definitions

For the purpose of this Ordinance, the following definitions shall apply unless the context clearly indicates or requires a different meaning:

1. *Ambient Noise*: The all-encompassing noise level associated with a given environment, being a composite of sounds from all sources, excusing the alleged offensive noise, at the locations and approximate time at which comparison with the alleged offensive noise is to be made.

2. *Data Center*: A facility constructed and operated that is engaged in storage, management, processing, and transmission of digital data, including facilities used for cryptocurrency mining, which houses networked computer systems along with supporting equipment such as batteries, back-up power generators, HVAC and cooling systems.
3. *Decibel (dB)*: A unit for measuring the volume of a sound, equal to twenty (20) times to the base 10 (10) of the ratio of the pressure of the sound measured to the referenced pressure, which is twenty (20) micropascals (twenty (20) micronewtons per square meter.)
4. *Mechanical Equipment*: The networked computer systems along with supporting equipment such as batteries, backup generators, and cooling systems housed on the Data Center's property.
5. *Noise Attenuation*: The reduction of noise levels through the use of sound-absorbing material, architectural design techniques, and/or any other suitable means.
6. *Noise Disturbance* is any sound which:
 - a. Endangers or injures the safety or health of humans or animals; or
 - b. Annoys or disturbs a reasonable person of normal sensitivities; or
 - c. Endangers or injures person or real property.
7. *Person*: An individual, association, partnership, or corporation, including any officer, employee, department, or agency.
8. *Property Line*: An imaginary line along the ground surface, and its vertical extension, which separates the real property owned by one person from that owned by another person, but not including intra-building real property divisions.
9. *Sound*: An oscillation in pressure, particle displacement, particle velocity or other physical parameter, in a medium with internal forces that causes compression and rarefaction of that medium. The description of sound may include any characteristic of such sound, including duration, intensity and frequency.
10. *Sound Level*: The weighted sound pressure level obtained by the use of s sound level meter and frequency weighting network, such as A, B, or C as specified in American National Standards Institute specifications for sound level meters (ANSI SI. 4-1971, or the latest approved revision thereof). If the frequency weighting employed is not indicated, the A-weighting shall apply.
11. *Sound Level Meter*: An instrument which includes a microphone, an amplifier, RMS detector, integrator or time averager, output meter, and weighting networks used to measure sound pressure levels.

ARTICLE 3: Noise Attenuation Requirements

Before a Data Center has commenced construction or operating within this jurisdiction, the property owner and operator proposing to build a Data Center shall comply with the following:

1. Notice Requirements

- a. The property owner and operator must notify all residents within a half-mile radius of the parcel, including any affiliated homeowners' association operating within the half-mile radius, that the property owner and operator intends to build and operate a Data Center on the property. The notice required in this section must be mailed to all postal addresses and homeowners' association addresses contained within a half-mile radius extending from the property line where the proposed Data Center will be built. Proof of notification shall be filed with the city clerk's office within 30 days of providing notice. The property owner and operator must notify the mayor that the property owner and operator intends to build and operate a Data Center. The notification must include the location for the proposed data center.

2. Noise Study Requirements

- a. The property owner of the lands upon which the Data Center is to be located shall conduct a sound study performed by a third-party acoustic engineer to document baseline sound levels in the area of the proposed Data Center, including noise levels measured at the property line in eight locations (north, south, east, west, northeast, northwest, southeast, southwest.) The report of the study must include sound mitigation recommendations based on the results of the sound study. The property owner must provide a copy of the report of the study to the mayor and file with the city clerk within 30 days of completion of the report.

3. Noise Attenuation Plan Requirements

- a. The property owner must consult with a third-party architectural or design firm to develop a building plan that includes necessary noise attenuation measures in order to prevent the external sound level emanating from the Data Center from exceeding the sound level limitations below which will be considered a noise disturbance. The building plan is not required to adopt any or all of the noise attenuation recommendations so long as the plan includes noise attenuation measures that the architectural or design firm deems adequate to be in compliance with this Ordinance. Noise attenuation measures may include but not limited to:
 - i. Soundproofing walls, screens, panels, fences, or enclosures
 - ii. Buffer yards
 - iii. Other noise attenuation measures recommended by the third-party acoustic engineer
- b. Mechanical equipment must be shown on any proposed plan and must be fully screened on all sides. Mechanical equipment not screened by a facade of the building must be screened by a visually solid fence, screen wall or panel, or parapet wall and constructed with a design, materials, details, and treatment compatible with those used on the nearest facade of the building.
- c. The property owner must provide a copy of the building plan to the mayor and file with the city clerk within 30 days of completion of the plan prior to construction.

- d. Any additions, changes, or expansions of the Data Center must comply with the noise attenuation requirements of this Ordinance and must be designed and submitted to the mayor and filed with the city clerk within 30 days of completion of the report.
4. *Post Completion Noise Study Requirements*
- a. Upon the Data Center's completion, the Data Center operator must conduct a post-construction noise study performed by a third-party acoustic engineer to document noise levels emanating from the Data Center when mechanical equipment is running at full capacity, including all HVAC units and generators necessary for peak operation. Noise levels are to be measured at the property line in the original eight locations used during the baseline study. The Data Center operator must provide a copy of the report to the mayor and file with the city clerk within 30 days of completion of the study.
 - b. The Data Center shall not begin operations until the completion of the post-construction noise study and submission to the mayor and city clerk as required above. In order for the Data Center to be in compliance, the noise study results must show that its operation is in compliance with this Ordinance. If the results show that the Data Center is not in compliance with this Ordinance, the Data Center will be unable to commence operation until the required noise attenuation measures and noise limitations are met.
 - c. Furthermore, the Data Center operator must conduct annual noise studies under the baseline and post-construction studies specifications in accordance with subsections (a) and (b) above. The Data Center operator must provide the results to the mayor and file with the city clerk within 30 days after the anniversary date of the first sound study report.

ARTICLE 4: Procedure for Measurement

All tests shall be conducted according to the following procedures:

1. *Complaint Driven:* When the measurement is the result of a complaint, measurements will be taken at the property line of the receiving property.
2. *Normal Monitoring:* When the measurement procedure is in the normal course of monitoring sound, the measurements will be taken at the real property line of the source of the sound.
3. *Outdoor Conditions:* No outdoor measurements must be taken while winds exceed (including gusts) 15 miles per hour; under conditions that will allow the sound level meter to become wet; or when the ambient temperature is out of range of tolerance on the sound meter.
4. *Calibration:* The sound level meter must be verified and calibrated according to the manufacturer's specifications immediately prior to taking the measurements.

5. *Meter Placement:* The sound level meter must be placed a minimum of four feet above the ground or from any reflective surface. The microphone must be pointed at the sound source.
6. *Measurements:* Measurements must include “high”, “average”, and “low” readings. If the sound level meter does not provide these multiple readings, a minimum of three separate measurements must be taken at a single location at varying time intervals. The average sound level reading shall be used to determine whether there has been a violation of this Ordinance.
7. *Monitoring Report:* The report for each measurement session must include:
 - a. The day, date and time of the measurements,
 - b. Date and time of recent calibration,
 - c. Temperature and wind speed the time of measurement,
 - d. Identification of the monitoring equipment,
 - e. Location, land use, and description of the source,
 - f. Location and land use of the listener, and
 - g. Sound level measurements.
8. *Extraneous Sounds:* If there are extraneous sound sources that are unrelated to the measurements and increase the monitored sound level, the measurement shall be postponed until these noises subside.

ARTICLE 5: Noise Limitations

It shall be unlawful for any Data Center to make, or continue to cause or permit to be made or continued, noise levels constituting a noise disturbance. For the purposes of this section, the external noise level emanating from Data Centers shall be deemed disturbing to a person, reasonably calculated to disturb the peace and unreasonably offensive and injurious to the public, or their property, if the sound level is:

1. 65 dBA or higher during the hours of 8 A.M. to 10 P.M. or 55 dBA or higher during the hours of 10 P.M. to 8 A.M. (as determined by a third-party acoustic engineer) measured at the property line of the receiving property.
2. The standard which may be considered in determining whether a violation of this Ordinance exists includes but is not limited to the following:
 - a. The level or volume of the noise
 - b. The time of day or night the noise occurs
 - c. The duration of the noise
 - d. Whether the noise is recurrent, intermittent or constant
 - e. Whether proper and reasonable noise attenuation methods were followed and maintained
 - f.

ARTICLE 6: Violations

1. Any or all of the following persons may be held responsible for noise violations:
 - a. The person operating the equipment or creating the noise;
 - b. The person who employs the person operating the equipment or creating the noise at the time of the violation;
 - c. The person who owns or rents the property where the violation occurs.
2. The following acts, and the causing thereof, are declared to be in violation of this Ordinance:
 - a. The sound level emanating from the Data Center exceeds 65 dBa or higher during the hours of 8 A.M. to 10 P.M. or 55 dBa or higher during the hours of 10 P.M. to 8 A.M. measured at the property line of the receiving property.
 - b. The noise attenuation measures provided in the design plan to the mayor are not incorporated in the construction of the Data Center.
 - c. Any of the required sound study results are not filed with the mayor and the city clerk within 30 days of completion of the report.
 - d. The building plan is not filed with the mayor and the city clerk within 30 days of completion of the plan prior to construction.
 - e. Failure to act in accordance with any other provision of this Ordinance.
3. All data centers shall be in compliance with the requirements of this Ordinance before commencing operation; failure to do so will be deemed in violation of this Ordinance and result in an injunction and/or a stay in commencing operation.

ARTICLE 7: Penalties

- (1) Any person(s), firm, corporation, partnership, association, owner, occupant, agent or anyone having ownership in the subject property or supervision or control over the Data Center that violates or fails to comply with any provision of this Ordinance, shall be guilty of a misdemeanor.
- (2) Upon conviction of such violation, any offending party shall be punished by fine of \$1,000 for any one specified offense or violation, or double that sum for repetition of the offense or violation. If the act prohibited is continuous in time, the fine or penalty for allowing the continuance thereof, in violation of this Ordinance, shall be \$500 for each day that it may unlawfully continue. If the prohibited act continues after conviction of violation, an injunction in court of proper jurisdiction to abate the nuisance and violation of the Ordinance may be sought and awarded.
- (3) The city or any citizen shall be entitled to pursue all legal and equitable remedies available under the law in order to abate the nuisance and compel compliance with this Ordinance, including injunctive relief and any civil damages the court deems appropriate.
- (4) Until the Data Center is in compliance with this Ordinance and required noise attenuation measures are implemented and noise limitations met, the data center shall cease operations.

ARTICLE 8: Severability

If any provision of this Ordinance is found to be invalid by the decision of any court of competent jurisdiction, such invalidity shall not affect the remaining sections, phrases, and provisions of this Ordinance which remain valid and enforceable.

ARTICLE 9: Emergency Clause

The CITY of Highland finds that the immediate implementation of this ordinance is necessary for the preservation of the public's peace, health, safety, welfare, and property, an emergency is hereby declared to exist and that this Ordinance is to be in effect immediately after its adoption.

PASSED AND APPROVED this _____ day of _____, 2023.

APPROVED: _____
MAYOR

ATTEST: _____
RECORDER/TREASURER

FREQUENTLY ASKED QUESTIONS

What are crypto miners?

Crypto-miners are groups of computers that work continuously to solve block-chain algorithms for a chance to be financially rewarded. Under Act 851, there are two types of crypto miners: (1) Home digital asset miners; and (2) Digital asset mining business. The two types are regulated differently.

Are there any advantages to crypto miners moving into a community?

Yes. Crypto miners can generate revenue for a community by using lots of electricity which is subject to taxes and franchise fees. Commercial crypto miners often house lots of computers that are subject to property taxes. Assuming secondary impacts are properly managed, these revenues may greatly exceed the increased burdens imposed on cities and towns by crypto miners.

What are the regulatory concerns about crypto miners?

1. Appearance. Sometimes, crypto miners are housed in large shipping containers that are inappropriate for areas where aesthetics are important to a community.
2. Noise. The primary complaint about crypto miners is noise. Crypto miners can produce significant noise that is disruptive to a community.
3. Portability. Crypto miners are typically very portable; meaning, they can move overnight. The business processes of cities and towns should contemplate the inherent portability of crypto miners.
4. Electric Usage. Crypto miners consume lots of electricity. In areas where the availability of electricity is limited, crypto miners can be challenging for local utilities.
5. Wastewater Usage. Crypto miners typically have little demand for wastewater infrastructure. This is only a problem where a city or town has invested in wastewater infrastructure adjacent to a crypto miner and plan to recoup the investment through usage fees.
6. Water Usage. Water usage by crypto miners can vary greatly. Those that use water for cooling will use enormous amounts of water while those that use other cooling technologies will use little water.
7. Environmental Objectives. A city or town seeking to reduce its carbon footprint will find crypto miners to be challenging. Crypto miners consume enormous amounts of electricity that cause some environmental objectives to be harder to achieve.

How does Act 851 constrain local regulation?

1. No prohibition. Under 14-1-504(a), a digital asset mining business that complies with four general requirements may not be prohibited from operating in the state. A simple reading of this rule means that an otherwise compliant digital asset mining business must be allowed to operate somewhere in the state. More technically, the rule suggests that a digital asset mining business may not be prohibited by any city or town because it is not considered a *nuisance per se*. I recommend that each city and town designate an area where digital asset mining business can lawfully operate.

2. Must allow home digital asset mining in residential zones. Under 14-1-504(c), residents are allowed to operate home digital asset mining businesses in their homes. This rule is consistent with other home-based business rules. Please note that noise regulations apply under #4 below.
3. Must allow digital asset mining businesses in industrial zones, unless area is designated for another use. Under 14-1-504(d), a person may have a digital asset mining business in an industrially zoned area unless the area is designated for other uses. This rule both creates an assumption that crypto mining business should be located in industrial areas and provides an exception for cities that wish to designate an industrial area for other purposes, such as an industrial park used to attract jobs (crypto miners have few employees).
4. Noise emanating from home digital asset mining may be regulated. Under 14-1-505(a)(1), noise regulations applicable to home digital asset mining should be no different than general noise regulations. I recommend that you review your noise ordinance and consider regulating continuous noise differently than peak noise.
5. Noise emanating from digital asset mining businesses may be regulated. Under 14-1-505(a)(2), noise regulations applicable to digital asset mining businesses should be no different than noise regulations for data centers. I recommend that you review your noise ordinance and consider specific noise regulations for crypto miners and data centers.
6. Avoid discriminatory practices. Under 14-1-505(a)(4), cities and towns are prohibited from rezoning an area with the intent or effect of discriminating against a digital asset mining business. This means that you should not rezone an area from industrial to residential or commercial when you know that a digital asset mining business plans to locate in that area.

What points should a city or town consider in regulating crypto miners?

1. Stay within the rules.
2. Restrict crypto miners to home-based operations or industrial zones.
3. Review your noise ordinance and consider special restrictions on: (a) continuous noise; and (b) noise from crypto miners and data centers.
4. Restrict crypto mining from areas that you are specifically using for purposes that are inconsistent with crypto mining, like industrial parks used to attract jobs.

Review utility rules and rates to manage risk associated with inherently transient businesses like crypto miners.

In working to understand the impact of Act 851 it's important to first understand four key things about the act:

- (1) the written intent of Act 851;
- (2) the definitions and therefore distinction between “digital asset mining business” and “home digital asset mining”;
- (3) what Act 851 expressly authorizes; and
- (4) what Act 851 expressly prohibits.

To start, the intent of Act 851, as written in the act itself, is to recognize that data centers create jobs, pay taxes, and provide general economic value to local communities and this state; and to clarify the guidelines needed to protect data asset miners from discriminatory industry specific regulations and taxes.

Turning towards the definitions, again contained in Act 851, let's start with the definition of “digital asset mining business.” Act 851 defines these as “a group of computers working at a single site that consumes more than one megawatt (1MW) on an average annual basis for the purpose of generating digital assets by securing a blockchain network.” A “home digital asset mining,” on the other hand, is defined in Act 851 as a “mining digital assets in areas zoned for residential use.” Keep these two definitions in mind as you continue reading because Act 851 distinguishes between these two when determining what a city or town can do, or not do, when thinking of regulating these two types of crypto facilities.

Per Act 851, a “digital asset mining business” may operate in this state if the digital asset mining business complies with four things:

- (1) state law concerning business guidelines and tax policies;
- (2) any ordinance concerning operations and safety;
- (3) any rule or rate for utility service provided by or on behalf of a public entity; and
- (4) State and federal employment laws.

As you know, Arkansas law expressly authorizes cities and towns to “perform any function and exercise full legislative power in any and all matters of whatsoever nature pertaining to its municipal affairs.” Ark. Code Ann. § 14-43-602. Of course, there are limitations on this express authority, i.e., when the Legislature passages legislation to limit that authority. Act 851 sets such limitations by, first and foremost, prohibiting local governments from outright banning digital asset mining businesses. But, the act does allow for local governments to determine, in part, where a “digital asset mining business” can locate inside a city or town. For example, Act 851 specifically states that

a person may have a “digital asset mining business” in an area that is zoned for industrial use that has not been designated by the local government for other uses. In other words, a city or town can’t pass an ordinance prohibiting a “digital asset mining business” from operating, but the city or town can require that business locate in an industrial zone. In other words, “digital asset mining businesses” do not have exceptions from all local government regulations, laws, or rules; but Act 851 does place a limit on a city or town’s ability to restrict and regulate.¹

Now that we know what a “digital asset mining business” needs to comply with to operate and now that we know a bit about how a city or town can regulate these businesses, let’s turn to more specifics about what Act 851 prohibits local governments from doing in relation to the operation of “digital asset mining businesses.”

According to the Act, local governments cannot:

- (1) enact or adopt an ordinance, policy, or action that limits the sound decibels generated from “home digital asset mining” other than the limits set for sound pollution generally;
- (2) impose a different requirement for a digital asset mining business that is applicable to any requirement for a data center;
- (3) rezone an area in which a digital asset mining business is located without complying with applicable state law and local zoning ordinances; and
- (4) rezone an area with the intent or effect of discriminating against a digital asset mining business.

Let’s break these restrictions on local governments down a bit more. The first (1) restriction is related to “home digital asset mining” and noise ordinances. Like other home businesses, people typically don’t know a business is being operated in their

¹ While this list seems easy enough, there is an argument floating around that so long as a digital asset mining business satisfies the four things above, then there can be no further regulation on these businesses. In our opinion, this argument reads words into this section than what actually exist. For starters, all this section of Act 851 states is that a digital mining business “may operate in this state” if the business complies with these four things. This section does not state, “a digital asset mining business shall be authorized to operate anywhere in the state.” Nor does it by default preempt digital asset mining businesses from following any other state, federal, or local rule or law that is not encompassed in those the four listed points. For example, it would be difficult to argue that a digital asset mining business is authorized to violate any ADEQ or EPA rules, or the State Fire Code, or any other local ordinances.

neighbor's house until it gets to point where it's obvious that a non-residential use is occurring on the property. As we now know, someone would likely never know that a neighbor is using their house for home digital asset mining. If someone is running a couple of computers mining Bitcoin, it's unlikely that anyone will ever hear it; this is because the neighbor doesn't need industrial-size HVAC units to keep the systems cool, which is the primary reason there is so much noise associated with large-scale crypto mining businesses. But, recall the definition of "digital asset mining business" mentioned above; if your neighbor has a group of computers that consumes more than one megawatt of power on an average annual basis for the purpose of generating digital assets, then your neighbor now has a "digital asset mining business" and is no longer operating a "home digital asset mining" business. With that in mind, Act 851 prohibits a city or town from enacting any noise ordinance applying to "home digital asset mining" that does not apply to noise in your city or town generally, i.e., there can be no special noise ordinance targeting a "home digital asset mining" business.

Turning to the second (2) restriction, cities and towns are prohibited from imposing different requirements for a "digital asset mining business" than what is applicable to other "data centers." The third (3) restriction prohibits local governments from rezoning areas in which digital asset mining businesses exist without following state law and your own zoning ordinances. The final (4) restriction prohibits local governments from discriminating against this type of business. These restrictions on cities and towns are in line with the intent of Act 851.

Now, let's discuss some of the practical issues your city or town will likely face and how you can deal with those issues. Before we do, let's reiterate that local governments cannot outright prohibit digital asset mining businesses. Even though there is no outright prohibition on these businesses, there are three avenues by which a city or town can address some of the common challenges that consistently arise with these types of businesses.

The first avenue is through existing zoning and land-use law. This, of course, applies primarily to cities that have zoning and land-use plans already implemented. Like we mentioned above, Act 851 authorizes a person to have a digital asset mining business in an area that is zoned for industrial use that has not been designated by the local government for other uses. But, that is not the end of your city's ability to apply existing local zoning laws—all of your other local zoning ordinances are still applicable. With that said, your local zoning ordinances may need to be updated to consider "data centers" and now, more specifically, "digital asset mining businesses." If your city has no zoning ordinances related to "data centers" and/or "digital asset mining business", now would be a good time to look into making changes to your zoning to reflect these new types of businesses.

The second avenue local governments have available is through your authority and ability to abate nuisances. A "nuisance" under Arkansas law (Ark. Code Ann. § 14-54-1502) is defined as conduct within a city or town that unreasonably interferes with

the use and enjoyment of lands of another, including conduct on property which disturbs the peaceful, quiet and undisturbed use and enjoyment of nearby property. As you know, a primary function of a city or town is to ensure the peaceful, quiet and undisturbed use and enjoyment of residents' property. This means cities and towns can enact reasonable and non-discriminatory legislation at the local level to ensure everyone can enjoy their property. One of the biggest ways a resident's ability to enjoy her/his property can be interfered with is through noise; so, let's start there.

As we're sure many of you have seen—or heard—there are many examples of “digital asset mining businesses” being very noisy, and being very noisy 24/7. While Act 851 specifically prohibits local governments from passing a noise ordinance on “home digital asset mining” businesses that is different than the general sound pollution ordinance, Act 851 does not prohibit local governments from having noise ordinances on “digital asset mining businesses” so long as that noise ordinance applies the same to data centers. We'll also note a key distinction in a traditional noise ordinance and the issue with noise we're seeing with “digital asset mining businesses”—we're not dealing with someone running a chainsaw or revving up a motorcycle for a couple minutes or for a couple of hours; rather, we are dealing with a continuous noise that never stops at high levels extending off the property lines. We should add that while noise is a primary concern with “digital asset mining,” Act 851 does allow other types of requirements on these businesses, so long as those requirements apply to the same data centers.

Finally, the third avenue through which cities and towns can deal with some of these issues is through utility rates. Act 851 requires “digital asset mining businesses” to comply with any rule or rate for utility service provided by or on behalf of a public entity. Further, the prohibition from imposing a different requirement for a digital asset mining business than what is applicable to other data centers does not apply to any rule or rate for utility service provided by or on behalf of a public entity. So, when setting our rates for utility services, local governments can analyze the impact these types of businesses will have on the utility system when setting rates for a “digital asset mining business.”